Breeding the Brown-backed Solitaire

Myadestes obscurus

by L. Gibson Portland, Oregon

The eight or so solitaires are found in upland areas, with one species in the Rockies, one in the Andes and the rest in Central America and the Caribbean. Also, an aberrant solitaire reached Hawaii where it formed four species. One of these is extinct and the others are just about gone, so perhaps this account will encourage a captive breeding program.

These approximately 7" 37g birds look and behave like flycatchers, perching bolt upright for long periods looking for insects, which they snap up with their weak little bills, often with much clacking. They are all similarly garbed in shades of gray and brown.

All are notable songsters, a fact

attested to by their common names, which include "Mountain Whistler," "Musician Bird," "Bugler" (Clarin, Clarino), "Linnet" (Jilguero) and "Common Linnet". These names may be given indiscriminately to several species and the latter three, along with "Guardian of the Cliff," have all been applied to the Brown-backed Solitaire.

M. obscurus ranges from the north of Mexico to Honduras and its habitat is described as "fairly dense mountain forest." Like the other solitaires, its habits are a bit strange and the males at least appear to be fearless. The cock of this pair was a delightful bird and spent most of the breeding season sitting singing on the feeding tray and often did not move until I was within





two feet. The cock and chicks tolerated a camera at less than a yard. The male chicks became quite steady like the father. The hen was a bit more wary, but the pair often took a bath while I was hosing the aviary. *Myadestes* are infrequent bathers, taking one bath a week at most.

This breeding was easy to observe minutely because of the set up, and it proved to be a real cliffhanger for me and probably for the birds, too. They had three failed attempts but by the fourth successive try they were functioning like a well-oiled machine.

Aviary

Central to all observations was the design and placement of the aviary which is built into an L-shaped corner of the house and measures a slightly irregular 16' (4.8m) x 12' (3.6m). It is fully roofed, enclosed on three sides and open to the south. Even then, part of this exposure is enclosed by rigid acrylic, and plastic sheeting on wooden frames was made to fit all the open wire and is now kept permanently in place on the lower four feet of the open side. This made it, in effect, a cold greenhouse and has enabled two amazingly hardy tropical fruits, Passion Vine P. edulis and Feijoa F. sellowiana, to survive.

However, this aviary is designed not to be viewed from the garden but from inside the house. A large kitchen window takes up most of one end, affording a view of 95% of the area. A feeding table was placed hard against the window and a water dish was set beneath a tap on the ground just below. In addition, a small bathroom window is located halfway along the adjacent wall. From a seat at the kitchen table, the birds were observed in great detail.

For the final, successful nesting, an open-fronted cardboard box was placed on the wall opposite the big window in such a position that the inside could be seen easily with binoculars. All details of brooding and feeding behavior were thus noted. It was also easy to observe the chicks when they finally hatched.

The adults, in good condition save for some badly frayed feathers, were obtained in late February just when I returned from Britain. As the birds were almost at the pairing-up stage, I had no time to do anything but put them straight out in the aviary. Usually there is little chance of breeding unacclimated birds obtained so late. As is the usual policy, I worked in the aviary as much as possible so that the birds became used to my presence. With the *Myadestes*, this only took about a week.

The frayed tail of the hen proved useful in identifying the birds at a distance. The hen had just come into breeding condition and she actively solicited attention. However, the cock chased her off. The next morning she was nowhere to be seen and a hurried search located her hungry and slightly injured on the ground, hiding beneath some large Calla Lily leaves. There was blood on the inside of one wing but the injury was superficial and within an hour she was jumping around in a small cage.

Thereafter followed the most nervewracking month I have ever experienced in bird keeping - worse even than breeding the bad tempered Hardwicke's. The cock and hen were alternated daily in a small cage, placed on a stepladder inside the aviary. When the hen was out, she ran up and down on the roof of the cage, bobbing her tail seductively. The cock has fine little quarter inch white plumules hidden at the "shoulder" of his wing (like the blue epaulettes of the Chloropsis) which he sticks out and vibrates if excited or, more usually, if annoved and threatening a rival. When the cock was out, he rammed the polypropylene netting and bristled his white flashes while attempting to drive off the hen. At other times, he would sit pensively on top of the cage for an hour. Both birds raised the feathers on the back of the head when confronting one another. A second male was put out in another cage beside the hen, as a distraction, but this only drove the resident male into a greater rage as he tried to get at both birds. The cocks flashed white at each other until the caged male was removed.

Finally, after nearly four weeks and several unsuccessful attempts at putting them together, the cock chased the hen for only a few minutes, but did not follow up. They reached an armed truce in which the hen threatened the cock with wide open beak if he came too near. She rather pathetically alternated this with bobbing and calling to the male, to which he paid not the least attention. While all this was going on, the indoor male had been singing at full blast. Then, towards the end of March, the aviary male began to sing at half volume and suddenly began to feed the hen. His tail had still been growing and had now reached its full length. The inside male was put out again in a cage and was immediately attacked by the hen this time! On 10 April, the hen began to pick up odd bits of nesting material.

Diet

Their favorite prey would seem to be soft-bodied insects. They hawked the smallest midges and were equally delighted if they caught a large moth. These were eaten at high speed. The birds soon settled on a staple diet of bread spread with peanut butter and margarine and, as the year progressed, ate substantial quantities of elderberries and blueberries. Also favored were yew and one species of cotoneaster. Berries had to be small, soft and smooth and *Rubus* sp. (raspberries, etc.) were only eaten occasionally and in small quantities. Soaked currants and, less often, chopped grapes became a daily staple when berries were not available. They even began to eat some powdered dog kibble, but refused to eat mealworms until they were raising chicks. The cock also ate maggots and a few very small earthworms, but the hen would not look at these. Both took blowflies.

A peculiar item in their diet was flower petals. They were seen to pick large white Camellia petals, bang them around for a while, and finally swallow them. They did the same with Feijoa flowers and sometimes with tender Feijoa shoots. The hen at these much more often than the cock. Later, a variety of flowers was offered but no interest was shown. They pecked only at white flowers and these had to have thick, fleshy petals before they were eaten. I tasted Camellia and Feijoa petals and they were faintly perfumed, juicy and slightly sweet. The other male bird was seen to eat lavender rhododendron petals of the probably poisonous variety "Blue Peter." I passed up on tasting these!

When the chicks were two months old, they began to pick at shoots, both new and withered. One chick had a dried stem sticking from its mouth. It was long, hard and inflexible and could neither be swallowed nor regurgitated so the bird was caught up and the stem pulled out. It broke off somewhere down the gullet but within the hour the bird was fine.

The preferred method of drinking was to hover under the roof and sip up drops of condensation.

Sexing

There is no difference in the plumage of these brown-backed, grayfronted birds. The white signal feathers on the cock's wing were thought to be a sex difference until the hen rather coyly displayed smaller ones on one wing only, a month later — the only time she ever did so. Most of the time, and for most of the year, these signals remain hidden.

The birds have a well-defined white eye-ring which enhances the size of the eyes and makes them more attractive — does that sound familiar, ladies? — and the hen's ring was very slightly thicker, but this may just have been an individual difference. In spite of there being a weight differential of only half a gram between them, the cock being 35.1g and the hen 34.6g when newly acquired, the latter looked daintier in the head and feet.

The chicks' plumage was unlike that of the parents, being rufous-spotted brown like thrushes or "robins." By three weeks of age, one showed a light and the other a dark phase, the difference being in the brown color, but in spite of this both turned out to be males.

Calls

The cock sang steadily for the five month nesting season, only becoming relatively quiet for two days on either side of hatching. The song lasts 14 seconds, dropping to 9 or 10 as he began to wind down late in the season. It is quite loud, very fast, extremely complicated, high-pitched and impossible to describe. Both birds have a loudish note which they use to keep in touch when out of sight of each other. Very quiet chirps are used when they are close, including a prolonged, high, thin call. The hen is generally quiet and uses only these contact notes.

The chicks gave a tiny, single peep in the nest. This could scarcely be heard outside the box. When they had fledged, but were still being fed, they uttered a quiet, continuous churring.

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All the sounds made by the solitaires were high pitched with a tendency to be "tinny."

At two months, one chick began to warble quietly in competition with the adult male, who started to sing again before he had finished molting. It could not be ascertained if this was the light or the dark chick, as it always sang from cover. The adult sang a prolonged subsong at this time, only giving a quiet burst of his normal song a couple of times in the month (September). A month later, the other chick began to sing as well, all in the same aviary. The chicks' warbling was of long duration and very fast but was not the territorial song.

Courtship

As noted, the hen was ready first, and she slowly raised and lowered her tail, all the while calling softly to the male. Finally, he began to feed her. Sometimes he just picked food from the dish and gave it to the waiting hen. At other times, he would swallow it, fly to his mate and regurgitate the food into her beak. Compared to some other birds, he fed her very sparingly.

Between feedings, the cock would sidle up and sideswipe the hen two or three times, after which they would press close together. One day the hen was seen sitting on the ground while the cock hopped round her in a small counterclockwise circle, stopping each time around to "kiss" her under the chin. At every fourth circumambulation, mating took place. Later, they mated frequently without ceremony, even as late as when the chicks left the last nest and just when they had commenced to molt. Once the pair-bond had been established, the birds spent a lot of time rapidly quivering loosely held wings and making a barely audible, long, high screech to each other.

Nesting

Myadestes are practically unknown in aviculture and the only information gleaned was from field guides, which suggested that nests were built amongst rocks or under banks, so various sites were made available from the ground up. A cardboard box was quickly selected by the pair (three were on offer). This measured 9" (23cm) by 8" (20cm) by 7.5" (19cm) high, with the top half of the front (8" side) cut away. The floor area was 72 sq. in. (460 sq cm). It was affixed to a wall at a height of 6.5' (2m) and a short stepladder was placed underneath. A different box was used for each nesting, all about the same size and of the "half-open" type, with slightly different entrance designs. The fourth and only successful nest was directly opposite the window and was built on top of the second nest. The box was then lowered a foot (30cm) from the original height (see above) so that the inside could be seen more easily.

The nest was constructed by the hen, although the cock had carried a strand or two of grass while checking out the sites. At the early stage of building, when very little material was in place, he frequently inspected the box and a loud, rapid drumming sound was heard when he was inside. It was thought that this might be some sort of courtship signal (like the Flickers do in the garden) but later an identical sound was heard from the other aviary, when a hen Blackbird *T. merula* began to build in a similar cardboard box.

A wide variety of nesting materials was made available, but the hen only spread a layer of dried leaves (mostly hollyhock) in the box, then filled it to a depth of 3" (90mm) with old, dry pine needles. A cup in the pine needles was made at an inside corner. The nest cup was 3" (87mm) in diameter and 2" (58mm) deep. No lining of any kind was used in two of the nests, while the other two had a few coarse, stiff grass stems added to the cup. The cock only visited the nest at the beginning, then when it was completed he decorated it with one or two freshly plucked green leaves. He did not incubate the eggs or brood the young.

Eggs

The egg is whitish and completely covered with fine, light reddish markings which form a thick ring at the big end. Eggs were all laid on successive days. The first was laid on 24 April and the last on 7 July. Clutches of three, four, two and three were produced and all were fertile save for the first egg, which weighed 4.5g and measured 24 x 19mm. Incubation began with the second egg. The cock never fed the hen on the nest.

In the first nest, the sole chick took 14 days to hatch, one egg being infertile and the other dead at about five days. The hatchlings of each of the subsequent clutches all emerged on the same day, the second lot taking 15, 14, 13 and 12 days and the third 14 and 13. The last clutch took 14, 13 and 12 days to hatch.

The hen was a steady sitter and got off the clutch only when the box was banged, so I could go up the stepladder and look in at her. From the nest, she could see me when I entered the aviary. The eggs were examined twice a day.

Chicks

The nestlings were checked at least three times daily, although I was in the aviary much more frequently. They were the usual pink-tinged gray and covered with dark gray down. They had white-rimmed gapes and about a week later, the inside of the mouth turned gold. During the first three nesting attempts, there was still some tension between the pair and, in retrospect, their breeding hormone pattern had not stabilized, for their parenting routine changed considerably by the final attempt. Likely it was the first breeding for at least one of them, perhaps both.

The cock always approached the nest directly while the hen made one stop, usually on the ladder. She got so used to my presence that she soon gave this up. The sole first chick was probably abandoned late on the second evening. On the third morning, it was found and immobile and appeared to be dead, but revived on warming. It was fed and replaced in the box where it was visited by both parents then subsequently ignored. By noon it was dead. Wasting no time, the hen started a new nest that afternoon.

Of the next lot of four chicks, two died in the morning of the second day and the other two were abandoned later that afternoon. These were handfed but the smaller one died the following evening. The other chick had a distended abdomen and was started on antibiotics (Sulpha/Trimethoprim). Within six hours, the swelling had gone down and the chick was quite lively. The next day it was still fine and was given to a friend to handraise. The lady had no experience of raising softbills and fed it on a finch regimen. Remarkably, it lasted to the eighth day, but was grossly underdeveloped.

Very quickly, one day after the chicks died, the hen began a new nest and finished it the following afternoon. Five days later, she laid the first of a two egg clutch.

This time, I took over. On the first and second day, both chicks were given antibiotics, as above, and handfed. The chicks were handfed increasingly down to about one hour intervals on the seventh day. Feedings consisted mainly of scrambled egg stirred with soft margarine and moistened with a little milk. While feeding was being carried out, the cock always flew at me, usually brushing my arms or head. Once he even sat on top of the nest box throughout the operation. The hen completely disappeared during these goings-on. The nestlings grew well and the parents scarcely had to feed.

However, by late on the seventh day, the parents had quit completely and although the chicks' feathers were not out of the quills, the hen did not brood that night. A little felt blanket was put over the chicks just before dark and the cock removed this at first light, but the parents ignored their offspring and began to visit the previous nest box. It was blocked off but the adults continued to fuss around it, so it was taken down. Handfeeding continued and, oddly enough, both parents continued to clean out the nest as they did with all the broods, while refusing to feed the chicks. The cock was more consistent in this than the hen.

This pattern continued until the ninth day, when the hen was so determined to nest again that she began to pack new material in around the chicks! Both babies were removed but the smaller one died late that evening. It was quite well feathered and weighed 18g at nine days, compared to the first handfed chick which was featherless and weighed only 8g at eight days. The other expired on the following morning, preceded by the usual and only sign of distress — that of regurgitating the previous meal. It weighed in at a goodly 20g but had actually lost 3g since yesterday.

Gaining a few days with each successive nest, it would only take this pair until 1995-96 to get a few young out!

The current nest box was full of ants and was taken down. The other box — the one that had been blocked off — was reaffixed at a slightly lower elevation. This time, it was held off the wall by three large nails covered in motor grease as an anti-ant measure. This proved effective.

The parents were nothing if not determined. Commencing on the day the last chick died (the 11th day), the hen finished refurbishing the old nest by the next afternoon. Two days later she laid the first of three eggs. This was indecently quick and it was as if she had determined the brood was a failure some days before she quit on them.

It was now 19 July, and two chicks hatched early in the morning. At noon, the hen was seen in the box eating the third eggshell, which the cock came and finished. The last chick had just hatched, in 12 and a quarter days of incubation.

This time, I immediately saw there was no need for intervention. Both parents approached the new brood in a confident and completely different manner. Several major differences were noted. First, feeds were regular and at half the previous interval about every 45 minutes, compared to the previous one-and-a-half hours. And the cock fed like clockwork. Before, he had only fed once or twice, so that I had thought it was not his job to feed small nestlings. Now he waited until the hen went to the box, then immediately flew in behind her. He carried on this dual feeding for six days before going at random on his own. This is probably a genus trait, for photographs of M. townsendii show both adults feeding together. Also, the hen gathered larvae straight from the dish this time. Previously, she had always snatched them from the cock, who never actually proffered a larva, but banged it about, then sat with it as if he did not know what to do next. Sometimes he turned away, forcing the hen to reach around, and sometimes he even flew off, with the hen pursuing him all over the aviary until she had retrieved the morsel, yet there was a dishful of larvae in front of her for the taking. This was a carry-over from courtship behavior which she finally abandoned by the fourth nesting attempt.

Like the earlier chicks, this brood was raised mainly on wax moth caterpillars for the first four or five days, with the addition of a few spiders and moths. However, this lot also got

increasing numbers of grasshoppers as they became available. At one point, the whole family was using a daily minimum of 150 half-grown grasshoppers (plus at least 50 additional assorted larvae) and I could never supply enough. The grasshoppers had the hop taken out of them by snipping the back legs, then they were dumped into an old aquarium in the aviary. The birds soon learned to sit on the edge of the tank as soon as I appeared with the large plastic collecting bag and the cock continued to sit there while the contents were emptied out. Rather reluctantly, I thought, they began to use mealworms, preferring to eat these themselves and feed the other stuff to the chicks, unless there was nothing else. They would not take the beetles.

The hen brooded the chicks for only eight days, when they were still poorly feathered, suggesting Mya*destes* nests in warm areas in the wild. The wing feathers broke out of the quills on the 10th day, a day behind the last handraised chicks! Amazingly, the feathers grew quickly enough for the two larger chicks to leave the nest at 3 p.m. on the 12th day, when they could barely flop. One of the chicks weighed 25.3g - somewhere around 70% of the adult weight. The youngest chick sat at the box entrance until the next day and cheeped for food. It disappeared inside at noon, probaby for a nap, and when I went to inspect it, it came shooting out and crashed to the ground like the others.

Both parents cleaned out the nest equally well. All droppings were eaten inside the box, right up until the young fledged.

Raising went smoothly, with both parents feeding steadily, even though the hen had begun to molt. But the brood was not out of the woods yet. On the 19th day, the smallest chick, which was still being well fed, was seen on the ground. It could barely stand and was brought inside. It seemed to be mentally alert but its legs and wings were very weak. Progressive paralysis set in and by the evening it had lost the use of its limbs and had fallen over. It had symptoms of neurological damage, similar to a stroke, and died late that night. The day before, it had flown heavily into the aviary door. As this was covered with soft polypropylene netting, with a layer of plastic sheeting on top, it could scarcely have hurt the chick. But it had immediately taken off again and flown lightly into the bathroom window. It appeared to be all right, so was left in the aviary. Striking the window may not have caused the damage but, like most aviary deaths, it remains a matter of speculation.

The other two chicks were fed for a rather long time - to 33 days - in spite of the fact that both parents were now molting. This period was no doubt extended because the adults did not nest again. The juveniles could probably have fed themselves at about 24 days. They were seen to drink at 25 days but it was certain they were drinking earlier - close observation stopped at three weeks. Also on the 25th day, one chick was seen to emulate its parents and go through all the motions of bathing. Whereas the adults had just been in the water dish, the chick only caught a few drops of water when the aviary was being hosed. The chick then jumped across the water dish a few times, still preening, but did not go in. This performance was watched closely by its sibling.

The hen was noticed being mildly aggressive to a chick at 37 days, only a few days after she had stopped feeding it. By six weeks, all the birds were showing signs of intolerance of each other. The adults usually would not allow the chicks to eat at the tray with them and the chicks often chased each other off. A couple of weeks later, all ate alone.

By the end of September, the parents had molted beautifully and the adult gray was evident about the neck and shoulders of the chicks, who looked bigger than their parents by this time. Towards the end of October, when three months old, the chicks had molted all their spotted feathers and were indistinguishable from the adults.

General Observations

The solitaires always stopped feeding the chicks one hour before roosting. Before retiring, they would fly back and forth from 20 minutes to an hour, the hen always being last. Well after the cock had retired to an adjacent vine, she flitted around, only going to the nest entrance as darkness fell. There she would sit and peer around for five to 15 minutes before entering. Once it was so dark by the The solitaires' perching practice was peculiar. Most of the time, they sat in a very erect military posture across the perch like other birds. But quite often, they varied this by sitting along the perch with the tail looking uncomfortably bent on top of it and the wings hanging loosely down over either side. They held these positions for minutes on end, as though deep in thought.

They spent very little time on the ground, usually only when in pursuit of an insect. They did not hunt down escaped grasshoppers which were living quite happily in dense vegetation, although size may have been a factor here because once the grasshoppers got very large they were ignored. But the birds launched in pursuit of tiny midges flying at the far end of the aviary.

In keeping with their strange style, they would cock their heads and stare at the food dish for a minute or so before finally bolting the item of choice. They wolfed down live food and the hen was so fast that it was impossible to see if she squeezed the heads. This food-bolting is typical of flycatchers. By the fifth week, the chicks were going over the food dishes with great deliberation before gobbling.

Odder still is the manner of feeding nestlings. The parents never fed food items direct but always held them in the throat for periods of from seven to 20 minutes, with an average of 10, before offering them. They did this with berries and bread, as well as live food. One could tell when the food was for themselves or for the brood. In the first instance, it was swallowed very quickly. If for the chicks, it was swallowed then regurgitated into the throat with a characteristic violent bobbing of the head, as if the bird was choking. The motion was rather like that of a person swallowing several pills in succession. When several larvae were ingested, the throat had a slight telltale bulge, emphasized by the feathers sticking out. When the chicks were a week old, the cock was

once so crammed, and the feathers so spread, that the pink skin of his throat was visible. Both birds did this but the hen invariably held the food for longer than her mate and always took more, feeding the chicks twice as much as the cock on each trip.

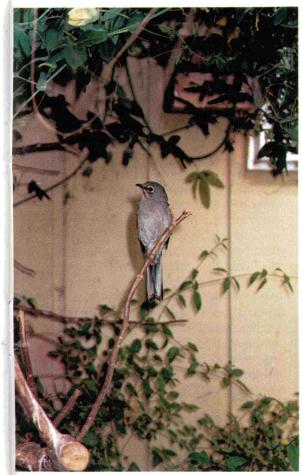
For the first three broods, the hen often took a drink after collecting food. It was thought that this was to provide the moisture to make a sort of pigeon's milk, but an examination of dead chicks showed intact larvae in the stomach, with no sign of any additional fluid. She was hardly seen at the water dish during the fourth nesting. This holding of food in the throat could not be simply for the purpose of transportation for, during the first two days, only one larva was taken to the nest at a time. And later, when four or five food items were ingested, they were still held for 10 minutes or so. As soon as the young left the nest, the cock began to feed direct. The hen then only kept food in her throat for one to three minutes, but finally gave this up by the 18th day. At least part of the reason was to predigest or soften food and supply moisture, for a wax moth caterpillar and a mealworm (one the cock regurgitated) appeared quite swollen. But why the food should be held for so long remains a mystery.

Unfortunately, the other male *M. obscurus* died before this feeding peculiarity was seen. He expired two days after eating the rhododendron petals, but this was just a coincidence. However, the examination of another species, a cock *M. unicolor,* showed no pouch or other particular arrangement for holding food, other than a capacious throat.

The chicks never begged very vigorously at any time, although they were most sprightly in the last nest. For the first week, they wavered straight up, and thereafter usually stretched forwards. If they were asleep, the parents prompted them by tapping or even banging their heads vigorously with a larva. The cock always fed from the left side, the side of the box the nest was on, and merely stood just inside the entrance. The hen always went inside the box and so always fed from the right. This convenient arrangement meant that I always knew which one was feeding. The chicks were always fed once each in turn, only the cock often turning up with food enough for just two of them. Once,



The Brown-backed Solitaire is found in fairly dense mountain forests of Mexico to Honduras. In captivity, they are best kept in a spacious, planted aviary. Solitaires are wonderful song birds and behave much like flycatchers when catching insects.



The Brown-backed Solitaires nested in a half-open cardboard box which can be seen above the bird. Nesting materials were placed within this box. A cup-shaped nest was built mainly of pine needles and placed at an inside corner.

when the chicks were very small, the cock regurgitated a mealworm to the hen on the nest, who then fed it to a chick. The hen was once seen to feed each chick in turn three times and the first in line a fourth time so she must have been holding 10 items.

As the adults ate, so they fed the chicks — like lightning. Quite often, they went in and out of the gapes so fast that the chicks did not have time to seize the item and it was withdrawn. But the bobbing was repeated until all the young got their share. The white of waxmoth caterpillars could be followed best in the dark nest, just as it was easy to see the white gape of the chicks and the white eye-ring of the adults bobbing up and down. The question remains about what the chicks were getting for the first day or two when only one larva was seen to be picked up, yet at least two, and usually all three, were apparently fed each time. Perhaps the feeding speed had something to do with this and some chicks were not actually getting anything because they were not quick enough, but that would scarcely account for 10 feeding movements. And besides, when a larva was withdrawn, it was usually offered to the same chick again, before trying the others. Yet, again, one larva held in the throat could have been softened up enough to break it into several pieces.

Some questions still remain unanswered about *Myadestes*, so if anybody has any ideas, the editor will be pleased to hear them.

Finally, as I was antproofing the box, the thought occurred that the strongly ingrained nest-cleaning habit might have arisen as a measure to avoid attracting ants. Cavity nesters hardly need to clean up inside to avoid attracting attention. Ants are far more common and widespread than conventional predators and can be deadly to helpless chicks and even adults. My aviaries have been troubled by ants in three continents, whereas I have only had bother with snakes in one!



Young Brown-backed Solitaires are fed vigorously by the parents and they grow very fast and fledge very early. This youngster is two weeks of age.