grandis

A solitary breeder, which builds its bulky nest in exposed branches, usually in the top of a tree. The nest is a medium to very large (for the size of the bird), dome-shaped structure of small woven sticks and moss with a side entrance.

metallica

A colonial nester, favours isolated trees in which pairs weave their pendant hanging nest made from neatly woven strands of grass-like fibres.

CONCLUSION

Hopefully this paper, whilst it has not conclusively reformed the taxonomic placements of the species treated, nor given them the thorough coverage that they deserve, will kindle and interest in this most interesting and sorely neglected group. The suggestions of revising the taxonomy are ventured in the hopes that another will take up the task and work on the group in the field.

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SECOND RECORDED INSTANCE OF THE BROWN ORIOLE *ORIOLUS SZALAYI* NESTING IN THE SAME TREE AS THE HELMETED FRIARBIRD *PHILEMON BUCEROIDES*

GEORGE E. CLAPP

INTRODUCTION

The author reported the Brown Oriole *Oriolus szalayi* nesting in the same rain-tree *Saman samanea* as the Helmeted Friarbird *Philemon buceroides* in Popondetta in 1982 (Clapp 1982b). Between 2 May 1982 and 5 June 1982 more than eleven hours of observations were carried out. Nesting in each case was aborted by an unknown agency, in the case of the honeyeater at the nesting stage and in the case of the oriole still apparently at the incubation stage. Twenty-eight antiphonal duets by *Philemon buceroides* during the observation period confirmed the data in Clapp (1982a) on duetting in *Philemon buceroides* and confirmed that duetting in this species is performed by a mated pair. During the period in question not a single instance of direct aggression between the two species was observed. The possibility was raised of a dominance hierarchy between *Philemon buceroides* and *Oriolus szalayi* with the former being dominant. The bearing of the data on the striking similar appearance of

O. szalayi and *P. buceroides* was discussed and the conclusion reached that the data supported the rejection of Cody's (1974) proposal that interspecific aggression has caused the convergence in appearance. The present paper documents the second instance of Brown Orioles nesting in the same tree as a pair of Helmeted Friarbirds.

CIRCUMSTANCES

On 10 April 1983 Brown Orioles and Helmeted Friarbirds were noticed both nesting in the same tree, in the high covenant housing area in Popondetta, Oro Province, Papua New Guinea. It was evident from the state of the nests that the friarbirds must have commenced building first. The tree used for nesting was an Erima, *Octomeles sumatrana.*

The nests were typical for each species, the *Oriolus* nest was a medium shallow saucer suspended from a fork let from a lateral branch and situation near the very bottom of the canopy about one third of the way towards the bole; the *Philemon* nest was a deep cup suspended from a forklet from a lateral branch and situated approximately two-thirds of the way up the canopy and halfway in towards the bole. The *Oriolus* nest had a wispy tail of vegetable material hanging from the bottom and the *Philemon* nest, although not having one to start with, developed a wispy tail later. The two nests were both on the same side of the tree and were some eight or nine metres apart vertically.

OBSERVATIONS

The bulk of the observations was carried out on 28 separate days within the period 10 April 1983 to 25 May 1983 inclusive. There was a total of 31 hours and 22 minutes observations. Observations were made on 10-12 April inclusive, 16-18 April inclusive, 21-26 April inclusive, 1st May, 3-8 May inclusive, 10 May, 12 May, 14-15 May, 18-19 May, 21-23 May inclusive and 25 May.

NESTING OF WHITE-BELLIED CUCKOO-SHRIKE *CORACINA PAPUENSIS* IN SAME TREE

On 21 April the author noticed that a pair of White-bellied Cuckoo-shrikes *Coracina papuensis* was also nesting in the same tree used by the Friarbirds and Orioles. The author was not able, however, to follow the progress of this breeding attempt (two nests were difficult enough to watch simultaneously, three would have detracted from the value of the observations) and the last note was that on 21 May the *Coracinas* were observed sitting on the nest, which was situated near the top of the canopy, on the same side of the tree as the other two nests.

THE NESTING RECORD

The initial observations of nest building started on 10 April and both the Brown Oriole and the Helmeted Friarbird were building on this day. Both and definitely finished building by the end of 16 April; both were seen sitting on 17 April. The Friarbird was

first seen definitely feeding young on 5 May, and the Oriole was first seen definitely feeding young on 12 May. In both species, both male and female fed the young. The Oriole hatched two chicks as did the Friarbird. In each case the stronger chick emerged from the nest for the first time on 22 May, the Oriole chick being the first out of the nest at 12:41 and the Friarbird chick being out from the nest for the first time only a few minutes later. Each species definitely had one chick which was out of the nest and moving around fairly strongly on 22 May. On 23 May there was no sign of the Oriole chick but the Friarbirds were seen to be feeding one chick still in the nest while one chick was out and about.

Unfortunately it was not possible to carry out extensive observations on 23, 24 and 25 but on 25 May there was no activity from either the Orioles or the Friarbirds in the nest tree and it is assumed that by that time all four chicks had fledged. Certainly on 25 May two adult Friarbirds were seen with two fledgelings in the garden next to that in which the nest tree was situated and subsequently the adult Friarbirds were seen on later dates with their two juveniles. However it is not known what became of the Oriole chicks as they were not seen subsequent to the 22 May.

For the Helmeted Friarbird there is insufficient information to give the interval between finishing the nest and the laying of the eggs. It is however reasonable to assume that for the Friarbird incubation time is about 18 days and nestling time is about 18 days. As the Brown Oriole was seen to put the last touches to its nest on the 16 April, and as it was seen definitely sitting on 17 April, there may well be less than a day's interval between finishing the nest and laying the first egg. There is insufficient information in the case of the Brown Oriole to estimate the length of either the incubation or nestling time.

THE EVENTS OF 22 MAY 1983

There is no doubt this was the most significant day in the whole period of observations and it is worth recounting the events of this day in some detail.

First observations started at 11:45. Immediately it was noticed that one of the Brown Orioles was giving a different call; it was almost a double note, a slurred 'tschew' call. The similarity of this call to the Helmeted Friarbird's foraging/contact call was remarkable. The other Oriole was giving the usual rollicking call. The author considers it significant that this 'tschew' call had not been given by the Orioles during the whole period of observations, from 10 April, until it was heard for the first time on 22 May. This call has been heard from Brown Orioles in other localities and at other times but whether or not as part of a breeding situation is not known. The Oriole making the rollicking call approached to within one metre of the Friarbird's nest with no reaction from the perched Friarbird.

Observations ceased briefly at 11:50 and recommenced at 11:53. Then one Oriole came to the nest tree with food and another was calling continuously. One Oriole (whether the one with food or not is unfortunately unclear from the notes taken) approached to within one metre of the Friarbird nest. The other Oriole also came up to the vicinity of the nest but not as close. At 12:01 a Friarbird approached and chased the Oriole away from the nest. The Oriole with the food came down to another lower perch and the other Oriole went into a nearby tree. At 12:04 the Oriole with the food went to its nest and fed a chick. After some non-significant events it was noted at 12:13 that the Friarbird nest contained a chick moving around in it. Between 12:18 and 12:19 both the Oriole and the Friarbird fed their respective chicks. An Oriole which had arrived at the nest tree with food at 12:15 did not feed its chick at the nest until 12:36. At 12:22 the Friarbird came to its nest and fed its chick. At 12:27 the Friarbird chick was fluttering up on to the rim of the nest; it fluttered its wings and then went down into the nest again. At 12:36 the Friarbird came to its nest and fed a chick. At 12:41 an Oriole was calling and one Oriole chick was out of the nest, while the other stretched its neck up in the nest. Shortly afterwards (no more than three minutes at the most), the stronger of the two Friarbird chicks was up on the branch which held the suspended nest. At 12:53 the Friarbird came to the nest and fed its chick and at 12:58 both the Oriole and the Friarbird went to their respective nests and fed their chicks. Observations finished at 12:58.

Observations started again at 15:44 when it was noticed that an Oriole was moving all around the Friarbird nest at a distance of about two metres, uttering the previously described 'tschew' call note (harshly), and interspersing it with the normal Oriole rollicking call (medium strength). The Oriole fledgeling at this stage was sitting on a limb next to the Oriole nest, whilst the other adult Oriole was in the lower canopy of the nest tree. There was no sign of the adult Friarbirds or the Friarbird fledgeling. At 15:49 an Oriole was not far from the Friarbird nest when a Friarbird called and came to feed its young. The Oriole moved down level with its own nest while the Friarbird fed its chick. Then followed some non-significant events. At 15:51 a Friarbird adult usurped the perch where an adult Oriole was sitting, thus exhibiting Friarbird dominance over the Oriole.

At 15:58 the Oriole fledgeling was not visible and the parents, also invisible, were calling in a nearby tree. Both Orioles were seen near the Oriole chick just after 16:03 and the unusual 'tschew' call was being given.

After 16:15 a Friarbird came to the nest tree and fed its fledged chick. Shortly afterwards an Oriole came to the tree with food, the Friarbird fledgeling moved near to it and there was an encounter which the author did not observe clearly but which may have been the Oriole feeding the Friarbird chick. The Oriole then flew away and finally the Friarbird chick flew also. At 16:26 and again at 16:28 when the Friarbird came to

feed its chick in the nest there was an antiphonal duet with one bird on the nest rim and one in another tree.

At 16:40 the Friarbird fledgeling was seen on the top of the raintree. The 'tschew' call was being uttered by an Oriole. The two Orioles were then seen very near to the Friarbird chick. Then one of the Orioles came and sat right next to the Friarbird chick. Only a Friarbird call in the vicinity made it move, but both Orioles still stayed nearby. At this stage it was clearly seen that it was an Oriole that was uttering the 'tschew' call - the Friarbird fledgeling was apparently silent. Shortly afterwards all the birds flew.

Between 16:47 and 17:00 the Oriole fed its chick at the nest twice and the Friarbird fed its chick at the nest once. Between 17:00 and 17:17 there was feeding of both chicks by Friarbird and Oriole, also some antiphonal duets by the Friarbirds, in this case just after feeding and leaving the nest area. At 17:16 it was noticed that there were definitely two Oriole chicks in the nest. Observations finished at 17:21 but at 17:27 there was an instance of vicious aggression by the two Friarbirds against an Accipiter spp.

POSSIBLE ANTIPHONAL DUET BY *ORIOLUS SZALAYI*

On 21 April an instance was noted of possible antiphonal duetting by the two Orioles. The possible duet consisted of a pair of calls by Bird A - a long clear upslurred and then downslurred whistled call with a shorter call at the end; this was followed instantaneously by a somewhat shorter pair of calls by Bird B - an upslurred call with an approximately equal duration downslurred call. This pattern was repeated several times perfectly. After that the calls were also given again but clashed. So perfect were the initial several instances of Bird B's calls following those of Bird A, and given the fact that on several other occasions the author heard possible duets in *Oriolus* (i.e. outside of the scope of this paper), that this is believed to be at least an incipient antiphonal duet.

ANTIPHONAL DUETTING BY *PHILEMON BUCEROIDES*

During the period of observations the author recorded 52 antiphonal duets by *Philemon*. Of these eight duets spread over four separate days, were initiated by the bird with the higher pitched tone (Clapp 1982b), whilst seven duets spread over six separate days, were started by the bird with lower pitched tone. One instance was noted of a bird changing its notes halfway through an antiphonal duet but still inter leaving them (Clapp 1982b). Several instances were noted of antiphonal duets being performed while one bird was on the nest and the other elsewhere (Clapp 1982b).

During the same period 150 bouts of solo calls were noted, but a bout here is only a term of convenience, as the field notes were never intended to indicate the exact number of solo calls, and a bout as used here could be anything from one call to many.

AGGRESSION

During the period of observations the following instances of definite aggression were recorded. Five instances of Willie Wagtails *Rhipidura leucophrys* pursuing Helmeted Friarbirds from nearby trees into the Friarbird/Oriole nest tree. One instance of two Willie Wagtails harassing a Helmeted Friarbird which was in its nest; eventually the *Philemon* left the nest and was chased by the wagtails into a nearby rain-tree (on the same day, 24 April, the author twice noted two wagtails fiercely attacking another small unidentified bird nearby). One instance on 16 April of a White-bellied Cuckoo-shrike *Coracina papuensis* buzzing an Oriole in the nest tree; it is interesting to note that a Friarbird immediately came close to inspect the situation and that the Cuckoo-shrike did not persist with buzzing. One instance on 22 April of a Helmeted Friarbird attacking a large lizard near its nest; the second Friarbird came to the vicinity but did not join the attack and the lizard retreated. One instance on 22 May of two *Philemon* chasing off an *Accipiter* spp. so viciously that they beat it to the ground momentarily and then sent it off altogether. One instance of an *Accipiter* spp. chasing a Brown Oriole which had stolen nesting material from the hawk's nest in a nearby Klinkii Pine tree; the hawk desisted because of harassment by two Willie Wagtails. Two instances of aggressive posturing by the *Philemon* towards the *Oriolus*, both on 24 April and both shortly after the *Philemon* had been chased into the nest tree by the Willie Wagtails, indicating a possible spillover of aggression. Lastly one instance on 22 May of the *Philemon* aggressively chasing off an *Oriolus* from the vicinity of its nest.

In addition there were four clear-cut instances of dominance exhibited by the *Philemon* over the *Oriolus*, expressed by the simultaneous taking over by the *Philemon* of the perch that the *Oriolus* was on, as the *Oriolus* moved out submissively. One of these took place on 23 April, two on the 24 and one on the 22 May. There was also a less clear cut instance on 21 April.

FEEDING THE YOUNG

A) *Philemon buceroides*

Between 5 May and 23 May inclusive, covering nine separate days, there were 32 definite observations of adults feeding young. Of these most were merely noted as 'food', two were definitely large praying mantis, three were definitely large unidentified insects, one was listed as an insect, and one was almost certainly a cicada.

In addition there were nine presumed feeding instances observed. On two other occasions the adults were seen to catch a large green praying mantis but is not known whether they were subsequently fed to the chicks. On one occasion an adult Friarbird hunted for eight minutes, ignoring small ripe figs near it, before it finally caught the presumed cicada and fed it to the chick.

Intervals between successive feedings varied widely and randomly ranging from one minute to 53 minutes, and in such a way that it would be quite misleading to quote any

average. Elapsed time between when the adult bird was first seen with the food and when it fed the chick was in most cases very brief and on only one occasion did it reach two minutes.

B) *Oriolus szalayi*

Between 12 May and 22 May inclusive, covering five separate days, there were 16 definite observations of adults feeding young. Of these, most were merely noted as food, three were almost certainly fruit (small globular, reddish objects held in the open break), and two were probably small grubs or caterpillars. There were also four presumed feeding instances observed.

Intervals between successive feeding varied widely, ranging from one minute to 55 minutes, and in such a random way that it would be inappropriate to quote any average.

Of great interest was the elapsed time between when the adult bird was first seen with the food item and when it actually fed the chick. On twelve occasions these elapsed times were excessive: they were 15, 8, 19, 29, 45, 2 1, 12, 21, 4, 13, and 10 minutes respectively. With the other feeding occasions there was no appreciable elapsed time. During these extraordinary intervals between arriving with food and feeding it to they young, the adult bird would continually shift from perch to perch, approach the nest, retreat, approach again, retreat, and so on. On several occasions the adult bird waited until the other oriole arrived in the vicinity again before feeding the chick. It is in fact worth noting one instance in detail.

At 07:48 on the 15 May an adult Oriole flew into the nest tree with food, apparently fruit, in its beak. At that stage the bird was on the same side of the tree as its nest. At 07:56 an Eclectus Parrot *Eclectus roratus* flew overhead and called, at which the Oriole shifted its perch over to the other side of the tree. At 08:01 a sneeze by a person going along the road also apparently startled the Oriole. At 08:15 the other adult oriole flew into the nest tree and perched below and to the right of the Oriole's nest (the nest being on the left hand side of the tree from the observer's viewpoint). At 08:32 the first Oriole with the food finally moved to the nest and at 08:32:15 it fed the chick, flying away at 08:33. There was a total elapsed time of 44 minutes during which the Oriole with the food was constantly shifting its perch, on a number of occasions moving nearer to the nest then away from it.

Another extraordinary incident worth noting in detail occurred on 22 May. At 16:15 an adult Friarbird came to the nest tree with food, fed the Friarbird chick and flew away. It should be noted here that the Friarbird chick was out of the nest. Then an Oriole came to the nest tree with food at approximately 16:16. The young Friarbird came near to the Oriole. There was a brief 'encounter' which the author did not see clearly because

it was so quick and unexpected, but the Oriole then flew away out of the tree. The encounter was not an aggressive move, the birds came together briefly. Later the young Friarbird also flew away. The 'tschew' call given by the Oriole was heard again at 16:20. After the 'encounter' the Oriole that had arrived in the nest tree with food in its beak should normally have gone to feed its young but did not do so, instead it flew away. The author is quite certain that the identification of the Friarbird chick was correct, as the Friarbird had fed it earlier. The balance of probabilities is therefore that the Oriole fed the Friarbird chick.

AMOUNT OF TIME SPENT IN THE NEST TREE

During 7% of the total observation period only an Oriole or Orioles were present in the nest tree, for 17% of the time there was only a Friarbird or Friarbirds in the nest tree, for 67% of the time individuals of both species were present and for 9% of the time neither adult Friarbirds nor adult Orioles were apparently present. The Oriole, however, did spend considerable time perched in a close neighbouring tree slightly below the level of its nest, so the stated time for the Oriole being present at the nest site may well be misleading.

DISCUSSION

The first point to be made about these observations of *P. buceroides* and *O. szalayi* in the proximity nesting situation is that they indicate a connection between the mimicry by *O. szalayi* of *P. buceroides*, not only with general feeding assembly advantages, but with anti-predator advantages for both species. They complement the feeding situation observations mentioned by Diamond (1982).

The fledging time appeared to be the significant event towards which everything was leading. Although hatching did not appear to be closely coordinated between the two species, the initial fledging of the stronger chick of each species occurred within minutes of each other on 22 May; at 12:41 for the Oriole and no more than a few minutes later for the Friarbird. This can be regarded as remarkable timing, particularly as it can be presumed there were at least several days between the hatching of the two species' eggs.

Also significant is the 'tschew' call, so similar to the foraging/contact call of the Friarbird, which the Oriole only started giving on 22 May, the day when the chicks of both species first fledged. It is possible that this mimicry is to accustom the young Friarbird to accepting the Oriole as another parent 'Friarbird' very early in its life. The normal rollicking Oriole call was interspersed with the 'tschew' call. Subsequently the Friarbird chick which it grows up to be an adult might be inclined to accept the Oriole as an 'honorary conspecific' because of the auditory and visual conditioning. Certainly the 'tschew' is the closest Brown Oriole call to any call of the Helmeted Friarbird. Another Oriole call is a long drawn out whistle that recalls the general

quality and character of a Friarbird cell. Of course, in tone and volume the Brown Orioles songs are similar to those of the Helmeted Friarbird, even if the character of the songs are different.

Two of the favoured perches of the Friarbirds were: 1) on a level with the Oriole nest but at the rear of the nesting tree and 2) slightly above the level of the Oriole nest and four or five metres to the right. Both perches were considerably below the Friarbird nest. Proximity of the Friarbird to the Oriole's nest would be advantageous to the Oriole, giving better anti-predator insurance to the latter's nest, as the former would be alert to predators. As yet there is no explanation as to why the preferred Friarbird perch is below instead of level with its own nest. One may also consider the possibility that the Friarbird, by deliberately stationing itself near the Oriole nest and away from possibility that the Friarbird, by deliberately stationing itself near the Oriole nest and away from its own nest, may be using the Oriole nest as a 'sacrifice'. If a potential predator sees the Friarbird sitting close to the Oriole nest it may not notice the Friarbird nest and in any subsequent absence by the Friarbird such a predator might turn its unwelcome attention to the nest which the Friarbird was apparently guarding.

Increased protection for the Friarbird's nest could occur when only one bird, an Oriole, is present in the nest tree, and as that bird resembles a Friarbird, then both nests are apparently protected by a bird that has a pugnacious reputation. This would be advantageous to both species.

Both species would also derive greater protection from predators because there is greater immunity by being part of a group, in this case a loosely knit 'group' (see Bertram in Kress & Davies, 1978). The mimicry of the Friarbird by the Orioles makes it seem that there are more than two Friarbirds. Before hatching it would appear that there are not two but four 'Friarbirds', and after hatching it could conceivably appear that there were eight 'Friarbirds'. So potential predators which are aware of the Friarbirds' pugnacity would tend to leave the 'Friarbirds' alone when it sees an apparent 'group' of them. Vocal mimicry would further enhance this deception. Again both species would benefit.

In this context we should note that the *O. szalayi* mimicry of *P. buceroides* in New Guinea is not perfect (Diamond, 1982). Mimicry of *P. subcorniculatus* by *O.forsteri* on Ceram in the Moluccan Islands is almost perfect, so the group appearance argument would be more applicable there. Unfortunately we do not know whether these two species practice proximity nesting on Ceram.

The observed percentage of time spent at the nest by the two species would provide a distinct advantage to the Oriole if it nests in proximity to the Friarbird. If for 17% of the time there are only Friarbirds present in the tree, then for that amount of time there

Oriole's nest would gain protection that it would not otherwise have because if the Friarbirds were not present then there would be no birds guarding the nesting tree. For the same reason there is some advantage to the Friarbirds when only Orioles are present (7% of the time) and both species gain from the 'group' anti-predator deception during the 67% of the time that both Friarbirds and Orioles are in the nesting tree.

Diamond (1982) postulated that the advantages to the Oriole, in the Oriole/Friarbird mimicry situation in Australasia are first, that the mimic (Oriole) escapes attacks from the larger species (Friarbird) that might otherwise drive it off, and second, that the mimic, by resembling the larger bird, may derive higher status in the eyes of smaller species and may succeed in scaring them off with less effort because of its appearance.

However this appears to be only part of the solution. Anti-predator protection probably does play an important role in this mimicry situation, particularly with regard to protection of eggs and young. At the same time the author believes that there is an unsolved aspect to this puzzle, and that is the relationship between the young Friarbird and the adult Orioles, also possibly the relationship between the young Orioles and both the young and adult Friarbirds. We have observed that there is a relationship but we do not yet know enough about it nor can we formulate a theory as to its meaning.

Wallace (1863, 1969 in Diamond, 1982), may have been partially right when he theorized that mimicry was an answer to predation by birds of prey, but he should have used the more general term 'predators'. It is well known that nests in tropical areas are much less successful than nests in temperate areas in part because of the high level of predation by snakes, lizards, raptors and other birds and animals.

During these observations the Helmeted Friarbirds fended off at least two potentially serious predators: one *Accipiter* spp. and one large lizard. There can be no doubt that at least some potential predators would be wary of attacking either the bird itself or the nest of a bird that resembled a Helmeted Friarbird, if once that predator had been attacked by a Friarbird.

What is the overall significance of these observations? It is probable that we are looking at an evolving situation. The Brown Oriole does not always nest in close proximity to Helmeted Friarbirds but it appears we have a special proximity nesting arrangement in which there is both visual and vocal mimicry, and from which both species may derive some advantage. There appears to be an element of timing so that both species fledge their chicks at the same time.

The extreme nervousness displayed by the Orioles in feeding their chicks at the nest, as shown in the long elapsed time between the adult first appearing with food and subsequently feeding it to the chick, cannot be explained at this point. There was

definite alternating behaviour, presumably caused by a conflict of underlying tendencies. Several times the Orioles would approach almost to the nest with the food and then retreat again. Certainly the phenomenon needs explanation. Could it be that the resemblance of the Oriole chick to the Friarbird chick induces an approach/fear conflict in the adult Oriole?

The data on antiphonal duetting by the Helmeted Friarbird reinforce data already collected (Clapp, 1982(a); Clapp 1982(b)). It is assumed that the higher, pitched and lower pitched birds are female and male respectively although there is no hard evidence to support this assertion. At any event it is clear that either male or female may initiate an antiphonal duet, as the number of instances of duets initiated by either lower or higher pitched calls were approximately equal (seven versus eight).

Last, the author agrees with Diamond (1982), that we need more data from field studies on the interactions of Friarbirds and Orioles. As well as general field studies on the *Oriolus/Philemon* complex, it would be particularly enlightening to have field data of species in places where the mimicry is almost perfect, such as on Ceram in the Moluccan Islands. Particular attention needs to be paid to nesting of the two species in circumstances where they practice proximity nesting. Crucial observations would be of the young just before and after fledging.

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BLACK TERN *CHLIDONIAS NIGER* AT MOITAKA SETTLING PONDS, CENTRAL PROVINCE - FIRST RECORD FOR THE NEW GUINEA REGION

BRIAN W. FINCH

On 18 May 1985 the author was accompanied by Tim Murphy (visiting from Brisbane), Eric Shackleton and David Cormac (visiting from Melbourne), and we were calling in at Moitaka at 16:00 hrs on the off-chance that something of interest might be there. In view of the date, nothing out of the ordinary was expected.

Immediately on getting out of the vehicle BWF checked a party of terns feeding at the in-flow pipe of one of the new ponds. Amongst the Whiskered Terns *Chlidonias hybrida*, and Gull-billed Terns *Sterna nilotica*, was bird that was immediately recognised as a black Tern *Chlidonias niger*, and BWF drew attention to it. The bird was in complete immaculate breeding plumage.

The other observers and the author were all familiar with this species in its usual range, and everyone agreed on the identification. After we had watched the bird for several minutes it flew off towards Waigani Swamp and did not reappear.

The following day (15:00 hrs), Tim Murphy and the author returned to Moitaka, this time accompanied by Paulene and Bob Kibble. The Black Tern was located amongst the other terns on the muddy spit which used to be the bank between the two larger tanks,but which has now been removed. This three-hundred metre long strip of muddy hummocks is very attractive to birds and they cannot be disturbed on foot. These ideal conditions have caused other palaearctic species to remain much later than normal: fifty Common *Sterna hirundo*, four Little Terns *Sterna albiforns*, five white-winged Black Terns *Chlidonias leucoptera*, one each of Black-tailed Godwit *Limosa limosa*, and Pectoral Sandpiper *Calidris melanotos*. The last named was particularly unusual for the time of year and the only individual member of all of the above-named that was in nuptial plumage (apart from the Black Tern).

After a short while the Black Tern flew from the spit with a party of Whiskered Terns to feed at the in-flow pipe at the place where it had first been discovered. After feeding for about fifteen minutes, the bird flew back towards and over us, and rested again on the spit.

DESCRIPTION

The head and entire underparts down to the lower belly are immaculate black; undertail coverts to vent, and a slight tracing on to the hind flanks are white. The mantle, entire