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BEHAVIOUR OF BUTTON QUAIL

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SUMMARY

At the University of Queensland three Red-chested Button-quail *Turnix pyrrhothorax*, two males and one female, were observed in an aviary for three months to study their behaviour. The behaviour of the female was quantified over a twelve hour period by scoring listed actions performed during each fifteen second interval. Peak performance times were obtained for resting, preening and walking, whereas feeding seemed to be more evenly distributed over most periods of the day. Dustbathing constituted a major part of some active intervals. The components of dustbathing in both male and female are described and quantified. In contrast to the components of dustbathing in the Bobwhite Quail *Coturnix virginatis* as described by Borchelt (1975) head rubs seemed to be combined with side rubs. Over a further forty hours of observation, descriptions were obtained of threat behaviour, fence running, maintenance activities and low frequency actions of hopping, bowing and "skipping". It is suggested that dustbathing may serve a social function in pairing.

INTRODUCTION

Button-quail have received little attention. Their range and habitat are mentioned in recent publications by Morris and Kurtz (1970, 1971, 1977) and Pedler (1975). Taxonomically these quail belong to the family Turnicidae and they contrast with quail in the family Phasianidae. There are structural and social differences. Species of the *Turnix* group are small and lack the fourth backwardly pointing toe. Also, it is believed that all button-quail are polyandrous. The female may take more than one mate in any one breeding season and is larger and more brightly coloured than the male. She is said to defend a territory in the breeding season.

Populations of the Red-chested Button-quail *Turnix pyrrhothorax* are thought to fluctuate widely from year to year. Reports on their distribution vary considerably (Slater 1970, Busby and Davies 1971). They are reported to inhabit paddocks containing native grasses and introduced thistles, and improved pastures of lucerne, phalaris, rye grass and clover (Morris and Kurtz 1970).

Because of the lack of behavioural information on this species a preliminary study was carried out on captive birds at the University of Queensland. An attempt was made to describe their actions and activities and a list of these was tested for its suitability as an ethogram of this species. One of the few behavioural reports on quail looked at dustbathing and its components (Borchelt, 1975) in the Bobwhite Quail *Coturnix virginatis*. The performance and components of dustbathing in *T. pyrrhothorax* were compared with those described in Bobwhite quail.

METHODS

Two male birds were placed in the aviary on 5 March 1977. One of these was replaced by a female on 9 April 1977. All these birds were aviary bred and aged between one to two years.

Observations were made through a slot which opened into a darkened corridor minimizing the visibility of the observer. The birds did not appear to be disturbed during the observations and resumed their activities within a few minutes of the slot being opened.

After fourteen hours of observation, over several different times of the day, actions and activities were named and listed. These were then quantified noting their performance once in every fifteen seconds when they occurred. This quantification was documented for the female only over a twelve hour period in two consecutive days - from 0600 to 1200 hours on 18 April 1977 and 1200 to 1800 hours on 19 April 1977. The weather on both days was similar, with mild temperatures (max 21°C) sunny with some cloud and overcast in the afternoon. The data collected were arranged into active and inactive intervals. Sitting was termed inactive and any interruptions to sitting were assigned to an active interval if the activity was scored for more than two consecutive minutes. Sitting interrupting an active interval was similarly treated.

The components of dustbathing of both male and female as noted in the first week of observations were named and the frequency of these estimated for seven dustbathing events, totalling 30 minutes of dustbathing. The components were verbalized and recorded on tape and these were then replayed and the frequency of their occurrence noted. A dustbathing event was said to have commenced when any of the major components had been performed for fifteen seconds or longer.

Over a further forty hours of observations until 23 May 1977, descriptions in note form were taken of their activities and actions. A summary of the observation times is shown in Table 1.

Food and water were given *ad lib* - mixed grain was scattered over the floor of the cage and put in a dish at ground level. Termites were fed to the birds on days 10, 28, and 38.

RESULTS

Quantified behaviour

The actions and activities listed along with the frequency with which they were scored is shown in Table 2. Major activities were sitting, walking, standing, feeding and preening with dustbathing

featuring prominently in some intervals. In general the pattern of behaviour in the twelve hours of recording was several intervals of activity and inactivity each hour. The average resting interval was 19 minutes and the average active interval was 23 minutes (Fig. 1). There was not a clear division between the two types of interval. Activities of preening, walking, feeding and dustbathing along with some minor actions were found in resting intervals, and sitting interrupted active intervals.

Table 1. Time of observations and the corresponding type of recording over the three month period

Day No.	Date	Hours	Type of Recording
	5 March	1435 - 1645	Note taking
	10 March	0600 - 1800	Note taking
Day 1	11 April	1400 - 1800	"
2	12 April	1600 - 1800	"
4	14 April	0700 - 1230	"
6	16 April	1400 - 1800	"
8	18 April	0600 - 1230	Ethogram
9	19 April	1230 - 1800	Ethogram
12	22 April	1400 - 1800	Note taking
13	23 April	0500 - 0800	"
14	24 April	1200 - 1800	Tape recording
23	3 May	0600 - 0800	Tape recording
24	4 May	1720 - 1200	Note taking
33	13 May	0700 - 0830	"
40	20 May	1400 - 1800	"
41	21 May	0545 - 0800	"
43	23 May	0900 - 1145	"

Peak intervals for resting occurred between 1030 and 1400 hours. Three of the four intervals of this period were twice as long as the average resting interval. Sixty percent of this resting was in contact with the male. The frequency of preening, walking, dustbathing, and feeding is shown in Figure 2. Three activity peaks were of note and these coincide with peaks in walking and preening activities. Early morning was a period of heightened preening. The other two peaks were intervals in which walking reached peak performance - mid morning and late afternoon. Feeding, however, was more evenly spread throughout the day and was a major component of most active intervals. Dustbathing did not always coincide with intervals in which preening was a prominent activity. It was not confined to a particular time of the day but occurred in several intervals spread over the day. Its highest frequency of performance, was late afternoon immediately before roosting. The named components of dustbathing occurred with the frequency shown in Table 3.

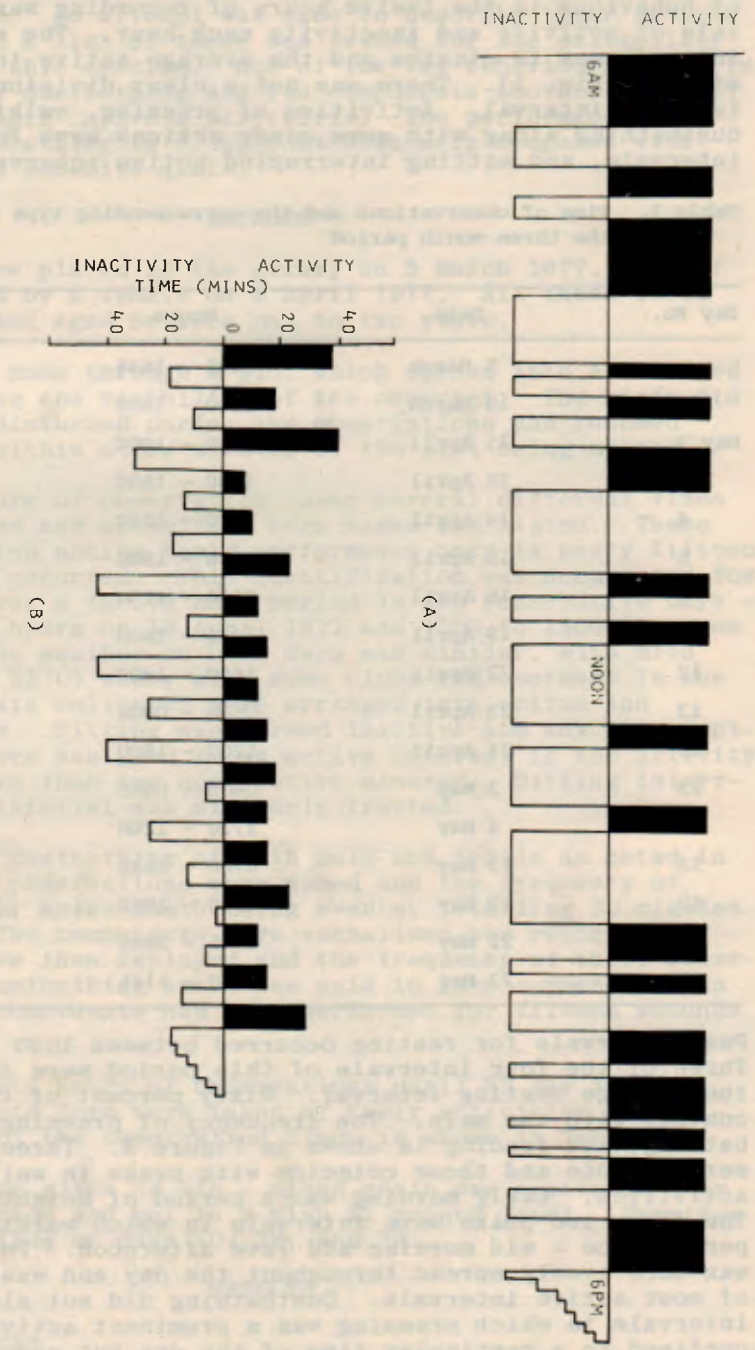


Figure 1. General activity pattern recorded over a 12 hour period
(A) distribution of intervals over the period
(B) frequency of each interval.

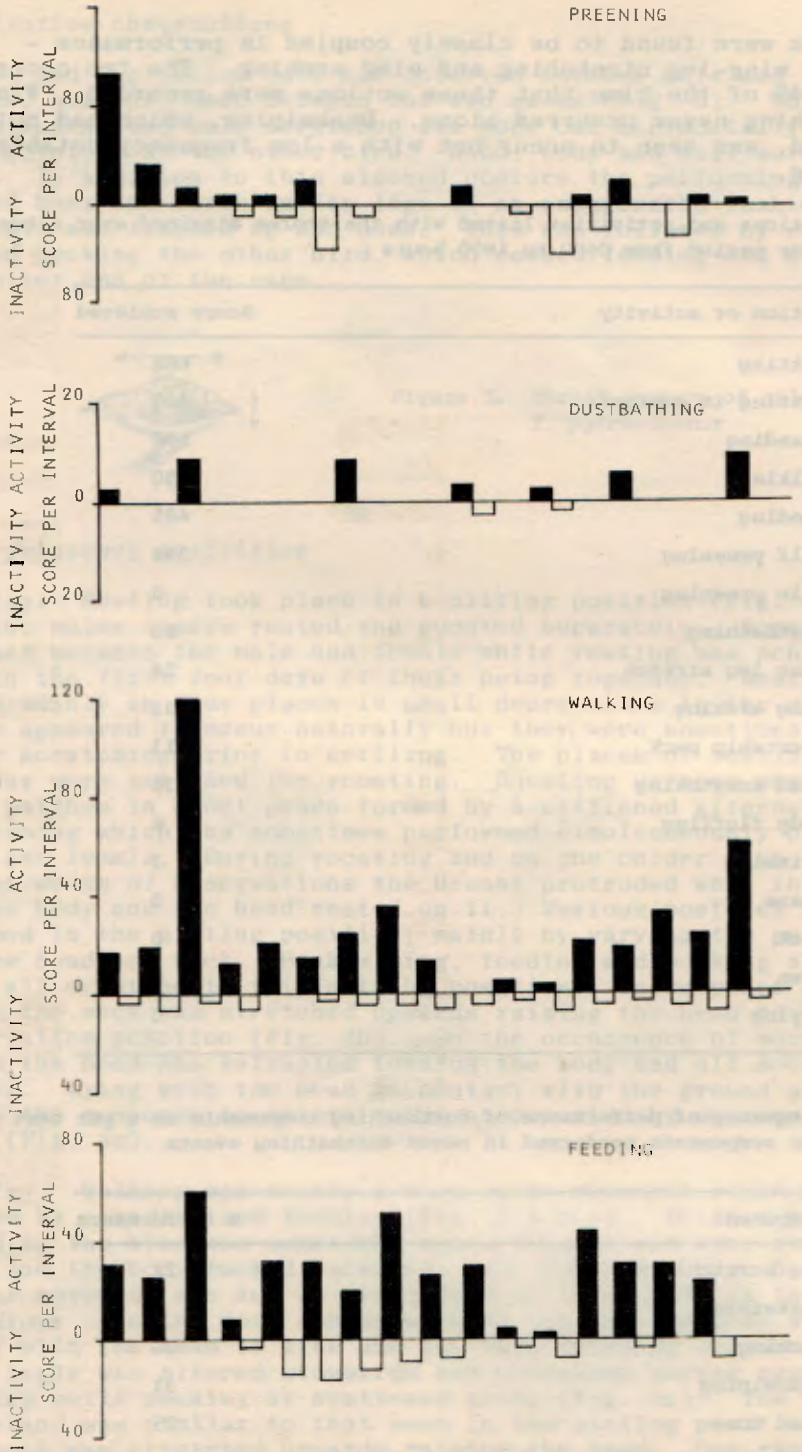


Figure 2. Frequency of particular activities over the 12 hour period.

Two actions were found to be closely coupled in performance - these were wing-leg stretching and wing arching. The two occurred together 74% of the time that these actions were recorded. Wing-leg stretching never occurred alone. Beakwiping, which had not been listed, was seen to occur but with a low frequency notably in dustbathing.

Table 2. Actions and activities listed with the scores attained over a twelve hour period from 0600 to 1800 hours

Action or activity	Score achieved
Sitting	668
Sitting in contact	400
Standing	506
Walking	450
Feeding	485
Self preening	394
Allo preening	0
Dustbathing	40
Wing leg stretch	28
Wing arching	32
Courtship peck	13
Head scratching	36
Body fluffing	6
Drinking	3
Chase	0
Peck	0
Yawn	0
Flying	0

Table 3. Frequency of performance of dustbathing components as a per cent of the components performed in seven dustbathing events

Component	% Performance
Leg scratching	22
Beakwiping	2
Pecking	20
Headwiping	31
Dust toss	25
Head scratch	0.1

Qualitative observations

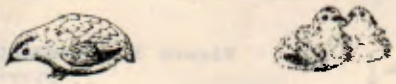
Threat and aggression were not observed between male and female. It was, however, seen between the two males (Fig. 3). While it was standing one male stretched its body out horizontally with the beak pointing at the other bird. Head, body and tail were in line. In addition to this sleeked posture the performing male rocked back and forth on its legs in an exaggerated fashion and the tail was flicked up and down. This was followed by running at and pecking the other bird, which ceased feeding and rushed to the other end of the cage.

Figure 3. Threat posture of male *T. pyrrhothorax*

High frequency activities

Sitting: Resting took place in a sitting position (Fig. 4a). The two males always rested and roosted separately. However, body contact between the male and female while resting was achieved within the first four days of their being together. Resting took place mainly in four places in small depressions in the ground. These appeared to occur naturally but they were sometimes enlarged by scratching prior to settling. The places of resting during the day were not used for roosting. Roosting scrapes were circular patches in short grass formed by a stiffened alternate leg scratching which was sometimes performed simultaneously by the male and female. During roosting and on the colder days in the latter weeks of observations the breast protruded well in front of the body and the head rested on it. Various postures were assumed in the sitting position, mainly by varying the positions of the head and neck. Beak wiping, feeding and pecking at the soil all occurred in this sitting position. In response to mild noise the neck was stretched upwards raising the head to an observation position (Fig. 4b). On the occurrence of more severe noise the head was retracted towards the body and all movements frozen. Lying with the head in contact with the ground appeared to be the response to severe noise accompanied by movement overhead (Fig. 4c).

Walking: Walking was mostly a slow jerky movement often interrupted by standing and feeding (Fig. 5 a,b,c). While a bird was standing the head was sometimes moved towards and away from the body and the body rocked backwards and forwards (Fig. 5b). This latter movement was not as pronounced as those seen in threat behaviour. In the most common walking posture the body was horizontal with the head in line and the tail pointing downwards. The body angle was altered sidewards and downwards during pauses in walking while pecking at scattered grain (Fig. 5a). The observation stand was similar to that seen in the sitting position in that the neck was stretched upwards raising the head. One response to noise by a bird while walking or standing was to crouch low with the head turned towards the direction of the sound.



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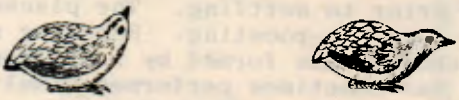

B

C

Figure 4. Sitting postures of the Button quail
(A) (i-iv) Daytime resting postures (v) Roosting posture
(B) Alarm crouch
(C) Severe alarm.

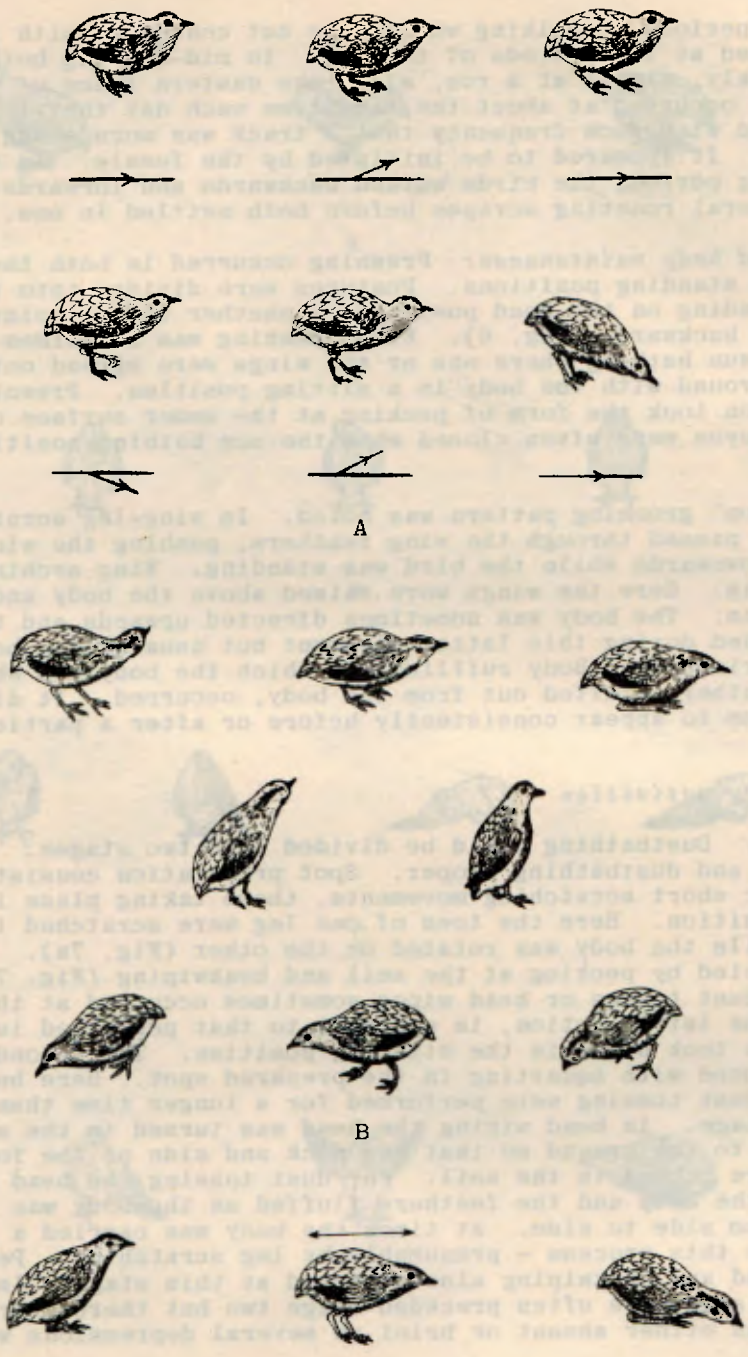

Figure 5. Walking and standing postures of the Button quail
(A) Feed walking
(B) Standing and feeding
(C) Standing postures.

Heightened periods of walking which were not concerned with feeding were observed at two periods of the day. In mid-morning both birds walked quickly, almost at a run, along the eastern fence of the aviary. It occurred at about the same time each day that it was observed and with such frequency that a track was worn along the fence line. It appeared to be initiated by the female. In the late evening periods the birds walked backwards and forwards between several roosting scrapes before both settled in one.

Preening and body maintenance: Preening occurred in both the sitting and standing positions. Postures were divided into two groups depending on the head positions - whether it was pointed forwards or backwards (Fig. 6). Wing preening was sometimes combined with sun bathing where one or two wings were spread out along the ground with the body in a sitting position. Preening in this position took the form of pecking at the under surface of the wing. The eyes were often closed when the sun bathing position was held.

A "two action" grooming pattern was noted. In wing-leg scratching one leg was passed through the wing feathers, pushing the wing outwards and downwards while the bird was standing. Wing arching followed this. Here the wings were raised above the body and lowered again. The body was sometimes directed upwards and the legs stretched during this latter movement but usually the body remained horizontal. Body ruffling, in which the body was shaken with the feathers fluffed out from the body, occurred. It did not, however, seem to appear consistently before or after a particular activity.

Low frequency activities

Dustbathing: Dustbathing could be divided into two stages: spot preparation and dustbathing proper. Spot preparation consisted of prolonged or short scratching movements, these taking place in a standing position. Here the toes of one leg were scratched through the soil while the body was rotated on the other (Fig. 7a). This was accompanied by pecking at the soil and beakwiping (Fig. 7b). One or two dust tosses or head wipes sometimes occurred at this stage but the latter action, in contrast to that performed in the second stage took place in the standing position. The second stage commenced with squatting in the prepared spot. Here head wiping and dust tossing were performed for a longer time than in the first stage. In head wiping the head was turned to the side and lowered to the ground so that the neck and side of the forehead and body were rubbed in the soil. For dust tossing the head was held above the body and the feathers fluffed as the body was shuffled from side to side. At times the body was carried a little forewards by this process - presumably by leg scratching. Pecking at the ground and beakwiping also occurred at this stage. In the first week, stage one often preceded stage two but thereafter stage one was either absent or brief as several depressions were reused.

Pairing: The activities of the two males did not become synchronized. Synchronization of the activities of the male and female, on the other hand, occurred on the fourth day. Dustbathing appeared to be the first activity to become synchronized. On day four the birds were dustbathing in contact, and they also rested briefly in

A

B

C

D

Figure 6. Preening and body maintenance behaviours
(A) Head reversed preening posture
(B) Head forwards preening posture
(C) Sun bathing with wing preening
(D) Wing arching and wing leg stretching.

contact. The male's approach to the female was hesitant at this stage. It was accompanied by courtship pecking (Fig. 8). By day seven the birds were sitting together for a longer period and they roosted in the same scrape. Synchronization of their activities appeared to be completed at this stage. Very little allo preening was observed. When it did occur it was little more than a brief nibble at the partner's neck. It appeared that dustbathing decreased in frequency once resting in contact had been achieved and this was most notable in their activities just prior to roosting.

Figure 7. Low frequency activity - dustbathing
(A) (i) Peck at soil (ii) Head wipe (iii) Body fluff
(B) Circling scratch.

Figure 8. Courtship pecking.

Hopping, skipping and bowing: Some actions were performed on a very few occasions. Hopping was seen to occur on three occasions; twice it was performed by the male and once by the female. Only once did this appear to be in response to the partner's actions. Prior to one hopping performance the female vigorously flapped her wings raising her body about 5-10 cm from the ground. The body assumed an almost vertical angle with the legs extended and tilted to the side so that on landing her position was changed to the side and forwards (Fig. 9a). In a series of these movements it seemed that she transversed a figure of eight pattern which involved a complete change of direction. This latter behaviour was termed skipping (Fig. 9b). Immediately following these actions the male ceased to feed and hopped three or four times across the cage. At the beginning of the next resting interval the male's approach to the female was hesitant. He walked towards and away from the female several times but gradually made ground to within a few centimetres from her. Before he slipped into contact with her he raised and lowered his head twice. These head actions were copied by the female from a sitting position (Fig. 10). This mutual bowing was not observed at any other time. The two then settled to rest.

Figure 9. A low frequency behaviour
(A) Hopping
(B) Skipping of female from standing position,

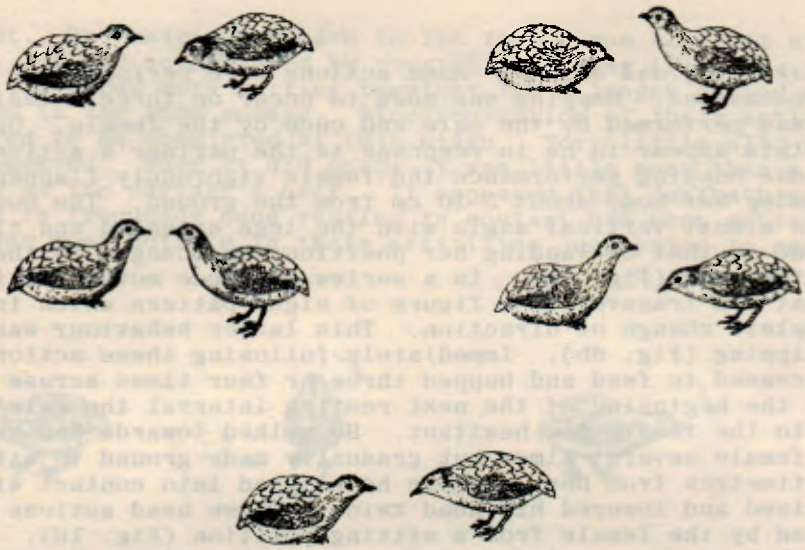

Figure 10. Illustrates the sequence of behaviours called mutual bowing.

DISCUSSION

Actions which should be added to the ethogram for this species include beakwiping, hopping, skipping and bowing. Some actions were not recorded on the day of observation but did occur at other times and thus should be included. These were pecking, chasing and yawning.

The context of the meaning of the performance of hopping, skipping and bowing is unclear. Since they were observed infrequently the limit of their performance could not be defined. The occurrence of all three in a short space of time indicates that the three actions may be related. However, hopping was seen to occur alone with no response from the non-performing partner. Similar but less pronounced fluttering and hopping were seen between a pair of hybrid European quails on the approach of an observer. Hopping here by the female followed wing fluttering by the male. It has been suggested that this is a startle response (Hansen pers. comm.) but the incidents of mutual bowing and the hesitant approach of the male in the following resting period suggests that the relationship between the male and female had been altered. This may be more indicitive of courtship behaviour.

Fence running is probably an activity induced by conditions of captivity. Here it appeared to be time specific - limited to early mid-morning. It is an activity common in captive quails having been seen also in king quail (*C. coturnix chinensis*) and Japanese quail (*C. coturnix japonica*) under aviary conditions. Under which

specific conditions it occurs, however, is not known. It may be an indication that the birds wander extensively in their daily activities or are seasonally migratory. Slater (1970) states that the female defends a territory in the breeding season in *T. pyrrhothorax*. Defence or patrolling of a territorial boundary may be part of the daily activities of a paired female. This would be restricted in captivity. Also many quail appear to be nomadic in habit. Low recovery rates of banded stubble quail (*C. pectoralis*) have been reported (Frith and Waterman, 1977).

In dustbathing the most constant features were head rubs and dust tosses. Borchelt (1975) reported that for bobwhite quail (*C. virginatis*) sidewiping was a separate movement from head rubbing. In *T. pyrrhothorax* side wiping appeared to occur in conjunction with head rubbing. He also reported that body ruffling was a constant component of dustbathing being performed at the end of an event. This did not appear to be so in *T. pyrrhothorax*. Borchelt suggests that dustbathing is concerned with the lipid balance of the feathers. Thus he feels that a bird exhibiting a high frequency of the constant components, (dust-toss, head rubs and side wipes), would be responding to a relatively large amount of lipid in the plumage. The apparent decrease in the frequency of dustbathing in the first weeks of observation may be in response to a temperature effect affecting the lipid content of the feathers. However, the fact that dustbathing in contact between male and female seemed to reach peak performance as their activities became synchronized and then decreased particularly prior to roosting suggests that it may also serve a social function in the pairing procedure. This aspect of dustbathing, then, may deserve further attention.

ACKNOWLEDGEMENTS

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SIGHTINGS OF MIGRATORY TRILLERS AND CUCKOO-SHRIKES IN VICTORIA

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On May 21, 1980, a male Varied Triller *Lalage leucomela* was sighted at Broken Bucket Tank in northwest Victoria (35° 58' S, 141° 24' E). The bird was found in a mallee heath community dominated by Yellow Mallee *Eucalyptus incrassata* and Desert Banksia *Banksia ornata*, with an understorey comprised of low shrubs belonging to several epacrid and myrtaceous genera. It remained stationary on a lower branch of *E. incrassata* for approximately ten minutes and was distinguished from the White-Winged Triller *Lalage sueurii* on the basis of its white eyebrows and more robust shape.

On August 14, 1980, I observed an immature Barred Cuckoo-Shrike *Coracina lineata* near the mouth of the Barwon River (38° 17' S, 144° 29' E). It was found in a salt marsh community dominated by Sea Rush *Juncus martimus* and Shrubby Glasswort *Arthrocnemum arbusculum*, with occasional White Mangroves *Avicennia marina*. Positive identification was obtained on the basis of its barred sides (the barring did not extend across its abdomen) and its plaintive whistling call.

Keast (1958) listed *L. leucomela* as a species which is sedentary throughout its range. He gave the Bellingen River in New South Wales as the southern limit to the range of the species although an earlier record had been made of a group of individuals found as far south as the mouth of the Manning River (31° 54' S, 152° 39' E) during December (McGill, 1954). The recent observation of *L. leucomela* in northwest Victoria provides an indication that individuals of this species may be found both further south and west during the non-breeding season.

C. lineata has been described as 'nomadic and somewhat migratory' over most of its Australian range (Keast, 1958). This author gave Dorrigo, New South Wales (30° 20' S, 152° 43' E) as the southern limit of its range and the recent sighting in coastal Victoria represents a significant range extension for the species.

Of further interest is the fact that both species were observed in plant communities which are quite dissimilar to those in which they are found in northern Australia.

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CECIDOPHAGY IN BIRDS

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The Australian region contains a large and varied fauna of gall forming coccids (scale insects). Many of these galls (cecidia) are probably too small to offer a significant food source for birds; however a number of species are quite large. There have been few records of birds feeding on galls or their scale insects. Cannon (1977) records parrots *Platycercus eximius* and *P. adscitius* eating unidentified galls on *Eucalyptus* trees. Fuller (1899) records birds in Western Australia opening the galls of *Apiomorpha helmsii* to eat the enclosed female coccid.

I have several records from S.E. Queensland of birds, probably rainbow lorikeets *Trichoglossus haematodus* feeding on female *Cylindrococcus spiniferus*; a coccid which forms distinctive galls on *Casuarina* trees, mainly *C. littoralis*. The galls are not eaten but are bisected longitudinally with a single cut, then prised apart so that the coccid can be removed. Usually only isolated examples are found but on one occasion 40 galls in an area of approximately one square metre were found opened.

These insects are relatively large, quite abundant on some trees, and relatively vulnerable because of the conspicuous fleshy gall. However despite extensive collecting the overall incidence of bird predation is low. A possible explanation for this may be related to the high incidence of parasitism by chalcid wasps. Samples frequently had more than 90% of the galls empty owing to parasitism. Krebs *et al* (1974) have shown for chickadees foraging for mealworms, that the giving-up time is inversely related to the average capture rate for the environment. If the cost of opening galls (in terms of time and energy) is small relative to the amount of energy gained from eating the galls, the search image is probably reinforced and one would expect the birds to continue feeding on galls. However, if the rate of food capture is low, as would normally be the case for *C. spiniferus*, one would expect isolated trial openings only of the galls.

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A NOTE ON MAGPIE BACK COLOURS

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INTRODUCTION

The Australian magpie (*Gymnorhina tibicen*) consists of three colour forms, the white-backed form, the black-backed form and the western form. The black-backed form inhabits most of northern Australia while the white-backed form is restricted to south-eastern and central Australia (Macdonald, 1973). Recently the white-backed form has been reported in some highland areas of eastern Australia (Walters, 1979; Murray, pers. comm.). We report additional sightings of white-backed birds in Queensland and Northern Territory.

OBSERVATIONS

1. 17 April, 1979 Mt. Gravatt Cemetry, Brisbane (27° 33' S, 153° 05' E)
A group of magpies was trapped. The male was type-4 on the scale of Burton and Martin (1976) (i.e. had a wide black saddle across the back) and the female was type-3 on the scale. The two juveniles were type-3 and type-0 (i.e. pure white-backed form) respectively.

2. 30 June, 1979 Brunette Downs, N.T. (18° 39' S, 135° 57' E)
A pair of magpies was observed for 10-15 minutes. The female was type-3 on the scale and the male had only a few black feathers on the left-hand side of an otherwise white back (i.e. type-1).

3. 6 July, 1979 Borroloola, N.T. (16° 04' S, 136° 18' E)
We observed a pair of magpies for 5-10 minutes. Both had a clear area of white showing below the black-back saddle, suggesting they were type-3 on Burton and Martin's (1976) scale. Unfortunately, owing to their extreme shyness, we could neither photograph nor trap either of the birds.

DISCUSSION

These observations suggest to us that both the white-backed form and intermediates between white-backed and black-backed have a wider distribution than was previously thought. They are found as far north as the Gulf of Carpentaria (Borroloola) and are not restricted to highland areas along the north-east coast (i.e. Brisbane).

Rather than white-backed and black-backed forms being representatives of previously isolated populations (Burton and Martin, 1976), we think that the two forms are simply morphs, being coded for by a small number of genes. Observations by N. Murray (pers. comm.) in central Australia suggest that the two forms (and all intermediate forms) do interbreed there and that possibly the genes for black-backed birds are dominant to those for white-backed birds. As with the Mt. Gravatt group reported here,

Murray observed black-backed adults with white-backed offspring a number of times, but never white-backed adults with black-backed offspring. Of course, one can never be certain that the young observed are the offspring of the territorial adults because if one adult leaves or dies, its place is quickly taken by another (pers. observation, Carrick, 1963). However, the same two adults from the Mt. Gravatt group mentioned above, had been trapped a year earlier on the same territory, suggesting they were almost certainly the parents of the two young birds.

If genes for black-backed birds are dominant to those for white-backed birds then the skewed nature of the "hybrid zone" in southern Australia (Burton and Martin, 1976) would be predicted. White-backed and near white-backed forms would only be produced when considerably more than half the genes coded for white-backs. Therefore fewer of them would be expected in the area of the "stepped cline".

If back colour did represent anything more than a few gene changes i.e. if the two back colours were remnants of two separate populations in the past, other differences between white-backed and black-backed birds would be expected. However, no differences - morphological, biochemical or behavioural - could be found between white-backed and black-backed forms (Hughes, 1980).

It seems likely that some difference in selection pressures between northern and southern Australia favours white-backed birds in southern and central Australia and black-backed birds in northern Australia. If the black genes are dominant to the white genes, then birds'carrying' white genes need not be selected against in northern areas. Only when individuals with mostly white genes are produced (from mating of two 'carriers') will selection act against them. Therefore, it is likely that the genes for white backs are maintained in low frequencies in black-backed populations and occasionally a white-backed individual is produced. This would explain the occasional sightings of white-backed or near white-backed birds in otherwise black-backed areas (e.g. this report, Walters, 1979).

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GREY WAGTAIL IN NORTH QUEENSLAND

SUZANNE M. CAMERON

On 21st January 1980 at Kauri Creek, 35 km N.E. of Atherton, I saw a bird which was subsequently identified as a Grey Wagtail *Motacilla cinerea* in eclipse plumage. I saw it briefly only on that occasion and described it thus: "back, nape, head grey; eye-brow pale, distinct; tail long, black; wings black with white stripes; underparts pale, bright yellow under tail. Bobs tail constantly. Pipit-like". It closely resembled the illustration of the Grey Wagtail in Slater (1974).

Bruce Cameron and I spent the following weekend (25-27th January) stalking the bird up and down the creek. The bird was fairly easy to watch although when disturbed it would fly away, maintaining a distance of approximately 30 m from the observer. If pushed upstream or downstream too far or too rapidly it would fly back over the observer. It was often possible to watch the bird for 30 minutes at a time before it moved out of sight. Late on Saturday afternoon, after following one bird along about 500 m of the creek, two birds were seen together, and at that stage it was decided to leave them alone in case they deserted the area. There were a number of people along the creek on Sunday and the birds were not found. We saw one bird at length again on the Monday and by then were fully convinced of its identification. The second bird has not been seen again.

On Wednesday 30th January the following people saw one bird over a period of several hours: Hans and Judy Beste, Chris Corbin, Anita Smyth and Douglas Robinson. HB is familiar with the Grey Wagtail in Europe and had no hesitation in identifying it as such. CC is responsible for most of the detail in the following description.

Throat pale buff or off white with a distinct white line from the chin to the edge of the wing. Breast and abdomen pale yellow. A mottled grey band extended from the grey flanks across the lower breast and upper abdomen. Undertail coverts bright yellow. These feathers appeared very fluffy and extended over the sides of the tail beyond the wing tips. Uppertail coverts olive green, forming a dark patch between the bright yellow undertail coverts. Tail black; the two outer tail feathers white and shorter than the others. Tail long, roughly equal to the body length. Rump, back and nape grey; crown darker grey with a hint of olive on the fore-head. Sides of face paler and sharply demarcated from the throat by a fine white line. Pale buff supercilium extending from base of upper mandible to behind the eye (this was incomplete on the left side). Eye dark. Bill long and slender and appeared black. Wings blackish brown with white edge to some primaries and a narrow white wingbar across the tips of the wing coverts or base of the secondaries. The number of stripes appearing in the wings seemed to depend on how the wings were folded, but was usually two. Legs dark; tibial feathers extended to the ankle. Flight undulating with the long tail feathers held depressed. Call a metallic short sharp "Tzip", slightly updrawn and usually emitted when taking off. A double note was heard once.

The second bird differed from the above description in having more white in the wing coverts and a less distinct grey band on the breast.

In general the bird resembled the Richard's Pipit, but with the tail and body held more or less horizontal when stationary. While foraging the body and tail were constantly bobbed downwards with the head appearing to remain still.

The bird mostly fed along the water's edge in coarse gravelly sand, from rocks, or when wading in shallow water, and was seen to jump in the air to catch a marchfly on one occasion and a dragonfly another time. It was observed preening many times, often on the ground but also on bare branches, the latter occurring mainly when the bird was disturbed.

The bird has been seen at regular intervals since the visits mentioned above and was last seen on 13th February 1980.

Kauri Creek is a permanent creek with a sandy base and areas of granite boulders, flowing through rainforest into the northern side of Tinaroo Dam, on the Atherton Tableland. At the time of the first sighting the water was generally less than 20 cm deep, exposing many sand banks.

The bird was found between the mouth of the creek and about 1 km upstream. This habitat is similar to that which the Grey Wagtail occupies in New Guinea (J. McKean pers. comm.) and Hans Beste gives the literal translation of the German name for *Motacilla cinerea* as "mountain stream stilt". As the habitat appears more suitable for the species than that of the first record for Australia (Gill, 1970) the species may prove to be a regular visitor.

Copies of photographs have been lodged with CSIRO, Australian National Wildlife Collection, ACT.

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THE BLACK COLLARED FRUIT PIGEON *DUCULA MULLERII* AT BOIGU ISLAND QUEENSLAND

ROBERT DRAFFAN

The flat, swampy, mangrove-dominated island of Boigu (09° 17' S, 142° 13' E) is Australia's northernmost inhabited island. It lies four nautical miles off the Papuan coast at the mouth of the Mai Kussa river.

On 7 and 8 January 1980 I had a number of sightings of a pigeon with which I was not familiar. I had previously visited Boigu five times since June 1977, but none of these had been during the wet season. This occurs approximately between December and April.

My first distant sighting was of a dark coloured pigeon with pink tinges and a white mark under the tail. Subsequent and closer sightings enabled the following picture to be built up.

Underparts predominantly pink.
Tail, black with a white bar.
Head viewed from below, pale (white) divided by a clearly visible black bar.
Mantle, pink.
Back and wings, grey.

On each occasion the bird was seen flying alone in a fast and direct manner, and seemed to come in from the Papuan mainland at dawn and was seen returning in the evening. No call was heard and this is apparently still undescribed (Goodwin 1970).

The recorded range of this pigeon is New Guinea, the Aru Islands near sea level occurring in the denser tree growth bordering mangrove swamps rivers and lakes (Rand and Gilliard 1967).

My thanks go to Lt. Col. H.L. Bell for his comments on my field notes and also to Mr. Charlie Gibuma and the people of Boigu for their continuing and kind hospitality.

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CACHING OF FOOD BY GREY BUTCHERBIRD

I.N. WALTERS

Recent reports of food caching by Australian Corvids (Chapman 1978; Leonard 1978; Rowley 1978; Lewis 1978; Walters 1979) point up the question of the commonness of this phenomenon in other families of Australian birds. Reynolds (1969) described caching by the Pied Currawong *Strepera graculina*. In this note I report another example of food caching in the Family Cracticidae: meat storage by the Grey Butcherbird *Cracticus torquatus*.

In a Brisbane suburban garden on 4 May 1980 small pieces of minced meat (ca 1 cm^3) were placed on a feeding tray for a Grey Butcherbird seen earlier taking a small skink from the garden. This bird in company with at least two other Grey Butcherbirds began to take food from the tray as they or other members of this species had done on many previous occasions. One individual took one piece and flew to a nearby household television antenna and placed the piece in a join of two segments of the antenna. It then returned to the tray, selected another piece of meat and flew to a pine tree (ca 10 m above ground), where it placed this piece in the foliage at the end of a branch. It packed this piece in by pounding with its beak. Another piece was later removed from the tray by one individual (the same one ?) and located in a power line insulator fixed near a neighbouring house. All three locations were <50 m from the tray, and each approximately 20 m from the other two.

Grey Butcherbirds are considered residents of the vicinity of the feeding tray. They are observed on virtually every day of the year in this area and are known to roost in the clump of trees containing the abovementioned pine. Australian Magpies *Gymnorhina t. tibicen*, Pied Currawongs *Strepera graculina*, Laughing Kookaburras *Dacelo novaeguineae*, Australian Magpie-larks *Grallina cyanoleuca* and Black-faced Cuckoo-shrikes *Coracina novaehollandiae* have all been observed taking meat from this tray.

I suggest the explanation offered in the literature cited above is also viable here; that serendipitous food gluts offer advantages to relatively sedentary species/individuals able to optimize diets in the face of potential competition by hiding food not immediately able to be consumed. It seems possible that further investigation will show this habit to be widespread in Australian birds.

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REQUEST FOR INFORMATION

I am interested in receiving reports of birds utilising galls. Please send details to:

Dr. R. Newby,
Department of Biology,
Capricornia Institute of Advanced Education,
Rockhampton. Qld. 4700.

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ERRATA

The second author's name is spelt Reed and not Read as given on page 73 and in the Contents of Volume 10 Issue 3 and 4 September and December 1979.

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