

Red-chested and Little Button-quail in the Mudgee District of New South Wales

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The status of the Red-chested Button-quail *Turnix pyrrhotorax* and Little Button-quail *T. velox* at Cooyal in the Mudgee District of New South Wales is given. The Red-chested Button-quail is an uncommon breeding resident of pasture land and crops whose numbers increase dramatically in years of favourable conditions. The Little Button-quail is an uncommon but regular summer breeding visitor whose population becomes resident when conditions are favourable. This is in contrast to previous published material relating to their status. Seventy-two Red-chested Button-quail and 52 Little Button-quail were banded* between 1969 and 1974 with no recoveries beyond 75 days, most much less, and no recoveries away from the banding site. Measurements and mass of adult birds are provided. Minor plumage differences exist between immature and adult Red-chested Button-quail. An apparent sex bias towards adult males in banded populations is explained.

During studies on Stubble Quail in the Mudgee District carried out between 1967 and 1971 (Frith *et al.* 1977) the opportunity arose to take notes on the Red-chested and Little Button-quail that were present in the paddocks at the time. During this period and up until 1974 some banding of these button-quails was carried out.

Study Area

Most of the observations were made on the property "Balmoral", which is owned by one of us (N.K.) and is located at Cooyal (32°22'S., 149 47' E) 20 km east of Mudgee. The area is 540 m a.s.m.l. The countryside is undulating and is drained by the Cooyal and Stoncy Creeks, which flow into the Cudgegong River, a tributary of the Macquarie River. The mean annual rainfall is 667 mm, and is fairly evenly spread throughout the year. Formerly the area was covered with dry sclerophyll woodland dominated by White Box *Eucalyptus albens* and White Cypress Pine *Callitris collumellaris*, with Yellow Box *E. melliodora* and Rough Barked Apple *Angophora floribunda* covering the fertile river flats. The watercourses were lined with River Oak *Casuarina cunninghamiana*, and the shale ridges with ironbarks, mainly Narrow-leaved Ironbark *E. crebra*, red gums, mainly *E. blakelyi*, and Black Cypress Pine *C. endlicheri*. However, with the exception of a few dry ridges and a number of stock reserves along the watercourses

the whole area has now been cleared for cropping and grazing.

Button-quail are generally located in cereal stubbles and standing crops; in paddocks containing native grasses and introduced thistles; and in improved pastures of lucerne, phalaris, rye grass and clover.

Numbers of button-quail build up in those years when heavy rain in January produces a good growth of Windmill Grass *Chloris truncata* and Paddock Love Grass *Eragrostis* sp. in the stubble fields at a rate faster than the stock can eat it down. A thick mat of dead seed heads forms about 40 cm above the ground and provides good cover for quail and button-quail which feed on the grass seeds and spilled wheat. The thick mat also shields them from avian predators, mainly Spotted Harrier *Circus assimilis* and Brown Falcon *Falco berigora*. In most years such ideal cover does not occur because the wheat stubbles are heavily grazed by stock following harvest.

Status

Red-chested Button-quail

The status of the Red-chested Button-quail in New South Wales was recently reviewed by one of us (Morris 1971). In this review it was stated that the species has always been rare in New South Wales, although numbers greatly increased at times of apparent periodical irruptions from the north of Australia where the species is more common. In the light of continued

*Bands used were provided by the Australian Bird-banding Scheme, Division of Wildlife Research, CSIRO.

observations at Cooyal and other published data, that statement may no longer be correct. Red-chested Button-quail were first identified at Cooyal in 1967 although NK had earlier observed that there appeared to be two species of button-quail present. Since 1967 Red-chested Button-quail have been recorded every year except for 1975 when none was observed, however, both of the authors spent less time looking for them in that year than in other years. We considered that they are resident at Cooyal and not occasional visitors. Published records in the New South Wales Field Ornithologist Annual Bird Reports (1970-1976) show this species is now being recorded regularly at a number of places throughout the State. Education of observers to distinguish this bird from Little Button-quail may be one reason for the increased number of observations. The preponderance of summer records in these reports may reflect the greater ease of locating these birds in the stubble fields rather than in the growing wheat. We believe and published records support this view, that Red-chested Button-quail are resident breeding birds throughout the crop and pasture-lands of New South Wales, west of the Great Dividing Range, in small numbers but populations increase rapidly when favourable conditions occur in consecutive seasons.

Little Button-quail

Standard reference texts indicate that the Little Button-quail is a common breeding visitor to grasslands and crops in the interior of south-eastern Australia rarely reaching coastal areas. They are considered to be nomadic and this is supported by data from Austin (1918) who found them to be nomadic summer migrants at Cobhara (N.S.W. Central-west Tablelands) arriving "early in the spring", and departing by March. Pedler (1975) found them to be a common summer migrant in mid-north South Australia, arriving September, departing January, with some stragglers to March. This is in contrast with our experience at Cooyal, where the birds are resident, at least in some years. Unlike the Red-chested Button-quail, we cannot demonstrate resident status every year but our records show that they were present in every month during 1969 and 1970. Indeed the highest number recorded was in May 1969 when over 100 were counted in a four day period. These birds were flushed by using two highly trained

gun-dogs in a manner similar to that used to estimate Stubble Quail numbers as described by Frith *et al.* (loc cit). These quail were counted in an area of 170 ha of grass paddocks and wheat stubble. No nests were located but chicks were found in November indicating that eggs had been laid in October. Some late breeding also occurred as juveniles were caught and banded in April, and a female collected on 20 March, 1969 had a complete egg in the oviduct ready to be laid.

As a result of ten years' observation at Cooyal we consider that the Little Button-quail demonstrates a habit similar to that of the Brown Songlark *Cinchorhampus erudalis* and the Singing Bushlark *Mirafra javanica*, in that they are normally regular summer visitors to the district, but in some years when conditions are favourable, they remain throughout the year.

Banding Data

The method of catching Button-quail for banding purposes was with the use of a spotlight, and hand net at night as described by Morris (1970). Seventy-three Red-chested Button-quail were banded between 15 January 1969 and 23 February 1974, and these comprised 20 adult males, 11 adult females and 42 juvenile and immature birds. Only three banded Red-chested Button-quail were recovered, one two days later; one seven days later; and the other 75 days later, all in the same small paddock in which they were banded. Fifty Little Button-quail were banded between 15 February 1969 and 5 January 1972 and comprised 27 adult males, 14 adult females and 9 immatures and juveniles. Two recoveries were made both two months later in the same paddock in which they were banded. The 4% recovery rate is similar to that obtained for Stubble Quail by Frith and Waterman (1977) but has little significance in view of the small number of birds banded.

Both these species of button-quail are difficult to flush except with the use of trained gundogs and because they are not classed as game birds, the average person rarely comes across them. Recoveries of banded birds by the public thus do not occur. The Secretary of the Australian Bird Banding Scheme (D. Purchase in *litt.*) has advised that no long distance recoveries of either species have been reported in Australia.

Measurements

As a number of specimens of both species was collected both by us and the farm cat, it is therefore of interest to summarise measurements and weights of sexed adult birds. For this comparison, males with enlarged testes and females having convoluted oviducts indicating that eggs have been laid, are considered to be adult.

Red-chested Button-quail

Adult males (5 measured)
Wing: 78-89 mm (mean 84 mm).
Wing Span: 255-262 mm (mean 258 mm).
Length: 129-147 mm (mean 138 mm).
Mass: 27-37 g (mean 33 g).

Adult female (5 measured)
Wing: 79-88 mm (mean 84 mm).
Wing span: 267-276 mm (mean 274 mm).
Lengths: 143-162 mm (mean 153 mm).
Mass: 44-66 g (mean 50 g).

Little Button-quail

Adult male (5 measured)
Wing: 74-80 mm (mean 76 mm).
Wing span: 244-260 mm (mean 253 mm).
Length: 129-137 mm (mean 134 mm).
Mass: 28-39 g (mean 37 g).

Adult female (5 measured)
Wing: 78-89 mm (mean 83 mm).
Wing span: 276-290 mm (mean 285 mm).
Length: 144-161 mm (mean 153 mm).
Mass: 47-64 g (mean 56 g).

Sex Ratio

A bias towards adult males is evident in birds banded but not in birds collected for study skins. This comes about because when a pair of button-quail is flushed, the male flies a shorter distance than the female before alighting. Consequently when flushed at night during banding operations, the males land closer to the vehicle and are more frequently captured. In contrast, of 17 Red-chested Button-quail collected by shooting at Cooyal and lodged in The Australian Museum six were males, and of 14 Little Button-quail collected five were males.

Plumage of Immatures

Plumage differences between juvenile and adult Red-chested Button-quail were noted during this study. Adult females can be recognised by their cinnamon brown, almost reddish breasts without spots at side, and cryptic brown and yellow markings on the back. The adult males are much duller on the breast and have black crescents

on the side of the neck and side of the breast. Both sexes have white eyes and creamy-white legs. Juveniles resemble the adult males but have dark markings on the breast which disappear in the first month. In addition the eyes of the juveniles are blue and the legs have a brown tinge. These plumage and eye differences are not mentioned by Slater (1970) or MacDonald (1973).

Food

Stomach contents of a number of the birds were examined, but this information will be published separately.

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