

## Supplementary observations on juvenile Dollar-birds

By JOHN COURTNEY

The data here presented are intended to supplement observations by van Tets (1965) on juvenile behaviour in the Dollar-bird, *Eurystomus orientalis*.

A series of observations was first begun when at 09.20 hrs. on January 12, 1966, near the junction of Swanbrook Creek and China Gully, Swan Vale, N.S.W., investigation of single high-pitched yapping notes unfamiliar to me, revealed a juvenile Dollar-bird resting on the ground beneath a known nest of the species, which it had apparently left a few days prematurely. It differed chiefly from adults in that the upper mandible was dull black, while the lower mandible and legs lacked colour and could best be described as neutral, in contrast to the red legs and bill of the parents. When picked up after a brief chase, it emitted a shrill, repetitive, squawking distress-call, and when examined in the hand was found to have the whole of the inside of the gape uniformly coloured pale lime-green, while the tail measured 51 millimetres in length when bent at a right-angle to the backbone.

When this juvenile was closely approached, a parent Dollar-bird perched high in an adjacent tree, uttered single scolding alarm calls differing from the harsh, very brief, basic "Tek" by being drawn-out, a call not heard before in this species, and presumably seldom uttered.

Having tape-recorded the "yapping" call (almost certainly a juvenile effort at the much deeper toned adult "Tek") and the distress-call, when first found, a return visit was made in mid-afternoon to obtain a recording for scientific reference of that prominent feature of the juvenile food-begging procedure of this species, the loud and conspicuous food-begging call, which could be described as prolonged bursts of very rapid, high-pitched, ticking notes. Regardless of the type of call being uttered, Dollar-birds open and close the bill once for each separate note, thus the juvenile food-begging call is delivered by very rapidly lowering and raising the lower mandible for as long as the vocalization continues, while an upright posture is maintained.

The statement by van Tets (*ibid.*) that "Both adults fed the fledgling, which appeared to beg with a rapid lowering and raising of the lower mandible and an upright posture" (while making no mention of the food-begging call), can only be regarded as somewhat misleading and inadequate in that while the upright stance is correct, the rapid mandible movement referred to should not be implied to be part of the food-begging posture, in the strictest

sense, without proceeding to mention that its real function is merely part of the mechanical means by which the food-begging call is uttered, and apparently not of true visual food-begging value, such as the gaping efforts of some species, to which the term "food-begging posture" should be restricted. As a general rule, it is well to remember that the food-begging of young, (a procedure of considerable importance and without which advanced forms of birdlife in terms of evolution could not survive), consists of two primary features, (a) visual stimulus from young to parent, achieved by the adoption of a food-begging posture such as the gaping already referred to, and (b) auditory stimulus, achieved by emitting a species-typical, food-begging call, the function of both having a common end-result in triggering a desire in the parents to feed the young.

The next juvenile Dollar-bird was encountered at 11.20 hrs. on January 17, 1966, three miles east when on driving a vehicle towing a loudly rattling trailer in the direction of a tall Eucalypt, an adult Dollar-bird was observed to fly from near the upper limbs, followed by a clumsily-flying juvenile, which, unable to maintain flight, came to the ground forty-five yards away from the point of take-off. It is probable that the noise panicked it into attempting to follow the parent. When examined, it had a tail 58 millimetres long, weighed exactly 5 ozs., the gape was pale lime-green, and not only was the upper mandible black, but the lower also. On release, it uttered yapping notes similar to the juvenile on the former occasion. As the young flyer observed by van Tets (*ibid.*) had a yellow bill, it would seem that either this feature varies in juveniles, or else colour is changed fairly rapidly upon leaving the nest. This poses the question of the age at which the Dollar-bird or Eastern Broad-billed Roller assumes the bright red adult bill.

As the juvenile food-begging procedure (i.e. call and posture) appears to be stereotyped in a single pattern within most species, the interesting suggestion by van Tets (*ibid.*) that the young of the Dollar-bird may possess two quite un-alike food-begging postures (a horizontal stance with wide-open bill, as well as the typical upright attitude) was followed up on January 18, 1966, by a deliberate search for young flyers for the purpose of field observation. At 08.30 hrs., at a point in China Gully, one mile upstream from the Swanbrook Creek junction, two were located, together with three adults. As one juvenile appeared older than the other, possibly two families were involved. This appeared to be borne out on a number of occasions. When the three adults happened to be in one tree at the same time, hostility (?) was observed. While one bird looked on, a second would closely approach the third, and on adopting a stiffly upright posture, would, most vigorously though not rapidly, jerk up and down a number of times. This was interpreted as the threat posture of the species, and not the phenomenon

of post-nuptial courtship activity (of which one function may be to imprint courtship procedure in fledglings), as the reaction of the third-party was to beat a hasty retreat.

Although the two young (both of which appeared to have black bills) were closely observed for the rest of the morning with  $7 \times 50$  binoculars, the horizontal attitude with wide-open bill, was not seen. On several occasions, the young were observed to briefly adopt a horizontal attitude, however, this was clearly a flight-intention movement in hesitant novices, as flight immediately followed.

#### REFERENCES

van Tets, Gerard F. 1965. "Parental feeding of a fledgling Dollar-bird." *Emu*. 65: 79.

"Ashgrove", Swan Vale, via Glen Innes, N.S.W.

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**The Breeding Plumage of Two Rare Migrant Waders.**—When engaged some few years back in preparing a field guide to the waders, with H. T. Condon (1965), I felt it would be advantageous with migratory species if the breeding plumage was included. In some cases this had not been seen, according to personal observations or through published data, in Australia. However, most of such information was readily available in British and American publications including these species. In fact the only two species then known to visit Australia somewhat regularly from the Northern Hemisphere, which had not been recorded in Great Britain or North America, and which possess conspicuous breeding plumage, were the Greater Knot, *Calidris tenuirostris*, and Large Sand-Dotterel, *Charadrius leschenaulti*.

I have now observed each of these species in breeding plumage on two or more occasions over the past few years on tidal flats close to Sydney, N.S.W. As I cannot locate any published record of such information with either in Australia, data on the observations concerned and a brief description of each species is herein given.

In company with J. N. Hobbs a Greater Knot, which appeared to us as practically in full nuptial plumage, was seen at the old Cook's River estuary, Botany Bay, on April 7, 1963. The upper-parts were strongly and regularly marked with chestnut, brown, buff and grey; the head and neck were strongly striped with black and brown; the throat whitish; the chest appeared mostly black, with the rest of the underparts white with regular-spaced black spots appearing on the flanks, more prominent adjoining the black breast and diminishing towards the tail; the rump was white. This description agrees well with an illustration of a breeding Greater Knot in *Birds of Japan in Natural Colours* (1962). Again on September 1, 1963, one bird was seen at the same place, apparently another that had arrived back on migration, and which retained