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## RÜPPELL'S GRIFFON VULTURE AT KOTORKOSHI, NIGERIA

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Close to the village of Kotorkoshi (also spelled Kwatarkwashi, 12° 07' N, 6° 48' E) in northwest Nigeria is a colony of the Rüppell's Griffon Vulture *Gyps rueppellii*. It is situated high on the sheer south-west face of the largest granite inselberg in the district (Figure 1), and from their ledges the vultures look out over the village itself some 300 m below. There are many inselbergs in this area, but local people told us that the griffon vultures (*maiki* in Hausa) only nested on the one closest to the village. We visited the colony in the breeding seasons of 1970 to 1973 (inclusive) and also in three non-breeding seasons. In this area of northern Nigeria the wet season extends from the beginning of May to the middle of October, and thus the dry season is about six to seven months long (Elgood, Sharland & Ward 1966).

## OBSERVATIONS

On 18 February 1970 and again on 20 February 1971, we counted about 25 birds on the rock and by looking down from the top could see three nests. No birds were seen on 9 August 1970, but on 16 August 1971 ten birds were on the face. On 12 March 1972 we reached one nest which contained a chick whose wing measured 190 mm (Figure 2). There was no nest material except for some grass accumulated on the ledge. The chick soon became hot and it then moved into A.W.C.'s shadow. It was estimated, from Fig. 9 in Houston (1976), to be about five weeks old so that the egg would have been laid about 11 December 1971 (55 day incubation period, Houston 1976).

On 18 December 1972 we found eight nests, all of which were very scanty in material; each nest contained one egg. The previous year's nest was again in use. Four eggs, all white, had an average size of 92.5 x 68.5 mm (range 90-94 x 67-71 mm), and an average weight of 220 g (range 192-234 g), but were not fresh. Only six birds were seen flying.

On 28 January 1973 these eight nests and a ninth (Figure 3) were again visited. Six chicks were seen; the wing measurements of three were 130, 110 and 60 mm and their weights were 3000, 2400 and 1040 g respectively. Their ages were estimated to be about 30, 27 and 15 days (from Houston 1976), and hence the eggs were laid about 4, 7 and 19 November 1972. Bones were found in one nest, and at another the adult repeatedly threatened A.W.C.

On 2 April 1973 five chicks remained. The smallest one of the three on the previous visit now had a wing of 375 mm and weighed 4250 g. Bones were found in two nests. A small chick was in its parent's shadow, but the



Figure 1. The colony of *Gyps rueppellii* at Kotorkoshi, viewed from the west in August, showing the positions of the nests in 1973. Photo: Peter Mundy.



Figure 2. A Rüppell's Griffon Vulture chick aged about five weeks. Note the paucity of nest material. Photo: Allan Cook

other four large chicks were unattended and all stood with their backs to the sun and their heads in their own shadows. Eleven birds were seen flying.

Several bones were collected, comprising one large molar tooth, a small vertebra, a phalanx, a femur and tibia of a small mammal, a hyoid bone, and fragments of pelvis and maxillary. The tooth was from an *Equus* sp. and the other bones were of Bovidae (Plug 1978). The lengths of these pieces ranged from 34 to 95 mm (average 59 mm), and although none showed signs of digestion and had therefore not been swallowed by the chicks, all could easily have been swallowed by a chick the size of that in Figure 2.

On 22 July 1973 three adults and one fledgling were seen flying, and one adult was perched on the ledge.

#### DISCUSSION

Rüppell's Griffon Vulture begins breeding at Kotorkoshi in November, which is after the rains have finished. Assuming a nestling period of nearly five months, the first chicks will be flying in the middle of May, and all chicks fledge in the wet season. For most of their nesting period the vultures are exposed to continuous sun.

In September 1939 Serle (1943) saw "over a hundred birds ..... resting on the ledges and wheeling round the rock face". The colony now seems to comprise a minimum of only nine breeding pairs, and has therefore declined during the intervening 50 years. We can only guess at the reasons for a decline, but two at least spring to mind: lack of food and interference at the colony by local people. Rüppell's Griffon Vulture is certainly held in some superstitious esteem, for we have seen parts of the bird for sale in the Sokoto town market; and Hartert (1924) noted how the fluid of the bird's eyes was used as a cosmetic.

One of the reasons for the decline of the similar Cape Vulture *Gyps coprotheres* in southern Africa is the lack of suitable bone fragments in the chicks' diet (Mundy & Ledger 1976). The few items we collected from *rueppellii* nests at Kotorkoshi, however, were of a suitable size for swallowing, and none of the seven chicks examined in 1972 and 1973 showed signs of calcium deficiency, in the shape of broken wings.

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