

Australian Bee-eater *Merops ornatus* swallowing stones

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Abstract

Bee-eaters, of the Family Meropidae, are known to ingest small pieces of grit as gastroliths and while a few anecdotal reports of them eating slightly larger gastroliths exist, documented evidence is lacking. A Rainbow Bee-eater was photographed swallowing a small stone, possibly for the first time, and this is reviewed and discussed.

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The 31 species of bee-eaters of the Family Meropidae (Gill *et al.* 2024) are insectivores that specialise in aerial foraging. Bee-eaters are known to ingest gastroliths, or stones, in the stomach (also known as gastroliths; Fry 1984). The Rainbow Bee-eater *Merops ornatus* is widespread throughout most of Australia (including North Queensland), throughout New Guinea and adjacent islands, westward to the Indonesian island of Sulawesi and the archipelago of Nusa Tenggara to its south. It feeds predominantly upon bees, wasps, and dragonflies, but also other insects, often visually sought from exposed perches used as vantage points (Fry 1984, 2001).

At 17:52 on 11 October 2019, AE photographed a Rainbow Bee-eater at Noonbah Station (24°06'S 143°11'E, 176 m above sea level) in the Channel Country, 132 km SSW of Longreach, central-western Queensland. Soil features of the Channel Country include "pedogenic gilgai, deep desiccation cracks, nodules of gypsum, carbonate and Fe-Mn oxides/hydroxides, and isolated, frosted and well- rounded quartz grains" (Gibling *et al.* 1998: 614).

The bee-eater was on the bank of a dam picking up and swallowing substantially-sized stones relative to its size (Figure 1). One stone was about the same size as the bird's eye, and thus about 4.5 mm at its widest point. Its colour and angularity are consistent with it being pedogenic gypsum or

calcium carbonate and thus containing beneficial minerals.

In a general account of the food and foraging of bee-eaters, Fry (2001: 306) noted that "Grains of sand, bits of snail shell or birds' eggshell, pieces of quartz and even glass cubes from shattered windscreens can be ingested, not as food, but to act as gastroliths or possibly as a calcium supplement". Gastroliths are swallowed by many bird species for their mineral content (e.g. calcium) or as an aid to digestion of harder dietary components, by grinding them together in the gizzard (Wings 2007).

Although the food of Rainbow Bee-eaters is well-known (Higgins 1999), there are few accounts of them eating gastroliths. Morris (1977: 158) observed birds "on pathways eating small pieces of gravel" and Cameron (1938: 80) saw birds swallowing pieces of sheep bone "about the size of a pea". Fry (1984: 138) reported Rainbow Bee-eaters "Seeking gastroliths on the ground is often social activity, as in other bee-eaters. Large pieces of grit may be picked up and eaten without ado". While bee-eater pairs excavate nesting tunnels into softer bank or ground soil, this lone bird was not doing so. We believe that the event observed at Noonbah Station might be the first documented photographic evidence of this behaviour by a Rainbow Bee-eater, and of swallowing a stone substantially larger than a piece of grit.



Figure 1. A Rainbow Bee-eater about to swallow a stone about 4.5 mm across.

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References

- Cameron AC. 1938. Rainbow-birds in the interior. *Emu* 38: 80-81.
- Fry CH. 1984. *The Bee-eaters*. T & AD Poyser: Calton, UK.
- Fry CH. 2001. Family Meropidae (Bee-eaters). In *Handbook of the Birds of the World. Volume 6. Mousebirds to Hornbills*, eds J del Hoyo, A Elliott, J Sargatal, pp. 286-341. Lynx Edicions: Barcelona.
- Gibling MR, Nanson GC, Maroulis JC. 1998. Anastomosing river sedimentation in the Channel Country of central Australia. *Sedimentology* 45: 595-619.
- Gill F, Donsker D, Rasmussen P, eds. 2024. *IOCO World Bird List (v14.1)* <http://www.worldbirdnames.org/> viewed 12 January 2025.
- Higgins PJ. 1999. *Handbook of Australian, New Zealand & Antarctic Birds. Volume 4. Parrots to Dollarbirds*. Oxford University Press: Melbourne.
- Morris IC. 1977. More observations of the Rainbow Bee-eaters *Merops ornatus* in the Warby Ranges. *Victorian Naturalist* 94: 158-160.
- Wings O. 2007. A review of gastrolith function with implications for fossil vertebrates and a revised classification. *Acta Palaeontologica Polonica* 52: 1-16.