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AFRICAN PIPIT FEEDING ON MONKEY BEETLES

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Beetles are important prey of African Pipits *Anthus cinnamomeus*, but scarab beetles (Scarabaeoidea) are seldom recorded in their diet. Scarabs made up less than 1% of prey items in the stomach contents of African Pipits collected in the Free State (Kopij et al. 2002), and were found in only 1 of 51 birds sampled in Zimbabwe (Borrett and Wilson 1970). On 27 November 2012, PGR photographed a juvenile African Pipit systematically targeting small monkey beetles from flowers of the Cape Weed daisy *Arctotheca calendula*. The bird was feeding along a roadside verge in Strandfontein Sewage Works, Cape Town, where the grass is mown regularly, creating a suitable habitat for the daisy.

The pipit foraged continuously during the 10 minutes of observation, from 10h10 to 10h20. It was a warm, sunny morning with only a light southerly breeze, and insect activity was evident. The pipit ignored honeybees visiting the daisies, but jumped up to try to hawk other small, flying insects (catching at least one), and several times took small prey from the ground. However, most prey was obtained by probing into the flower heads of the daisies (Fig 1). Subsequent examination of the images proved these prey items to be small monkey beetles (*Heterochelus* sp.). Some of these beetles were tricky to handle, with the pipit spending up to 20 seconds manipulating the prey before swallowing (Fig 2). One beetle, which struggled vigorously in the pipit's bill, was dropped and, although the

bird pecked at this beetle on the ground, it did not eat it. Male monkey beetles have enlarged, spiny hind legs that they extend laterally when disturbed (Fig. 2), apparently to deter predators or rival male beetles. It is possible that this particular beetle was able to defend itself. It is interesting that the bird was a recently fledged juvenile, given that young birds tend to avoid types of prey that are hard to exploit.

The scarcity of scarab beetles in African Pipit diets probably relates to the large size of most scarabs; they are somewhat more common in the diets of the slightly larger Buffy *A. vaalensis* (Borrett and Wilson 1970) and Plain-backed *A. leucophrys* pipits (Kopij et al. 2002). These papers do not record the types of scarabs consumed, but monkey beetles are among the smallest of the Scarabaeoidea, and thus may be more likely to be eaten than other, larger species. The slow flight of monkey beetles near flowers would attract the attention of ground-feeding insectivorous birds, but the beetles' enlarged hind legs might help to reduce avian predation.

There is marked sexual dimorphism in many monkey beetles, particularly in species such as *Heterochelus* where the females spend much time deeply embedded in flowers. Such females tend to have more cryptic colouration than males, often matching the colour of their host flower. This suggests that they are the targets of visual predators, but our observation appears to be the first record of a bird targeting monkey beetles from flowers. Monkey beetles tend to visit tall flowers that are not readily accessible to ground-feeding pipits. *Arctotheca calendula* is one of the shortest daisy hosts for monkey beetles.

References

Borrett RP, Wilson KJ 1970. Comparative feeding ecology of *Anthus novaeseelandiae* and *Anthus vaalensis* in Rhodesia. Ostrich Supplement 8: 333-341.

Kopij G, De Swardt DH, Nuttall RJ 2002. Diets of pipits in South African grassland. Ostrich 73: 71-73.



Fig 1. The juvenile African Pipit probing the flower head of a Cape Weed daisy *Arctotheca calendula* to remove a monkey beetle.



Fig 2. The African Pipit holding a male *Heterochelus* monkey beetle (note the large hind leg pointing up).