FAUNA

PEBBLE-MOUND MICE

Stephen Davies

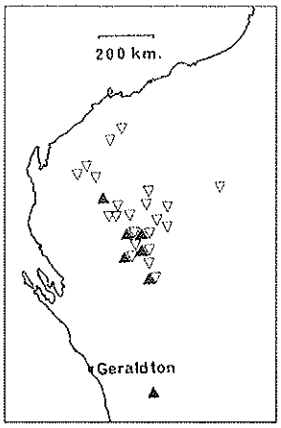


Fig. 1. Sites in WA in which pebble mounds surmised to have been made by P. chapmanii *(hollow triangles) and an unknown murid (black triangles) were located.*

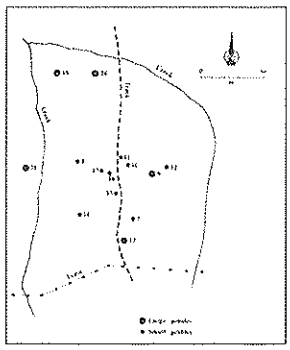
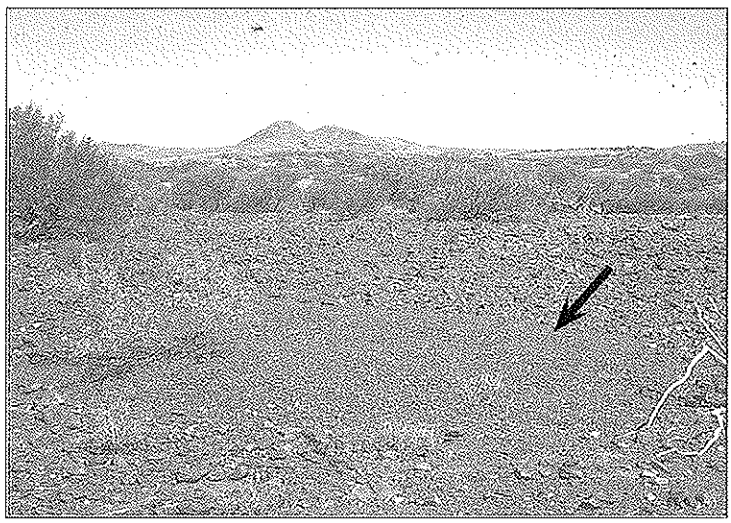


Fig. 2. A site on Erong Station, WA, showing the positions of pebble mounds surmised to have been built by P. chapmanii *(small dots) and an unknown large murid (large dots) in a mixed colony.*

For many years, pastoralists in the Pilbara have found neatly sorted collections of pebbles, all the same size, on the hillsides of their properties. Regarding these as 'gifts from God', they made good use of them as aggregate when mixing concrete for their various constructions. When I first drove across the divide between the Murchison and Gascoyne Rivers in 1959 I was intrigued by these mounds, photographed them and discussed them with David Ride, then Director of the WA Museum. He suggested that they might be made by a mouse, perhaps a *Leggadina* (then the name of the genus that is now *Pseudomys*). My photograph was published in the first edition of E.P Walker's (1964) book 'Genera of Living Mammals' in the section on *Leggadina*. As I travelled around the Murchison and Goldfields in those days I found many mounds, but none seemed to be actively in use. It was not until Andy Chapman found active ones in the Hamersley Ranges that living animals were caught and described, proving to belong to the rodent genus *Pseudomys*. Subsequently three more species have been described, extending their distribution across northern Australia.

The little pebble-mound mouse (*Pseudomys chapmanii*) once lived on Mileura Station, where I did my most intensive work on emus. It does so no longer but still lives on the Hamersley Range. It characteristically builds a pebble mound, each pebble within a weight range of 1.5-3.8 g and of a volume 0.6-1.7 cc. These mounds can be two metres across and one metre deep, the uniformity of their pebbles is such that they do, indeed, make admirable screenings for concrete-making by pastoralists.



A large old pebble mound - arrow indicates top edge. (Stephen Davies)

Pseudomys chapmanii. *(Bert and Babs Wells/DEC)*

No one has yet done experimental work to prove how the mounds are used but it is surmised that they act as dewponds, the pebbles cooling at night and heating more slowly than the surrounding air as the sun rises, so that water condenses onto them. In this way the mice could obtain water in places where the soil is too shallow to allow them to dig deeply to moist soil, usually about 60 cm below the surface. Such sites are often vegetated by *Senna* bushes that yield a large crop of seeds for the mice to eat.

In 1976 it was possible to survey the distribution of these pebble mounds in the Murchison and Pilbara. Figure 1 contains data from 1981* and 1986* showing the mounds to be widely distributed. At one site where we mapped the mounds, we found to our surprise that there were, intermingled with the small pebble mounds, mounds of large pebbles (weight range 15.5-26 g; volume range 6.5-12.0 cc). The distribution of the large pebble mounds differs from that of the small

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pebble mounds and is more southerly (Fig. 2). Andrew Burbidge has suggested to me that they may be relicts of the nests of the true stick-nest rat, rather than a giant dew-pond mouse, and I am inclined to agree.

The pebble-mound mouse has left behind a series of public works that must have taken years to build and been used by generations of mice. Perhaps all those at one site were not occupied at the same time? It is to be hoped that the population in the Hamersley Range is secure.

[For reference list, contact Ed.]*