Some observations on breeding Garden Tiger moth *Arctia caja* (L.) (Arctiidae) and on its varieties

I was interested to read Mike Bryan's article on his breeding experiences with this species (*antea*: 36-38) and, having bred many thousands some 30 to 40 years ago for various purposes, would like to add some observations.

I noted in particular his problems in obtaining enough food for them. Even when more usual pabulum was available I nearly always fed mine on *Brassica* cultivars (cabbage, cauliflower leaves, curly kale, sprout tops as available) and when in season, horseradish – the leaves, not the roots! A word of warning, however; be sure you know where the plants have come from. If in doubt test it first on a few small larvae if available. My then neighbours sprayed theirs with so much insecticide it was a wonder they were not themselves poisoned and, very often, that bought in supermarkets was also lethal. I was also on good terms with a local grower who was quite happy to let me have the leaves from sprout and cauliflower plants after harvesting. Mind you, it was no fun collecting them when covered in snow or ice, not to mention pigeon droppings. Harvested in bulk and kept in a refrigerator a large sack full would last a week or ten days.

Although I did not use it for rearing large numbers, *A. caja* readily feeds on semi-synthetic diets as described in Ekkehard Friedrich's *Breeding butterflies and moths* (Harley Books, 1986) and for those who do not like the trouble of preparing their own, the diet is commercially available.

One discovery I made when rearing this species was that in order to prevent the larvae going into hibernation, the young stages must be reared at an elevated temperature compared to that normally experienced by them in autumn. I did discover, however, that there is an optimum, which should not be exceeded. At 20°C, about 50% would break their hibernation and feed on to pupation and the resulting adults could be bred from. At few degrees above this temperature, while almost all would carry on feeding, the resultant adults proved to be mainly infertile. I do not recollect that the photoperiod had any effect on *A. caja*, unlike that which it has on some other species, such as *Pieris brassicae* (L.). Mike is to be congratulated for managing to get through seven generations; his article observes, he did have problems with mating, vigour and fertility.

No doubt because it had a rather small circulation and only ran for 10 years in the 1890s, articles in *The Naturalists' Journal* tend to be overlooked. In 1897, S. L. Mosley published therein *An illustrated catalogue of varieties of British Lepidoptera*, accompanied by 27 Plates of which no less than seven (numbers 12 to 18) show 68 varieties of *A. caja*. Brief descriptions are given, usually mentioning place of capture and in whose collection, but as explained in the text, no names were given to any and an interesting theory put forward as to why they might have occurred. I quote thus: "*Few insects are so liable to vary as this, especially if reared under artificial conditions. We have a large collection of drawings of extraordinary freaks, not two of which are exactly alike. . . . As the varieties are so endless and so intermixed it will be useless to attempt to classify them, so we shall just explain the figures briefly for those who have uncoloured plates.*" This, and other journals a hundred years ago, were often published "penny plain, two-pence coloured." Mosley also goes on to comment that varieties are often obtained more by beginners than by experienced entomologists!– BRIAN O. C. GARDINER, 2 Highfield Avenue, Cambridge CB4 2AL.