

Pale Shining Brown *Polia bombycina* (Hufn.) (Lep.: Noctuidae) re-discovered in Oxfordshire in 2005 and 2006 – a nationally significant population of a UK Biodiversity Action Plan Priority Species

Between 19 June and 15 July 2006, a total of 88 examples of Pale Shining Brown *Polia bombycina* were caught in 6 watt actinic light traps set in arable field margins on four farms in the area between Witney, Long Hanborough and Charlbury in west Oxfordshire. These were operated as part of sampling for a research project investigating macro-moth diversity in farmland (part of WildCRU's Upper Thames Project – see below). The highest total in one night was 57 individuals (in three traps) and the peak appeared to be in the last few days of June and the first few days of July. In addition, two were caught in a Rothamsted Insect Survey light trap, operated as part of the same project near Hailey some 3 km north of Witney – one on 2 July and one on 7 July 2006. Previously, a single example was caught at MV light near Great Rollright, some 3 km north of Chipping Norton in Oxfordshire on 9 July 2005 by Andrew Turner, who trapped three at the same site together with Tony Davis on 30 June 2006. A further example was trapped at MV light in a garden in Over Norton, roughly 1km north of Chipping Norton, by Adrian Buckel on 3 July 2006.

Polia bombycina has undergone a massive decline in Britain since the mid-1970s. Its current status is Notable B (Nationally Scarce), but it now probably merits Red Data Book status (thought to occur in fifteen or fewer 10 km squares). Until the mid-1970s, it was widely and well distributed in southern and south-east England northwards to a line between the River Severn and the Wash (Waring et al., 2003: *Field guide to the moths of Great Britain and Ireland*. British Wildlife Publishing). Since 2000, the vast majority of sightings have been from Salisbury Plain, Wiltshire where it is recorded annually, but the population is thought to be small (*Butterfly Conservation Lepidoptera Conservation Bulletin* 7:15). Very few have been seen elsewhere, with very small numbers from other sites in Wiltshire, Norfolk and Hertfordshire. The Oxfordshire population appears therefore to be the strongest currently known in Britain. Before 2005, it was last seen in the county in 1984 and was widespread if local up to at least 1979 (Waring, 2002: *Ent. Rec.* 14: 128-129).

Before its decline, *P. bombycina* was most common on light or calcareous soils (Heath & Emmet, 1979: *The moths and butterflies of Great Britain and Ireland* Vol. 9. Harley Books). The habitat in the area where the overwhelming majority of moths were caught in 2006 is open, largely arable farmland with generally low hedges and sparse trees, on rather thin, well-drained calcareous soil on limestone. The topography is rather flat and the land is relatively elevated (c.100-120m) so the climate is probably quite cold compared to more low-lying areas such as central Oxfordshire. There are quite large blocks of mixed and broadleaved woodland, mainly to the north. The field in which 57 were trapped in one night is almost adjacent to one of these, and has tall hedges and 6m wide grassy margins. However, most fields in the area have narrow 1-2m wide margins. There is very little other semi-natural habitat.

Each farm was sampled (along with a number of other farms, some in other parts of Oxfordshire) once during fortnightly periods from May to October, and 2006 was the first year of sampling at these sites. Consequently, the data gathered so far are

too limited to draw any conclusions concerning relative abundance at the different sites, or habitat associations. The main site near Chipping Norton is the Pauline Flick Reserve run by Banbury Ornithological Society, a stretch of disused railway line managed for conservation with tall scrub and open, sheltered grassy areas. Like the farm sites, it is on well-drained calcareous soil and is at a similar elevation. There are small blocks of woodland in the area and hedges are variable in size, some forming tall shelterbelts. There is also an apparently lightly managed grassy hillside 200m to the north. The topography is different, as this is quite deeply undulating countryside. The Over Norton garden site is on the edge of this area, with a large area of parkland nearby.

It is interesting and perhaps rather surprising that such a population had apparently gone unnoticed, but the area has been very little recorded until recently and traditionally, arable farmland is not a habitat that greatly attracts the attentions of entomologists. The two areas in which the moth has been found in Oxfordshire are roughly 14 km apart. The terrain is essentially similar in the intervening area, and similar habitat extends across a large area of west Oxfordshire, adjacent parts of Gloucestershire including the Cotswolds, and just into Warwickshire. Some of these areas are undoubtedly under-recorded. It therefore seems likely that the moth occurs over a wide area, although recent experiences elsewhere suggest that if this is so, it may now be very localised within it. In Gloucestershire, there are a cluster of records northeast of Cheltenham from the early 1990s, with one further east towards Stow-on-the-Wold. The last county record is from 1996 (Gaunt, 2006: *Gloucestershire moths – a second account*. Published privately). Recent trapping in parts of Warwickshire adjacent to the Chipping Norton area has failed to produce the moth. This included two sessions at an apparently suitable site 6km away from the Great Rollright site, at the right time of year and in good conditions with multiple MV light traps (David Brown, pers. comm.). Records for Warwickshire are concentrated in the south of the county, with the last in 1995 from Bidford-on-Avon, where it had been recorded fairly regularly since 1984 (Brown, 2006: *The larger moths of Warwickshire*. Atropos Books). The terrain is somewhat different in most of south Warwickshire, being more low-lying and generally less calcareous, and therefore somewhat dissimilar to areas which the moth seems to prefer. Therefore, the evidence tentatively suggests that Great Rollright may be near its current northerly limit in this part of the south Midlands.

However, until more is known of the ecological requirements of this moth, we can only speculate on its likely distribution. The larva has not been found in the wild (Waring et al *op. cit.*), in spite of intensive searches at known sites in recent years, in particular Salisbury Plain (Tony Davis, pers. comm.) and a search in autumn 2006 at one of the Oxfordshire farms. The larvae feed on a variety of herbaceous plants in captivity, as well as woody species such as willows and Common Hawthorn. They are not recorded feeding on grasses. Larvae obtained from a female captured in Oxfordshire in 2006 accepted Dandelion, Broad-leaved Dock and Common Hawthorn, being particularly keen on the former. It seems likely that woody species are generally only eaten in the spring, when their leaves are more easily digested.

Those given only hawthorn in autumn 2006 remained healthy, but their growth was very slow. The larvae are highly negatively phototaxic and rapidly hide under tissue or soil if brought into the light. Therefore, we speculate that in addition to being nocturnal in the wild, they might only be active well after dark and perhaps only on darker nights. Whilst the overwintering stage of the genus *Polia* is normally the larva (Ronkay, Hacker & Hrebly, 2002: *Noctuidae Europaeae Vol. IV Hadeninae I*. Entomological Press, Sorø), the overwintering stage of *P. bombycina* seems unknown since all successful rearing attempts of which we are aware have been by forcing. The larvae reared by MCT at room temperature in 2006 fed up steadily and pupated to emerge in late October or November. Some kept in an unheated outhouse only reached about half grown (penultimate instar) and stopped growing. These were put outside on potted plants, but have probably not survived. It probably overwinters as a small larva.

It is hoped that the discovery of an apparently strong population of this moth will present the opportunity to learn something of its ecology. Further work will concentrate on continued monitoring, searches for larvae, more intensive light trapping with a mark-release experiment, light trapping over a wider area and further captive breeding in natural conditions with behavioural observations.

The Upper Thames Project is a collaborative research project led by the Wildlife Conservation Research Unit (WildCRU), Department of Zoology, Oxford University investigating the effects on diversity of the management of lowland farms, with an emphasis on declining species. The moth work is funded by the Esmée Fairbairn Foundation within a wider framework funded by the Tubney Trust, and is in partnership with Butterfly Conservation. We are grateful to Rothamsted Research for their support. We would like to thank Tony Davis and Mark Parsons (Butterfly Conservation), Ruth Feber and David MacDonald (WildCRU), Martin Corley, Andrew Turner, Adrian Buckel, Juliet Hopwood (Rothamsted light trap operator), David Brown (Warwickshire Moth Recorder), Roger Gaunt (Gloucestershire Moth Recorder), Norman Hall and Thames Valley Environmental Records Centre for comments and information in the preparation of this note, and the farmers for allowing us access to their land.— MARTIN C. TOWNSEND and THOMAS MERCKX, Wildlife Conservation Research Unit, Department of Zoology, University of Oxford, Tubney House, Abingdon Road, Tubney, Oxfordshire, OX13 5QL (E-mails: martin.townsend4@ntlworld.com and thomas.merckx@zoo.ox.ac.uk).

Diaperis boleti (L.) (Col.: Tenebrionidae) in Hatfield Forest, Essex

Diaperis boleti is an unusual darkling beetle that eats and tunnels into the polypore fungus *Piptoporus betulinus*, commonly seen growing on the trunks of dead and dying birch trees *Betula* spp.. Traditionally, this has been a rare beetle in the UK, but in recent years the incidence of finding has increased, especially on the eastern side of the UK. In June of 2006, during a visit to Hatfield Forest in North Essex, the reachable *P. betulinus* on two dead birch trees were tapped with a stick above a beating tray. From the fungi on the first tree, nine adult *D. boleti* fell onto the beating tray. From the second dead birch, one bracket of polypore yielded no less than 15 adult *D. boleti*. Within the confines of Hatfield Forest there are many dead, standing