

**Lepidoptera recorded at the
RSPB's Arne Nature Reserve, Wareham, Dorset
1970 - 95**

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January 2008

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wpo/dptshare/James Cadbury/Lepidoptera of a Dorset Heathland

LEPIDOPTERA RECORDED AT THE RSPB'S ARNE NATURE RESERVE, WAREHAM, DORSET, 1970 – 95.

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Summary

This paper presents the results of Lepidoptera recording at the RSPB's Arne Nature Reserve, on the Purbeck Heaths of southeast Dorset, during the years 1970 – 1995. Most of the records resulted from moth trapping using a variety of lights close to the hamlet of Arne by Bryan Pickess, but sightings of butterflies and day-flying moths are included. Lowland heathland is the predominant habitat of the 501 ha reserve.

A total of 34 butterfly species, 430 'macro'-moths and 366 'micros' have been recorded at Arne. They include 10 Red Data and 34 Nationally Notable 'macro'-moths. Among the 'micros' are eight potential Red Data and 27 Nationally Notable species. Of particular conservation importance among the resident heathland species are the Dingy Mocha *Cyclophora pendularia*, Large Bagworm *Pachythelia villosella*, (a psychid,) and the plume *Buckleria paludum*, (Small Grass Emerald *Chlorissa viridata*, Bordered Grey *Selidosema brunnearia* Ringed Carpet *Cleora cinctari*). The BAP Priority Silver-studded Blue *Plebeius argus* (a Biodiversity Acha Plan Priority Species) has many colonies on the damper heathland. The Horse Chestnut *Pachycnemia hippocastanaria* (Nb) can be one of the most abundant moths on the heathland. Neither the Speckled Footman *Coscinia cribraria* nor the Narrow-bordered Bee Hawk-moth *Hemaris tityus* have been observed at Arne since 1983 and 1982 respectively. The breeding population of the Dark Green Fritillary *Argynnis aglaja* has also died out, following the drought of 1976. Two moths with larvae that feed on lichens on trees, the Four-dotted Footman *Cybosia mesomella* and Beautiful Hook-tip *Laspeyria flexula*, were formerly frequent but declined in the 1990s, as did the White Admiral *Limenitis camilla* and Silver-washed Fritillary *Argynnis paphia*. At least five 'macro' moths colonized Arne or the neighbourhood during the 1966-1972 period. Arne has a good list of species that have strayed from habitats not present on the reserve but are present elsewhere in Dorset. Immigrants from the Continent are well represented. There are also some surprising records of rare species outside their very restricted range in Britain.

There is already considerable concern about the impact of Sika Deer *Cervus nippon* at Arne on the vegetation, including the larval food-plants of some of the reserve's special moths. Stands of old heather are important for retaining the Large Bagworm. On the other hand, rotational strip or patch burning is to be encouraged to provide the building phase of heathland vegetation favoured by Bristle Bent *Agrostis curtisii*, the suspected larval food-plant of the Speckled Footman.

Introduction

The RSPB's Arne nature reserve is situated in the Purbeck Heaths complex of southeast Dorset, which is one of the largest surviving tracts of lowland heathland in southern Britain. Not only is the habitat a nationally scarce one, but the climate is intermediate between that of southeast England with generally warm summers and the southwest where there is an oceanic influence and mild winters. In addition a range of semi-natural other habitats occur within the Arne Reserve, including semi-natural broad-leaved and coniferous woodland,

neutral to acid grasslands, freshwater and saline reedbeds, saltmarsh, sandy and cliffed coast, which make the biodiversity of Arne peninsula one of the richest in Britain.

The lepidoptera of the Arne reserve has been the subject of more intensive study than any other RSPB reserve with the possible exception of the butterflies at Leighton Moss and Warton Crag on Morecambe Bay, Lancashire (Wilson 1997). This is due to the long series of trapping results provided by one of the authors, Bryan P. Pickess, who was warden at Arne from 1966 until 1996.

This paper presents the results of an analysis of these records, providing an opportunity to investigate the lepidoptera fauna of a key heathland reserve and assess changes that may have taken place over the years 1970-95.

Habitat

The main habitat on the Arne reserve is dry heath (252 ha) with Heather *Calluna vulgaris* dominant and Bell Heather *Erica cinerea*, Common Gorse *Ulex europaeus* and Dwarf Gorse *U. minor* frequent. There is also 50 ha of wet heath and valley mire with much Cross-leaved Heath *Erica tetralix* and Purple Moor-grass *Molinia caerulea* together with some Dorset Heath *Erica ciliaris* and its hybrid with *E. tetralix*. Other habitats include 44 ha of broad-leaved semi-natural high forest (mostly oak and birch), about 5 ha of mature pine woodland on Arne Hill, 6 ha of saltmarsh reedbed, 9.5 ha of upper saltmarsh and 4 ha of shingle and sand dune bordering Poole Harbour (RSPB Arne Management Plan 2000 – 2005). The main habitat change at Arne has been an increase in open dry heath as a result of the removal of established regenerated Scots Pine *Pinus sylvestris*, rhododendron thickets and bracken control. Around the trap location at Syldata, the Manager's bungalow, oaks and birches have continued to grow, further isolating the site from open heath.

Methods

The source of the majority of moth records is the trapping that was carried out near Syldata, (SY 971878) close to the small hamlet of Arne. For the seven years 1970 – 77 (no records for 1974), a Rothamsted trap with a 200 watt tungsten bulb was operated on open heath with scattered birch and Scots Pine, 300m northwest of the Syldata site. From 1976 – 88 a mercury vapour bulb was used in a Robinson trap and later a dustbin adaptation. Catches as a result increased. The mercury vapour was replaced by a blended bulb from 1990. A Heath trap with an actinic strip light was used for surveys at Froxen Copse in 1975 and adjacent Slepe Heath in the summer of 1980 (Pickess 1981). Records were available each year with the exception of 1974, 1979 – 81 and 1989. The total trap nights were 1603 with a Rothamsted and 1693 with a mercury vapour or blended bulb. 38.3% of the total for Rothamsted trap nights and 66.6% of those using a mercury vapour or blended bulb were in the three months July – September. There were only 180 trap nights in the January – March period and 517 in October – December (Table 1). During the main trapping period, July – September, the trap was run almost nightly. For this period broad comparisons can be made between years. At other times inconsistencies in trapping periods mean that annual records are not usually comparable. Butterflies and day-flying moths were recorded casually, but in the case of butterflies in some detail. In addition to Bryan Pickess' records, a few made by other entomologists have been included, notably by the Rev. S. Pittis in the early 1980s (mostly at the northeast edge of Slepe Heath SY 955865), and by Peter Brash who ran a mercury vapour light trap near the Work Centre (SY 972878) in the summer of 2000. Many of the 'micro'-

moths caught in a Rothamsted trap over the years 1972 –1976 were identified by Eric Bradford and Richard Dickson. The Dorset Environmental Records Centre provided a series of records for Speckled Footman *Coscinia cribraria* from sites adjacent to the Arne reserve. Nomenclature and information on national status, distribution and larval food-plants of 'macro'-moths was sourced from Waring, Townsend and Lewington (2003). For nomenclature and food-plants of 'micros' Emmet and Heath (1992) and Bradley (1998) were used.

Results

A total of 366 'micro'-moths (including 105 Tortricidae and 89 Pyralidae), 430 'macro'-moths and 34 butterflies have been recorded at the Arne nature reserve (Table 2).

The 'macro'-moths include 10 Red Data species (recorded from 15 or fewer 10 km squares in Great Britain), 34 Nationally Notable species (16 – 100 10 km squares since January 1980) and another 120 with a local distribution (101 – 300 10 km squares since 1960). Only three of the Red Data species are considered to have been resident on the reserve and only one of these the Dingy Mocha *Cyclophora pendularia* has been recorded since 1988. The other Red Data species were probably either strays from elsewhere in the neighbourhood (four) or immigrants from the Continent (three). The Nationally Notable species include two Biodiversity Action Plan Priority (BAP) species that are probably extinct on the reserve, eight strays and one immigrant. One of the local species is assumed to have been a stray. The 'micros' included eight potential Red Data and 27 Nationally Notable species. One of the potential Red Data and two Notable species were probably immigrants. The Silver-studded Blue *Plebeius argus* is the only Nationally Notable butterfly at Arne but is also a Biodiversity Action Plan Priority (BAP) species along with the Dingy Mocha.

Heathland species

With heathland the predominant habitat on the Arne reserve it is not surprising that heathland Lepidoptera are well represented. Among the 34 species that are more specifically associated with the habitat four have Red Data status.

The Dingy Mocha *Cyclophora pendularia*, is confined in Britain to southeast Dorset and west Hampshire. At Arne it occurred at mv light traps in late July and August in seven years between 1977 and 2000, all singles except three in 1991. The main larval food at Arne is likely to be Grey Sallow *Salix cinerea* which grows in wetter parts of the reserve. It has occurred at the nearby RSPB Stoborough Heath reserve as recently as 2004.

The endemic race of the Speckled Footman *Coscinia cribraria* ssp. *bivittata* has hardly been recorded outside the heaths of southeast Dorset and the New Forest. It has greatly declined since the 1970s and is now only found in small numbers in Dorset. At Arne there are records for 20 adults on five dates between 30 June and 24 August, 1971 – 1983. Bristle Bent *Agrostis curtisii* may be the main larval food-plant. This grass is characteristic of dry heath in south and southwest England. It is locally abundant at Arne and on nearby Stoborough Heath, and may become temporarily dominant after a burn. Indeed the last occurrences at Arne coincided with a spate of captures (more than 120 individuals) one km off the reserve on Slepe Heath, following a major fire on Hartland Moor in 1976.

The current distribution of the Shoulder-striped Clover *Heliothis maritima* ssp. *warnecke* is limited to heaths of Surrey, the New Forest and Dorset. It is associated with wetter areas where its main larval food-plant Cross-leaved Heath *Erica tetralix* grows. It would, however, not be surprising if the larvae also fed on Dorset Heath *E. ciliaris* which is locally abundant along with the hybrid with *E. tetralix* on heaths in Dorset. The only Arne record is from Slepe Heath on 10 July 1983 by Rev. S. Pittis.

The Large Bagworm *Pachythelia villosella* is a psychid which is also restricted, like the Speckled Footman, to dry heathland in east Dorset and the New Forest. The larval cases were found on Grip Heath (SY 976875) in six years between 1992 and 2000, in the course of a survey of Smooth Snakes *Coronella austriaca*. On the reserve, Grip Heath has some of the oldest stands of mature heather that has not been burnt for many years. Another heathland psychid *Sterropterix fusca* (Nb) also occurs at Arne.

The botanical interest of the Purbeck Heath mires is considerable. This habitat at Arne also supports a potential Red Data 'micro' *Crambus silvella*; four Nationally Notable 'macro'-moths, the Small Grass Emerald *Chlorissa viridata* (Na), Rosy Wave *Scopula emutaria* (also occurs on saltmarsh), Purple-bordered Gold *Idaea muricata*, and the dimutive Marsh Oblique-barred *Hyphenodes humidalis* (that is easily mistaken for a 'micro'), and the Silver-studded Blue Butterfly *Plebeius argus* (NB, BAP Priority). This butterfly is widespread on the reserve. Forty of the 63 colonies surveyed by Julie Walker in 1999 were associated with wet or damp heath where the larval food-plant Cross-leaved Heath was growing (Cadbury *et al* 2001). The larval food-plant of the Purple-bordered Gold is normally Marsh Cinquefoil *Potentilla palustris* which is very scarce at Arne. The Marbled White-spot *Protodeltote pygarga* can be plentiful at Arne where its larval food-plant is probably Purple Moor-grass *Molinia caerulea*. The Red Data plume moth *Buckleria paludum* Pterophoridae with a larva that feeds on Round-leaved Sundew *Drosera rotundifolia* has been recorded at Arne. Another even rarer plume *Stenoptilia pneumonanthes*, the larva of which feeds on Marsh Gentian *Gentiana pneumonanthe*, has not been found at Arne nor at nearby Stoborough Heath where the gentian is more frequent. Indeed there are no recent records in Britain for this moth.

One of the most abundant moths on the dry heathland at Arne is the inappropriately named Horse Chestnut *Pachycnemia hippocastanaria* (Nb). It readily comes to light throughout the year, even in January and December. (Pickess 2005) Three noctuids, True-lover's Knot *Lycophotia porphyrea*, Neglected Rustic *Xestia castanea* (local) and Heath Rustic X. *agathina* (local) and the Narrow-winged Pug *Eupithecia nanata* with larvae that feed on heathers *Calluna* and *Erica* can also be abundant at Arne. The Scarce Footman *Eilema complana* (local) is another moth that is abundant on the reserve. Its larvae feed on lichens, probably those growing on the ground. Three geometers, the Bordered Grey *Selidosema brunnearia* ssp. *scandinaviaria* (Na), Grey Scalloped Bar *Dyscia fagaria* (local) and Grass Wave *Perconia strigillaria* (local) all have heather feeding larvae. The adults are easily disturbed by day and have been recorded at Arne in small numbers. The heaths in Dorset and the New Forest are strongholds of the Ringed Carpet *Cleora cinctaria* (Na). Small numbers have been recorded at Arne in May, but not every year (probably because of sporadic trapping in that month). It was also recorded at Stoborough Heath nearby in 2000 and 2006. The Dotted Border Wave *Idaea sylvestraria* (Nb) is essentially a southern heathland species. Up to 20 individuals were trapped almost annually at Arne. The Dark Tussock *Dicallomera fascelina* (local) was frequent in some years, particularly in the early 1970s. The larva of the pyralid *Pempelia genistella* (Na)

feeds on gorse *Ulex europaeus* and *U. minor*. This moth which is largely restricted to heaths in southern England has been recorded at Arne since 1988 and at Stoborough Heath in 2007.

Woodland species

Since there is 44 ha of oak and birch woodland at Arne it is not surprising that at least 26 Nationally Notable and local species of 'macro'-moths associated with broad-leaved woodland are probably resident. The Festoon *Apoda limacodes* (Nb), Maiden's Blush *Cyclophora punctaria* (local), Marbled Pug *Eupithecia irriguata* (Nb), Great Prominent *Peridea anceps* (local), Oak Nycteoline *Nycteola revayana* (local) and the tortricid *Stophedra nitidana* (Nb) are among those for which Pedunculate Oak *Quercus robur* is the main larval food-plant. The Festoon was recorded at light almost annually. The Maiden's Blush was sometimes abundant as in 1984 when 217 were trapped. The Great Oak Beauty *Hypomecis roboraria* (Nb) has only been recorded in 1995 and again in 2005. The Birch Mocha *Cyclophora albipunctata*, Scarce Prominent *Odontosia carmelita* and The Suspected *Parastichtis suspecta* are all local species particularly associated with birch. The double-brooded Birch Mocha was frequent on the reserve, particularly during the mid-1990s. At Arne there are only a few planted trees of Beech *Fagus sylvatica*, the larval food-plant of the Clay Triple-lines *Cyclophora linearia* (local), yet the moth was recorded in small numbers most years. The Sycamore *Acronicta aceris* (local), with Sycamore *Acer pseudoplatanus* its main larval food-plant, occurred almost annually in small numbers. Adults of the Dotted Chestnut *Conistra rubiginea* (Nb) overwinter but the six records at Arne have all been in spring, as were occurrences at Stoborough Heath in April 2006.

The larvae of the Brussels Lace *Cleorodes lichenaria*, Rosy Footman *Miltochrista miniata*, Orange Footman *Eilema sororcula*, Buff Footman *E. depressa* and Beautiful Hook-tip *Laspeyria flexula* (all nationally local) feed on lichens on trees and shrubs. The Rosy Footman was abundant at Arne, particularly in the mid-1980s and again in the mid-1990s. The Buff Footman was frequent, especially in the early 1990s. The Beautiful Hook-tip occurred almost annually and was frequent in the mid-1980s, but the Brussels Lace and Orange Footman were only occasional.

Reedbed and marshland species

There has been no trapping at reedbeds on the reserve, but a wide range of wainscots associated with the habitat have occurred at Arne. Striped *Mythimna pudorina*, Brown-veined *Archanara dissoluta*, Large *Rhizedra lutosa* and Fen *Arenostola phragmitidis* were recorded in small numbers almost annually. The Southern *M. straminea*, Obscure *M. obsoleta*, Bulrush *Nonagria typhae*, Twin-spotted *Archanara geminipuncta* and Silky *Chilodes maritima* were occasional. Webb's Wainscot *Archanara sparganii* (Nb) only occurred once (on 22 August 1992), and the Flame Wainscot *Mythimna flammea* (Na) twice (16 June 1984, 5 June 1985). The last is largely an East Anglian species but is resident in reedbeds around Poole Harbour, Dorset (P Davey, pers. comm.). Two Nationally Notable 'micros', *Cosmopterix lienigiella* Cosmopterigidae and *Brachmia inornatella* Gelechiidae with larvae that feed on reed *Phragmites australis* have been recorded at the reserve.

Other moths associated with marshy habitats that have occurred at Arne include the Dingy Footman *Eilema griseola* which was frequent; Scarlet Tiger *Callimorpha dominula* as a stray from the banks of the River Frome, but it may have bred near Salterns Pond on the reserve; Crescent *Celaena leucostigma*, only recorded once; Silver Hook *Deltote uncula*, and Cream-

bordered Green Pea *Earias clorana* (Nb) – both occasional. Of a sample of 601 Dingy Footmans scored between 1982 and 1995, 55% were the yellow form *stramineola*.

There is much saltmarsh around Poole Harbour. It is therefore not surprising that three 'macro'-moths associated with the habitat occur at Arne. The Rosy Wave *Scopula emutaria* was almost annual in small numbers (and as already mentioned may also be associated with heathland mires). Matthew's Wainscot *Mythimna favicolor* (Nb) was recorded in four years, and the Dog's Tooth *Lacanobia suasa* was occasional. The saltmarshes at Arne also support two Nationally Notable 'micros' *Coleophora adjunctella* (on Saltmarsh Rush *Juncus gerardii*) and *Bactra robustana* (on Sea Club-rush *Bolboschoenus maritimus*).

Strays and immigrants

Eleven nationally rare and scarce 'macro' moths have occurred as strays from habitats that do not occur at Arne but are present not far away elsewhere in Dorset. They include species that have wandered from the coast. Sand Dart *Agrotis ripae*, Portland Moth *Actebia praecox* and Shore Wainscot *Mythimna litoralis* are Nationally Notable moths of sandy shores. The pyralid *Mecyna asinalis* (Nb) with a larva that feeds on Wild Madder *Rubia peregrina*; Light Feathered Rustic *Agrotis cinerea* (Nb); Bordered Gothic *Heliophobus reticulata* (p RDB) – a dark specimen like ssp. *hibernica* captured on 2 July 1987; White Spot *Hadena albimacula* (RDB) in 1970 and on 21 September 1988, Beautiful Gothic *Leucochlaena oditis* (RDB) on 2 October 1987; Feathered Brindle *Aporophylla australis* (Nb), and Chalkhill Blue *Lysandra coridon* had probably strayed from the chalk and limestone downland and cliffs. In view of the near absence of their normal larval food-plant on the reserve, the Mocha *Cyclophora annularia* (Nb), (Field Maple *Acer campestre*) - recorded twice, and Little Thorn *Cepphis advenaria* (Nb) (Bilberry *Vaccinium myrtillus* is very scarce at Arne) – one, 1970 are likely to have been wanderers.

The Lunar Yellow Underwing *Noctua orbona* (Nb, BAP Priority) has only been recorded twice (1987 and 1990), but a population may still exist in Dorset. The single occurrence of the Light Crimson Underwing *Catocala promissa* (RDB, BAP Priority), on 4 August 1978, may likewise have been a wanderer.

Since there have been only two occurrences (1988 and 1992) of the Small Pearl-bordered Fritillary *Boloria selene* at Arne they were probably strays, perhaps from a colony on the downs north of Swanage (Thomas & Webb 1984). This butterfly has undergone a major decline in Dorset.

Fourteen species are presumed immigrants from the Continent. They include the pyralid *Palpita unionalis* (recorded in five years between 1972 and 1995), the Vestal *Rhodometra sacraria* (eight years, notably 1983 when 56 individuals were recorded), the Gem *Orthonama obstipata* (eight years), Convolvulus Hawk-moth *Agrius convolvuli* (four years, plus three individuals at nearby Stoborough Heath in 2003), the Delicate *Mythimna vitellina* (five years), White-speck *M. unipuncta* (1978 and 1990), Golden Twin-spot *Chrysodeixis chalcites* (30 September 1983), Ni Moth *Trichoplusia ni* (17 September 1982) and Clouded Yellow *Colias croceus* (including 110 individuals in 1983).

There are several species which have occurred presumably as immigrants at Arne well outside their restricted breeding range in Britain. They include the pyralids *Cynaeda dentalis* (p. RDB, Dungeness, Kent and possibly Portland, Dorset) and *Sitochroa palealis* (Nb,

particularly, Breckland and Thames Estuary but becoming more widespread); Sub-angled Wave *Scopula nigropunctata* (RDB, Folkestone, Kent; Arne, 26 July 1995); Dotted Footman *Pelosia muscerda* (RDB, Norfolk Broads; Arne, 8 August 1983); Angle-striped Sallow *Enargia paleacea* (Nb, Scottish Highlands, Yorkshire and Midlands; Arne 18 July 1982) and Marbled Clover *Heliothis viriplaca* (RDB, Breckland in Norfolk and Suffolk and Suffolk Coast; Arne, 1 August 1995).

The Four-spotted Footman *Lithosia quadra* was recorded at Arne in five years between 1972 and 1995 and may have temporarily colonized the neighbourhood in the 1980s. The White-point *Mythimna albipuncta* (six years, plus seven individuals at Stoborough Heath in 2003) and L – album Wainscot *M. l – album* (most years) may not breed on the reserve but have fairly recently colonized the South Coast.

Changes in status

Extinctions

Four moths and a butterfly that were assumed to be resident at Arne have not been recorded there recently and appear to be extinct. The Speckled Footman was last recorded in 1983; and the Sword-grass *Xylena exsoleta* (Nb, BAP) had not been seen on the reserve since 1972. Though the Broad-bordered Bee Hawk-moth *Hemaris fuciformis* (NG) persists at Arne, the Narrow-bordered Bee Hawk-moth *H. tityus* (Nb, BAP Priority) has, not been recorded since 1982 when several larvae were collected from Devil's-bit Scabious *Succisa pratensis* by a lepidopterist beside the road to Arne. The Common Fan-foot *Pechipogo strigilata* (Na, BAP Priority) was recorded in four years 1970 – 1977, with nine individuals in 1973. There has been none subsequently. There was a breeding colony of the Dark Green Fritillary *Argynnis aglaja* on Cleaves Island at the south end of the reserve until 1976 when drought apparently caused the population's extinction.

Decreases

At least three moths and two butterflies were subject to a decrease at Arne over the 1972 – 1995 period. The Four-dotted Footman *Cybosia mesomella* (local) was abundant in the early 1970s with annual catches of 244 - 630 individuals, frequent in the 1980s but from 1990 until 1995 the annual catch dropped to only 5 – 15. The Beautiful Yellow Underwing *Anarta myrtilli* being a day-flying species does not come readily to light, yet catches declined from 46, 15, 20 and 11 in 1972, 1974, 1982 and 1983 respectively to no more than two (and in four years nil) between 1984 and 1995. Numbers of the Beautiful Hook-tip *Laspeyria flexula* having been scarce in the 1970s, increased in the 1980s (16 to 27 in a year, 1983 – 1987), and then declined again to below seven a year, 1988 – 1995. The Dotted Border Wave *Idaea sylvestraria* (Nb) has apparently declined at Arne since the 1970s. There were many records of the White Admiral *Limenitis camilla* in 1977 (10 individuals) and during the 1980s annually, with 12 and 16 recorded in 1985 and 1986 respectively. However, during the 10 years 1990 – 1999 there was none. This is in contrast with the national trend of an increase since the 1980s (Asher *et al* 2001). The Silver-washed Fritillary *Argynnis paphia* was recorded annually in small numbers at Arne throughout the 1970s and 1980s, but since 1991 it has been rare on the reserve.

Increases

Seven moths and a butterfly showed an increase at Arne between 1972 and 1995. While the Sharp-angled Peacock *Macaria alternata* was frequent at Arne throughout the period there were only two records of the Peacock *M. notata* in the 1980s. However, from 1991 *notata* was recorded annually with 39 individuals in 1994 and 29 in 1995. The Rosy Footman *Miltochrista miniata*, with a larva that feeds on lichens on trees, was one of the most abundant moths at Arne in July and August. Over one hundred were trapped annually from 1982 with more than two hundred in 1983 and 1984. In 1993, 1994 and 1995, however, numbers increased from 278, 398 to 462 respectively. The Heath Rustic *Xestia agathina* was scarce throughout the 1970s and 1980s, but then suddenly became abundant in 1990 (a total of 403) and 1991 (621). Though such high numbers were not attained again, it remained frequent at least until 1995. Other species showed temporary increases: Pine Hawk-moth *Hyloicus pinastri* (1983 and 1984), Dingy Footman *Eilema griseola* (1982 – 1984), Scarce Footman *E. complana* (1990 – 1992) and Marble White Spot *Protodeltote pygarga* (1984 – 1986).

The Brown-tail *Euproctis chrysorrhoea* has been spreading nationally, but still mainly occurs near the south and southeast coasts of England. It was first recorded at Arne in 1983, again in 1985 and then annually from 1990 until 1995 (when 16 were trapped) with the exception of 1993. Blair's Shoulder Knot *Lithophane leautieri* and Cypress Pug *Eupithecia phoeniceata* are both recent colonists associated with planted cypresses, particularly Monterey Cypress *Cupressus macrocarpa*. Blair's Shoulder Knot emerges in October and early November but does not overwinter as is the case for three other *Lithophane* species. This moth has spread widely and is now common over much of southern Britain. It was first recorded at Arne in 1977 and by 1990 was plentiful with 88 individuals caught that year. The Cypress Pug was first recorded at Arne in 1982, though it was undoubtedly established in Dorset much earlier. Since that year small numbers were recorded almost annually, with 13 in 1995.

The Marbled White *Melanargia galathea* is associated with rough grassland throughout Dorset, particularly the chalk and limestone hills and along the coast. In the 1980s there were strong populations on Cleaves Island near the south of the Arne reserve (with up to 100 adults in a day in 1982) and in a grassy field near the Arne road (50 in 1984). This butterfly has been increasing nationally (Asher *et al* 2001).

Conservation priorities

The retention of the Dingy Mocha *Cyclophora pendularia*, a BAP Priority, and the Large Bagworm *Pachythelia villosella*, another Red Data species, that have existing populations at Arne must be high priorities. There is no certainty that the Speckled Footman *Coscinia cribraria* is indeed extinct at Arne. A concerted search for both adults (mid July and August) and larvae (spring) in areas where Bristle Bent *Agrostis curtisii*, the suspected larval food-plant, grows is recommended. The search for both Speckled Footman and Dingy Mocha should be extended to Stoborough Heath where the habitats for both species may be more favourable than at Arne. A British Entomological and Natural History Society and RSPB field meeting at Stoborough Heath on 31 July/1 August 2004 did produce an adult Dingy Mocha but failed to find the Speckled Footman at mv light traps set among a large stand of Bristle Bent.

Grazing by cattle at Arne and ponies at Stoborough Heath was reinstated primarily for the benefit of the plants in the mires, but has probably on balance been favourable for many

insects such as the Silver-studded Blue *Plebeius argus*. On the other hand, browsing by several hundred Sika Deer *Cervus nippon* has had a serious effect on shrubs, particularly Grey Sallow *Salix cinerea* and young birches *Betula* species in the damper heathland. This could have had an impact on the Dingy Mocha, the larva of which feeds on small bushes of the willow, and such moths as the Ringed Carpet *Cleora cinctaria*, (Na), Birch Mocha *Cyclophora albipuncta* and Suspected *Parastictis suspecta*, both local species, with larvae that feed on birch. Moreover the scattered willows and birches on the heathland are an important source of caterpillars for breeding Dartford Warblers *Sylvia undata*. Measures to reduce the Sika population are being implemented.

The Large Bagworm is associated with the older stands of Heather *Calluna vulgaris* which have not been burnt or cut for over 25 years. Such habitat is a scarce resource in general on lowland heaths, but quite large blocks exist at Arne where 'accidental' burning has been minimal. On the other hand, it is possible that the disappearance of the Speckled Footman could be linked to a lack of burning. Its supposed food-plant Bristle Bent thrives for short periods early in the vegetation succession on burnt dry heathland in southwest England. Strip or patch burning might therefore benefit this now very rare moth and probably other insects like the scarce tiger beetle *Cicindela sylvatica* which require bare sandy ground.

No clearwing moths Sesiidae have been recorded at Arne. Targeted searching of food-plants and the use of pheromones should demonstrate that at least some species are present, notably the Sallow *Synanthedon flaviventris* (Nb) and Large Red-belted Clearwing *S. culiciformis* (Nb) on birch.

The lepidoptera fauna at Arne will undoubtedly continue to change, particularly in response to climate change. New species will become established in southern Britain. If the trend for warm dry summers becomes an established pattern, mires will tend to dry out and change floristically. This could have a detrimental effect on some of the more important Lepidoptera of Dorset heaths.

Acknowledgements

We gratefully acknowledge the Dorset Environmental Records Centre, particularly Dr Phil Stirling for providing records of the Speckled Footman from Slepe Heath and the Arne reserve. Eric Bradford and Richard Dickson kindly identified many of the micro-moths.

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Table 1: Moth trap nights at Syldata, Arne nature reserve (SY 970877)

	Trap nights				Total
	Jan – March	April – June	July – Sept	Oct – Dec	
Rothamsted (tungsten bulb) 1970 – 77*	160	538	614	291	1603
			38.3%		
mv or blended bulb					
1977 – 78	20	80	269	72	441
1982 – 85	-	27	284	55	366
1986 – 88	-	48	177	24	249
1990 – 92	-	59	183	32	274
1993 – 95	-	106	214	43	363
	180	858	1741	517	3296
			66.6%		

1970 – 77 Rothamsted trap; 1974 – 95 with a Robinson trap and later a 'dustbin' adaptation.

No records available for 1976, 1979 – 81 and 1989.

Table 2:

Lepidoptera recorded at Arne nature reserve, Dorset. (largely 1972 – 95)

	Total	Red Data	Na	Nb	Local	Immigrants or strays	BAP Priority
'Micro'-moths	366	8 (potential)	3	24 (inc 3 strays)	?	4+ (inc 1 RDB)	
'Macro'- moths	430	7 (inc 4 strays)	5	29 (inc 5 strays)	120 (inc 1 stray)	16 (inc 3 RDB 1 Nb)	4 (inc 3 RDB 1 Nb)
Butterflies	34	-	-	1	7(inc 2 strays)	1	1
Total	831	15	8	54	127	21	5

Immigrants exclude species such as Painted Lady *Vanessa cardui* and Silver Y *Autographa gamma* which though they rarely overwinter in Britain more than one generation may be produced from immigrants.

Appendix

Lepidoptera recorded at the RSPB's Arne nature reserve 1972-95, very largely by Bryan P Pickess, plus a few subsequent records. Also records from nearby Stoborough Heath reserve, 2000-2007. The latter were largely by C. James Cadbury from mv light traps run at 64 Furzebrook Road, Stoborough (courtesy of Nick and Eileen Coke), SY 928848 adjacent to the heath. The records made at Stoborough in 2004 by the BENHS & RSPB field meeting came from various sites on the heath.

More detailed records of some (mostly the scarcer) species recorded. Most of the moth records were extracted from Bryan Pickess' light trap records from Syldata over the years 1972 – 95. *Species listed by Pickess but no trap records or dates. In the case of 'micros' these were specimens identified by Eric Bradford and Richard Dickson.

'Micro' – moths

Pachythelia villosella Large Bagworm, Psychidae (RDB2)

Larval food-plant: heathers *Calluna* and *Erica*. Restricted to east Dorset and the New Forest where it is associated with dry heaths. Vulnerable to fires. At Arne larval cases were found on Grip Heath (SY 976875), which has much mature heather, in six years in the 1990s: 1992 (2 cases), 1994 (1), 1997 (1), 1998 (1), 1999 (2) and 2000 (3). These cases were found by Bryan Pickess in the course of a study of smooth snakes *Coronella austriaca*.

**Sterropterix fusca* a bagworm, Psychidae (Nb)

Larval food-plants: grasses, heather, deciduous trees. Recorded at Arne since 1988.

**Morphaga choragella* Tineidae (Nb)

Larvae feed on bracket fungi. Recorded at Arne since 1988.

**Yponomeuta rorrella* Willow Ermine Yponomeutidae (p RDB3)

Larval food-plants: willows *Salix alba*, occasionally *S. cinerea*.

**Coleophora conyzae* a case-bearer Coleophoridae (Nb)

Larval food-plants: ploughman's spikenard *Inula conyza* and marsh fleabane *Pulicaria dysenterica*.

**C. inulae* (Nb)

Larval food-plants: marsh fleabane and ploughman's spikenard.

* *C. lassella* (Nb) suspected immigrant.

**C. adjunctella* (Nb)

Larval food-plant: saltmarsh rush *Juncus gerardii* on saltmarsh.

**Depressaria discipunctella* Oecophoridae (p RDB1)

Larval food-plants: flowers and fruit of umbellifers, *Heracleum*, *Pastinaca* and *Angelica*.

Though recorded from several southern counties in the latter half of the 19th century, there have been no British records since 1924. (Emmet & Langmaid eds. 2002). The Arne record must therefore be treated with caution.

**Monochroa lucidella* Gelechiidae (Nb)

Larval food-plant: common spike-rush *Eleocharis palustris* (stem) in marshes.

**M. suffusella* (Nb)

Larval food –plant: unknown. Marshes.

**Scrobipalpa artemisiella* Thyme Moth Gelechiidae (Nb)

Larval food-plant: thyme *Thymus praecox*. Heathland and coastal.

**Brachmia inornatella* Gelechiidae (Nb)

Larval food-plant: stem of reed *Phragmites*.

**Batrachedra pinicolella* Momphidae (Nb)

Larval food-plant: Norway spruce *Picea abies* and Scots pine *Pinus sylvestris*.

**Cosmopterix lienigiella* Cosmopterigidae (Na)

Larval food-plant: reed *Phragmites*.

**Pancoia leuwenhoekella* Cosmopterigidae (Nb)

Larval food-plant: hairy violet *Viola hirta*. Dry grassland and downland. Stray at Arne?

**Archips oporana* Tortricidae (p RDB?)

Larval food-plants: pines and other conifers. Seen regularly in plantations in southern England recently.

**Bactra robustana* Tortricidae (Nb)

Larval food-plant: sea clubrush *Bolboschoenus maritimus* (stem). Saltmarsh.

**Eucosmomorpha albersana* Tortricidae (Nb)

Larval food-plant: honeysuckle *Lonicera periclymenum*.

**Strophedra nitidana* Tortricidae (Nb)

Larval food-plant: oaks.

Crambus silvella Pyralidae (p RDB3)

Larval food-plants: sedges *Carex* spp. Local on boggy heathland in Surrey, Hants, Dorset and Norfolk. At Arne locally frequent in mires. Recorded in 1972 (4, 12 & 14.7); 1993 Coombe Heath, Compt 17, SY970873, 19.8; edge of saltmarsh, Compt 15, 980875; and Grip Heath, Compt 12, 975977); 1975 (several Coombe Heath, Compt 17, 970873, 23.6, at least 10 individuals in very wet area to northeast of the Blue Pool, Compt 19, 968873, 21.7); 1999 (northeast of the Blue Pool, 15 individuals, 6.8 and at least 25 individuals, 7.8). Twenty-two adults were recorded in the vicinity of a mire on Stoborough Heath 30 July – 1 August 2004 (BENHS & RSPB field meeting).

**C. uliginosellus* (Nb)

Larval food-plant: possibly deer-grass *Trichophorum cespitosum*. Very local in wet bogs England and Wales with a few records in Scotland.

**C. hamella* (Nb)

Larval food-plant: stem bases of grasses such as Wavy hair-grass *Deschampsia flexuosa*. Dry heathland extending north to southern Scotland. Recorded at Arne since 1988, but *Deschampsia flexuosa* absent.

**C. pratella* (Nb)

Larval food-plant: stem bases of grasses especially *Deschampsia* spp. Dry sandy places north to Inverness.

**Cynaeda dentalis* Pyralidae (p RDB3; probably immigrant at Arne)

Larval food-plant: viper's bugloss *Echium vulgare*. Resident at Dungeness where it is frequent; fairly regularly recorded on Portland Bill.

Evergestis extimalis Pyralidae (immigrant)

Not recorded at Arne. One fresh specimen at mv light in garden of 64 Furzebrook Road, bordering Stoborough Heath, 27/28 August 2003.

**Sitochroa palealis* Pyralidae (Nb or immigrant as at Arne)

Larval food-plants: flowers and fruits of wild carrot *Daucus carota* and fennel *Foeniculum*. Locally common in Breckland (Norfolk and Suffolk) and in chalk quarries on Thames estuary. Probable immigrant at Arne.

Chilo phragmitella Pyralidae

Larval food-plants: stem and rootstock of reed *Phragmites* and reed sweet-grass *Glyceria maxima*. Characteristic of large reedbeds. Recorded at light trap, Arne.

**Calamatropha paludella* Pyralidae (Nb)

Larval food-plants: reed maces, mostly *Typha latifolia* (mines leaf in late summer and autumn; in dead leaf or stem in spring). Very local in Dorset, Hants, Isle of Wight, Kent (Dungeness), Herts (Rye Meads) and East Anglia. Wet marshes. Recorded at Arne since 1988.

**Paratalanta (Microstega) pandalis* Bordered Pearl Pyralidae (Na)

Larval food-plant: wood sage *Teucrium scorodonia*, marjoram *Origanum*, golden rod *Solidago*.

**Anania verbascalis* Pyralidae (Nb)

Larval food-plant: wood sage *Teucrium scorodonia*, local in England southeast of a line between Lincolnshire and Devon. Recorded at Arne since 1988.

**Mecyna asinalis* Pyralidae (Nb) Probable stray at Arne.

Larval food-plant: wild madder *Rubia peregrina* Chiefly western and coastal following the distribution of *Rubia*. Since the food-plant does not grow at Arne, the moth is probably a stray from nearer the coast.

Palpita unionalis Pyralidae (immigrant)

An uncommon immigrant mostly along the south coast of England. At Arne a scarce late autumn immigrant and not annually 1977 (3, 18-22.10), 1978 (2, 11 & 27.10), 1982 (1, 15.9), 1983 (1, 26.10), 1995 (4, 25 & 26.10).

**Synaphe punctalis* Pyralidae (Nb)

Larval food-plants: terrestrial mosses such as *Hypnum cupressiforme* a moss among which it spins silken galleries. Frequent near the coast in southern England and inland in Breckland (Norfolk and Suffolk), and the Lower Greensand ridge in Bedfordshire (including the RSPB's Lodge reserve). Recorded at Arne in 1973, 1994 and 1995, and at Stoborough Heath in 2004 (BENHS & RSPB field meeting).

**Oncocera semirubella* Pyralidae (Nb). Possibly stray at Arne

Larval food-plants: bird's-foot trefoil *Lotus corniculatus* and white clover *Trifolium repens*. Locally common on chalk and limestone downland and cliffs from Somerset, along the south coast to Kent and north to Norfolk. Recorded at Arne since 1988 and at Stoborough Heath in 2004 (BENHS and RSPB field meeting).

**Pempelia genistella* Pyralidae (Na)

Larval food-plants: gorses *Ulex europaeus* and *U. minor*. Very local on heaths in Kent (Dungeness), Sussex, Hampshire, Isle of Wight, Dorset and Wiltshire, mostly near the coast. Recorded at Arne since 1988. One adult at Stoborough Heath 2004 (31.7), (BENHS and RSPB field meeting), and two, 2007 (17 – 21.6) C. J. Cadbury.

**Buckleria paludum* A plume Pterophoridae (p RDB3)

Larval food-plant: leaves on round-leaved sundew *Drosera rotundifolia* on boggy heaths in southern England including Dorset north to Yorkshire and Cheshire. Green frass of larva on sundew leaves should be looked for in spring (March-May). Larva rests on stalk of a leaf. Adult flies at dusk or after dark in August.

(*Stenoptilia graphodactyla* (*pneumonanthes*) A plume Pterophoridae (p RDB2))

Larval food-plant: marsh gentian *Gentiana pneumonanthe* Formerly recorded from boggy heaths in east Dorset and Hampshire. Indeed the moth has not been recorded in Britain since the 1960s and may be extinct in this country. (P Stirling pers. comm.) Not recorded from Arne where the food-plant is restricted to the margin of the Arne road at the southwest end of the reserve. Nevertheless, the moth should be looked for on Stoborough Heath where the gentian is more frequent. The adult flies in the evening in July. The larvae, having hibernated over winter feed on shoots of the gentian in spring (April & May).

Adaina microdactyla A plume Pterophoridae

Larval food-plant: hemp agrimony *Eupatorium cannabinum*. At least three adults around young *Eupatorium*, Compt 4 1930 hrs 20.5.1997.

Butterflies

Pyrgus malvae Grizzled Skipper (local, new BAP Priority)

Larval food-plants: agrimony, creeping cinquefoil and wild strawberry. A single record at Arne, date unknown. B P Pickess.

Colias croceus Clouded Yellow (immigrant)

At Arne, 1983 was outstanding with at least 110 adults (mostly males) recorded (13.6 – 26.10), two each in 1982, 1984 and 1986. No records available for the 1990s.

Callophrys rubi Green Hairstreak (common)

Larval food-plants on heathland, gorse and broom. At Arne, abundant on Coombe Heath, Compt. 17 (SY 9787) in 1977.

Neozephyrus quercus Purple Hairstreak (common)

Larval food-plants: pedunculate and sessile oaks. At Arne locally frequent in the early 1980s. 40 – 50 adults in crowns of boundary oaks in evening sunlight, Compts 16, 17 and 91 SY 971876 – 974874, 26 & 27.7 1981. Occasional records in other years 1980 (1), 1985 (1), 1987 (2).

Plebeius argus Silver-studded Blue (Nb, BAP Priority)

Larval food-plants on heathland: *Calluna vulgaris*, *Erica cinerea*, *E. tetralix* (probably the main food at Arne) and grasses. On heathland, larvae closely associated with black ants *Lasius niger* and *L. alienus* (Asher *et al.* 2001). At Arne, widespread, mostly on wetter heathland. A survey of colonies in early August 1999 revealed 63 colonies.

	Grid ref.	Colonies	High density colonies (> 5/25m ²)
Arne Heath	SY 9687, 9688	13	6
Crichton's Heath	9788	14	5
Gold Point	9869	2 + 1	-
Shipstal Heath	9788,9888	6	3
Grip Heath	9787	1	-
Coombe Heath	9687, 9787	14	10
Bank Gate	9586	4	-
New Section	9586	8	2

13 colonies were on wet heath (with *Eriophorum*, *Narthecium* and *Drosera*), 27 on damp heath (with *Trichophorum cespitosum*) and 22 were on a dry heath (with *Calluna*). An additional colony at the Clay Pits near Gold Point (977894) was on damp grassland (with *Lotus corniculatus*, but no *Calluna* or *Erica*). Julie Walker (Cadbury *et al* 2001, Biodiversity Monitoring Project report for 1999).

Aricia agestis Brown Argus (common)

Food-plants: common rockrose on calcareous grassland, but in other habitats dove's-foot crane's-bill *Geranium molle* and Common stork's-bill *Erodium cicutarium*. A single record at Arne: 25.6 1987. B P Pickess.

Lysandra coridon Chalkhill Blue (local, stray at Arne)

Food-plant: horseshoe vetch *Hippocrepis comosa* on chalk and limestone grassland. At Arne, a stray from coastal limestone grassland. 1997 one Grip Heath (SY 977875), 22.7 1997 Dr A R Plant. Also unspecified record from Coombe Heath (SY 972875), 1966 – 71 Biological Records Centre.

Limenitis camilla White Admiral (local, new BAP Priority)

Food-plant: honeysuckle. Now more widespread in England than any previous known period. Since 1980s has spread into the West Midlands and East Anglia. By contrast, at Arne has undergone a severe decline since the late 1980s.

1975 (1)

1977 10 records Syldata, Compt 5 (SY 971877), Coombe Heath, Compt 17 (1987) and south edge of Coombe Heath, Compt 90 (976872)

1980s many records particularly 1985 and 1986, 1980 (4), 1981 (3), 1982 (2), 1983 (1), 1984 (5), 1985 (12), 1986 (16), 1988 (1), 1989 (1)

1990s no records 1990 – 1999.

Boloria selena Small Pearl-bordered Fritillary (local, new BAP Priority stray at Arne)

Larval food-plants: common dog-violet *Viola riviniana* and marsh violet *V. palustris*. At Arne occasional stray only. Two singles: Shipstal Marsh, Compt 10 (SY 9888) 28.5, 1988; near Big Wood, Compt 30 (SY 976887), 13.6 1992.

Argynnis aglaia Dark Green Fritillary (local)

Larval food-plants: mainly common dog-violet *Viola riviniana* but hairy violet *V. hirta* on calcareous grasslands. At Arne, formerly regular; now apparently extinct as a breeding species. A breeding colony on Cleaves Island at the south end of the reserve, Compt 22 (SY 967867) 1972 – 1976 when a drought killed the food-plant causing the population's extinction. Small numbers recorded elsewhere until 1991. 1973 (7), 1974 (3), 1975 (10), 1980 (1), 1982 (nil), 1983 (4), 1984 (10), 1985 (4), 1986 (4), 1987 (2), 1991 (5).

A. paphia Silver-washed Fritillary (local)

Larval food-plant: common dog-violet *Viola riviniana* in semi – shaded sites on woodland floor. At Arne almost annual in 1970s and 1980s; few records in 1990s. 1972 (6), 1974 (1, SY 9788 A H Dunn), 1975 (2), 1976 (1 + 6 in Arne village, 973883), 1977 (2), 1980 (1), 1983 (4), 1984 (10), 1985 (4), 1986 (4), 1987 (2), 1991 (5). Two of the female form *vallesina* were recorded in Arne village in 1976.

Melanargia galathea Marbled White (common in South)

Larval food-plant: mainly red fescue *Festuca rubra*, but probably other grasses. Widespread on rough grassland in Dorset. Has expanded its range northwards since the 1970s. At Arne, frequent on Cleaves Island, Compt 22 (SY 967867): 1981, 26+ (26.7), 30+ (3.8), 1982, 110 (14.7), 1992, up to 15. Also frequent in a field beside the road to Arne, Compt 24 (969876): 1982 (22), 1983 (25), 1984 (50), 198 (15). Recorded along the roadside to Arne in 1977.

Hipparchia semele Grayling (local, new BAP Priority)

Larval food-plants: various grasses particularly sheep's and red fescue *Festuca ovina* and *F. rubra* and bristle bent *Agrostis curtisii* on heaths in Southwest England. Widespread but usually not numerous on the drier heaths at Arne. Frequent on Arne Heath and elsewhere in 1990.

Aphantopus hyperantus Ringlet (common)

Larval food-plants: various coarse grasses including cock's foot *Dactylis glomerata* and false-brome *Brachypodium sylvaticum*. Occasional records only at Arne.

'Macro'-Moths

Hepialus hecta Gold Swift (local)

Larval food-plant: bracken. Only comes to light in small numbers. One trapped 1975 (16.7).

H. fusconebulosus Map-winged Swift (local)

Larval food-plant: usually bracken. Very local in Dorset. Two recorded at Arne. 1975 (16.7) and 1985 (5.7). One Stoborough Heath, 31.7.2004 (BENHS and RSPB field meeting).

Cossus cossus Goat Moth (Nb, new BAP Priority)

A single record at Arne where there is little suitable habitat. 1995 1 (6.7).

Apoda limacodes Festoon (Nb)

Larval food-plant: oak. At Arne, one 1972 and then from 1976 small numbers almost annually with maxima of 29 (1977) and 9 (1986, 1987 and 1990). Emergence 23.6 – 2.8. One Stoborough Heath, 2005 (18.7), and one 2007 (18.6).

Trichiura crataegi Pale Eggar (common, new BAP Priority)

Larval food-plants: mainly birches, Blackthorn and hawthorns. 1995, 4 (17 – 23.9).

Malacosoma neustria Lackey (common, new BAP Priority)

Food-plants: many broadleaved trees and shrubs, particularly Rosaceae. From 1970 recorded annually at Arne with the exception of 1975. Maxima 53 (1977), 16 (1986 & 1995), 13 (1982 & 1983), 11 (1988 & 1994). Emergence 3.7 – 25.8. No evidence of a marked decline as shown by Rothamsted Research Station's analysis of national trapping results.

**Drepana cultraria* Barred Hook-tip (local)

Larval food-plant: beech. A single record.

Tetheella fluctuosa Satin Lutestring (local)

Not recorded at Arne and rare in Dorset. One adult Stoborough Heath, 2004 (31.7/1.8). (BENHS and RSPB field meeting).

Polyphloca ridens Frosted Green (local)

Larval food-plant: oak. Apparently scarce at Arne. 1977 4 (20 & 22.4), but little trapping in April in the 1980s and 90s. Stoborough Heath, 2006, 6 (24 – 30.4).

Pseudoterpna pruinata Grass Emerald (common)

Larval food-plants: gorse and broom. A heathland species that is active in daylight. Small numbers annually at light at Arne. Maxima 32 (1977) and 9 (1974). Emergence 13.6 – 16.7. Over 70, Stoborough Heath, 30.7/1.8.2004 (BENHS and RSPB field meeting).

Comibaena bajularia Blotched Emerald (local)

Larval food-plant: oak. Small numbers recorded almost annually at Arne: Maxima 32 (1977), 14 (1971) and 9 (1974). Emergence 5.6 – 20.7.

Hemistola chrysoprasaria Small Emerald (local, new BAP Priority)

Food-plant: *Clematis*. Scarce at Arne with single records in 1983 (Rev. S Pittis), 1984 and 1994. Emergence 10 and 21.7.

Chlorissa viridata Small Grass Emerald (Na)

A damp heathland species. Larval food-plants include heathers, birches and gorse. Locally frequent New Forest; very local Dorset. Recorded at Arne in 1970 (3), 1971, 1972, 1974 (2), 1976 (2), 1977, 1983, 1984, 1985, 1988 (2) and 1994 (east of the Blue Pool SY 967871). Emergence 8.6 – 19.7.

Cyclophora pendularia Dingy Mocha (RDB3, BAP Priority)

Larval food-plant: *Salix cinerea*. Confined to southeast Dorset and west Hampshire. Apparently resident at Arne but only occasional at mv light traps. Recorded 1977 (1, 13.8), 1982 (1, 22.7), 1983 (1, 30.7), 1984 (1, 22.7), 1986 (1, 10.8), 1991 (3 on 4, 5 & 6.8) and 2000 (1, 8.8 at Work Centre SY 972878, P Brash). Emergence 22.7 – 13.8. Adults recorded on four occasions in a garden immediately adjacent to eastern margin of western part of Stoborough Heath (SY928849): 1.8 and 12.8.1983, 16.5.84 (all B Withers) and again 31.7/1.8.2004 (BENHS and RSPB field meeting)

C. annulata Mocha (Nb)

Larval food-plant: field maple. Only three single records at Arne where food plant is absent. 1971 (6.6), 1983 (10.7, Rev. S Pittis), 1991 (8.8).

C. albipunctata Birch Mocha (local)

Larval food-plant: birches. Frequent at Arne, particularly in mid 1980s. Maxima 154 (1983), 115 (1984), 103 (1986) and 82 (1985). Emergence 5.5 – 30.6 and 12.7 – 12.9 (two generations). Five Stoborough Heath, 30.7 – 1.8.2004 (BENHS and RSPB field meeting).

C. porata False Mocha (Nb, new BAP Priority)

Larval food-plant: pedunculate oak. A single late individual 1977 (20.9), perhaps an error, since second generation emergence usually August.

C. punctaria Maidens Blush (local)

Larval food-plant: oaks. Small numbers caught at Rothamsted trap in 1970s. At mv light trap frequent and sometimes abundant in the 1980s and early 1990s. Maximum numbers 217 (1984), 151 (1990), 119 (1991) and 93 (1986). Emergence 5.5 – 15.9 (two generations, with the main emergence in July and August). One Stoborough Heath, 30/31.7.2004 (BENHS and RSPB field meeting).

C. linearia Clay Triple-lines (local)

Larval food-plant: beech, of which there is little at Arne. Small numbers 1970, 1971, 1972, 1976 and 1982 – 1995. Maxima: 11 (1995), 5 (1971, 1984 and 1992) and 4 (1994). Emergence 3.6 – 25.8; a late individual 4.9. Also Stoborough Heath 2005, one (9.9) and 2007, one (17 – 21.6).

Scopula nigropunctata Sub-angled Wave (RDB1, immigrant)

Restricted as a resident to Folkestone Warren, Kent. Presumably an immigrant at Arne. 1995 one (26.7).

S. marginepunctata Mullein Wave (local, new BAP Priority)

Larval food-plants: various herbs. Small numbers most years at Arne 1971 – 1995. Maxima 24 (1990) and 21 (1985). Emergence 26.5 – 10.9. One Stoborough Heath 31.7.2004 (BENHS and RSPB field meeting).

S. emutaria Rosy Wave (Nb)

A species of coastal marshes and inland bogs in New Forest and Dorset. Occasional but almost annual at Arne. Recorded in 1972, 1974, 1975, 1976, 1982, 1983, 1985, 1986, 1988, 1992 (2) and 1994. Emergence 26.6 – 20.8. One Stoborough Heath, 30/31.7.2004 (BENHS and RSPB field meeting).

S. immutata Lesser Cream Wave (local)

A species of marshes and damp grassland. Food-plants include meadow sweet and common valerian. Apparently irregular at Arne. None at Rothamsted trap 1970 – 77. At mv light trap 1988, 2 (14 & 15.6), 1992, 11 (24.5 – 13.6). Emergence dates on the early side.

S. floslactata Cream Wave (local)

Larval food-plants include bedstraws. Small numbers most years at Arne. Maxima 27 (1970), 18 (1976), 17 (1987) 15 (1975) and 10 (1971 and 1993). Emergence 10.5 – 2.7.

Idaea muricata Purple-bordered Gold (Nb)

Larval food-plant: marsh cinquefoil *Potentilla palustris* in wet mires and marshes. Three records at Arne. 1982 (one on wet heath near the Triangle, Compt. 63, SY956865, 10.7; one in mv light trap, 13.7); 1986 (one at the edge of saltings, Compt. 67, 960866, 20.7). One netted on a mire, Stoborough Heath, SY 92768476, 31 July 2004 (BENHS and RSPB field meeting). Considering the scarcity of marsh-cinquefoil at Arne and Stoborough Heath an alternative food-plant possible.

I. rusticata Least Carpet (local)

Rapidly extending its range in Britain. At Arne two recorded in 1990 (21.7 & 16.9). Further records to be expected.

I. sylvestraria Dotted Border Wave (Nb)

A heathland species in southern England. Small numbers almost annually at Arne. Maxima: 66 (1970), 25 (1971), 20 (1992), 17 (1972), 13 (1977), 10 (1976 and 1986) and 7 (2000 at Workshop SY 972878, P Brash). Apparent decline since 1970s. Emergence 13.6 – 28.8. Two Stoborough Heath, 30.7 – 1.8.2004 (BENHS and RSPB field meeting); one, 2005 (18.7). C J Cadbury.

I. fuscovenosa Dwarf Cream Wave (local)

Frequent at Arne (though on acid heathland). Maxima 54 (1996), 33 (1986), 31 (1985), 26 (1995) and 22 (1976). Emergence 16.6 – 9.8. Only small numbers at the Rothamsted trap in 1970s. Four, Stoborough Heath, 30.7 – 1.8.2004 (BENHS and RSPB field meeting); two, 17 – 21.6.2007.

I. trigeminata Treble Brown Spot (local)

At the Rothamsted trap 1970 – 77 only recorded in three years with a maximum of 11 (1977). Frequent in the 1980s and early 1990s at mv light. Maxima: 38 (1986), 31 (1988), 26 (1987) and 25 (1992). Emergence 6.6 – 23.7. Three Stoborough Heath 30.7 – 1.8.2004 (BENHS and RSPB field meeting); three, 2005 (18.7). C J Cadbury.

I. emarginata Small Scallop (local)

Larval food-plants: bedstraws. Small numbers almost annually at Arne. Maxima: 26 (1970), 15 (1974), 14 (1995) 9 (1972 and 1976) and 7 (1975 and 1986). Emergence 3.7 – 19.8. One, Stoborough Heath 31.7.2004 (BENHS and RSPB field meeting).

I. straminata Plain Wave (local)

Fairly frequent at Arne at least in the 1990s. Maxima: 28 (1991), 23 (1992) 22 (1995) and 20 (1971). Emergence 18.6 – 19.8. Five adults, Stoborough Heath 30.7 – 1.8.2004 (BENHS and RSPB field meeting).

Rhodometra sacraria Vestal (immigrant)

Recorded at Arne in 1978 (5), 1983(56, 22.7 – 4.10), 1985 (2), 1987 (15), 1988 (1), 1990 (1), 1994 (5), 1995 (10). Mostly late September and October (range 22.7 – 26.10).

Orthonama vittata Oblique Carpet (local, new BAP Priority)

Marshes and fens. Larval food-plants, bedstraws. Occasional at Arne: 1974 (1, 26.6), 1993 (1, 21.8, K Cooper).

O. obstipata Gem (immigrant)

Occasional at Arne. Recorded in 1978 (2), 1983, 1985, 1988, 1993,1994,1995 and 1998 (one each). Dates 19.7 – 10.11.

Mesoleuca albicillata Beautiful Carpet (common)

Larval food-plants, *Rubus* spp. Five records at Arne: 1970 (6.7), 1971 (9.7), 1976 (25.6), 1983 (15.7) and 1993 (8.7).

**Lampropteryx otregiata* Devon Carpet (Nb)

Larval food-plant, marsh bedstraw. A single record since 1988.

Eulithis prunata Phoenix (common)

Larval food-plants: currants and gooseberry. Uncommon at Arne: 1983 (4, 10 –12.8); 1990 (1, 17.7), probably due to lack of food-plants. One adult Stoborough Heath, 30/31 July 2004. (BENHS and RSPB field meeting).

Chloroclysta miata Autumn Green Carpet (local)

Larval food-plants: broadleaved trees including willow and birches. Overwinters as adult. At Arne only recorded in 1993 (9 over 8 dates, 12.5 – 10.6, a surprising late date). Error?

Thera britannica Spruce Carpet (common)

Larval food-plants: various conifers. Small numbers at Arne. Recorded in 1982, 1984, 1985, 1987, 1988 and 1994. Maxima : 9 (1985); 3 (1994). Emergence 22.6 – 23.10.

Hydriomena impluviata May Highflyer (common)

Larval food-plant: alder. One record at Arne: 1993 (10.6). Food plant scarce on the reserve.

Hydriomena ruberata Ruddy Highflyer (local)

Larval food-plants: willows. One record at Arne 1983 (23.5) Rev. S Pittis.

(*Thera cypressata* Cypress Carpet (uncommon))

Larval food-plant Monterey Cypress. Not recorded in mainland Britain until 1984. Yet to be recorded at Arne. One adult in garden adjacent to Stoborough Heath SY 928848. 20.6.2006. C. J. Cadbury.

Horisme vitalbata Small Waved Umber (common)

Larval food-plant: *Clematis vitalba*. Three records at Arne. Singles in 1970 (8.6), 1971 (19.8) and 1992 (13.6). Food-plant absent from the reserve. One Stoborough Heath 30/31.7.2004 (BENHS and RSPB field meeting).

Rheumaptera undulata Scallop Shell (local)

Larval food-plants: willows, aspen, bilberry (but not at Arne). Small numbers at Arne almost annually. Maxima: 6 (1977 & 1987); 5 (1972, 1985 & 1988). Emergence 5.7 – 12.9. Two adults Stoborough Heath 30/31.7.2004 (BENHS and RSPB field meeting).

Euphyia biangulata Cloaked Carpet (Nb)

Larval food-plants: stitchworts *Stellaria holostea* and *S. graminea*. A single record at Arne 2000 (29.7) at Work Centre SY 972878. P Brash.

E. unangulata Sharp-angled Carpet (local)

Larval food-plants: unknown. Small numbers almost annually at Arne. Maxima 24 (1990), 20 (1992), 18 (1977); otherwise below 10. None in Rothamsted trap 1973 and 1976. Emergence 11.6 – 28.8.

Perizoma bifasciata Barred Rivulet (local)

Larval food-plants: ripening fruit of red bartsia *Odontites verna*. Two records at Arne: 1971 (18.8) and 1995 (9.8).

P. albulata Grass Rivulet (local, new BAP Priority)

Larval food-plant: seed capsules of Yellow Rattle *Rhinanthus minor*. Mostly calcareous and coastal grassland. At Arne only recorded in 1970 5 (28.6).

Eupithecia irriguata Marbled Pug (Nb)

Larval food-plant: oak.

Scarce at Arne. 1977 1(19.5); 1987 2(25 & 26.5).

E. intricata ssp. *arceuthata* Freyer's Pug (common)

Larval food-plants: junipers, cypresses (*Cupressus* and *Chamaecyparis*) in gardens etc. At Arne only recorded in 1992 (7.8 & 22.8).

E. expallidata Bleached Pug (Nb)

Larval food-plant: flowers of golden-rod *Solidago virgaurea*.

A single record at Arne: 1994 (12.7). Food-plant scarce on the reserve.

E. tripunctaria White-spotted Pug (local)

Larval food-plants: elder (first generation) and developing fruits of *Angelica* (second generation). Scarce at Arne: 1986,1 (17.8); 1990, 4 (18 – 29.7). One adult, Stoborough Heath 31.7/1.8.2004 (BENHS and RSPB field meeting).

E. phoeniceata Cypress Pug (uncommon)

Larval food-plant: Monterey cypress. At Arne first recorded in 1982 (7.9). Small numbers subsequently 1983 (2), 1988 (2), 1990 (2), 1991 (2), 1994 (1), 1995 (13) and 2005 (1).

Emergence 3.8 – 15.9.

**E. simplicata* Plain Pug (local)

Larval food-plants: goose foots *Chenopodium* and oraches *Atriplex*. Listed by BPP.

E. dodoneata Oak-tree Pug (common)

Larval food-plant: mainly the calyx of hawthorn berries. A single record at Arne: 1994 (30.6). A late record (main emergence April – June).

E. tantillaria Dwarf Pug (common)

Larval food-plants: conifers particularly Norway Spruce. Only two records at Arne: 1993 (21.5) and 1994 (14.8) but the late date of the latter appears to rule out this species which emerges in May and June.

Chesias legatella The Streak (common, new BAP Priority)

Larval food-plant: broom. Emergence late autumn. Small numbers at Arne: 1970 (1), 1973 (1), 1975 (1), 1977 (3), 1978 (4), 1991 (2) and 1995 (1). Emergence 6.10 – 7.11.

Euchoeca nebulata Dingy Shell (local)

Larval food-plant: alder. A single record for Arne, 1970 (20.6).

Asthenes albulata Small White Wave (common)

Larval food-plants: hazel, hornbeam, birches and wild roses. Occasionally recorded at Arne: 1993 (20.5) and 1995 (9.5), but this may reflect its mainly day-flying habit.

Lobophora halterata Seraphim (local)

Larval food-plants: aspen and black poplar, but these are absent from the reserve. A single record at Arne 1976 (6.6).

Pterapherapteryx sexalata Small Seraphim (local)

Larval food-plants: willows. Small numbers almost annually at Arne. Maxima 12 (1970 and 1988), 11 (1973), 10 (1971 and 1987), 9 (1976), 8 (1984). Emergence 13.6 – 13.8.

10+ adults, Stoborough Heath 30.7 – 1.8.2004 (BENHS and RSPB field meeting), two, 17 – 21.6.2007..

Acasis viretata Yellow-barred Brindle (local)

Larval food-plant: holly, ivy, wild privet and dogwood. The only records at Arne have been one in 1973 (6.7); three in 1974 (22 & 28.6)

Ligdia adustata Scorched Carpet (local)

Larval food-plant: spindle *Euonymus europaeus*. Occasional at Arne. 1984, 2 (12 & 13.8); 1993, 1 (4.8).

Macaria notata Peacock Moth (local)

Larval food-plant: birch. Small numbers at Arne, but signs of an increase in the 1990s. Maxima 39 (1994), 29 (1995). Emergence 28.6 – 27.8. 14 adults Stoborough Heath 30.7 – 1.8.2004 (BENHS and RSPB field meeting).

M. alternata Sharp-angled Peacock (local)

Larval food-plant: sallows, willows and blackthorn. Frequent at Arne. Maxima 146 (1990), 48 (1993), 44 (1995), 35 (1992). Emergence 11.5 – 28.8. Somewhat earlier than the preceding.

M. wauaria V-moth (local, new BAP Priority)

Larval food-plant: currants *Ribes*. Scarce at Arne: 1977 (6, 9 – 16.7), 1994 (9.7), 1995 (1.7).

**Cepphis advenaria* Little Thorn (Nb)

Larval food-plant usually bilberry. Occurs in two main areas:

a) Hampshire, East Dorset and the Isle of Wight

b) North Somerset, Gloucestershire, Herefordshire and Monmouthshire.

One in a Rothamsted trap 1970 (identified at Rothamsted Research Station). Perhaps a stray since the food-plant is very scarce on the reserve. One at mv lightat 64 Furzebrook Road, adjoining Stoborough Heath (SY 928848), 18/19.6.2006. C. J. Cadbury.

**Plagodis pulveraria* Barred Umber (local)

Larval food-plants: particularly hazel and birches. Listed for Arne by BPP.

P. dolobraria Scorched Wing (local)

Larval food-plants: mainly oak and birches. Frequent at Arne. Maxima: 59 (1987), 48 (1988), 37 (1985), 30 (1984 and 1995). Emergence 21.5 – 13.7.

Pachynemia hippocastanaria Horse Chestnut (Nb)

Larval food-plants: heather and cross-leaved heath. Abundant on lowland heaths in southern England. Abundant at Arne. Maxima 1039 (Rothamsted and mv traps, 12.6 – 16.9.1977), 963 (22.1 – 15.11.1976), 661 (1991), 401 (9.1 – 24.11.1975), 381 (2000), 203 (1970), 186 (1985), 184 (1986). Most of these did not cover the whole emergence period (19.1 – 27.12 ie throughout the year – see Pickess 2005). Peak emergence July but 105 adults at Rothamsted trap, in February 1971-76. 13+ Stoborough Heath 30.7 – 1.8.2004 (BENHS and RSPB field meeting); 15, 23 – 29.4.2006.

Chiasmia clathrata Latticed Heath (common, new BAP Priority)

Larval food-plants: clovers and vetches. Apparently scarce at Arne; one 23.8.1976.

Pseudopanthera macularia Speckled Yellow (common)

A small number of day time records in 1980s: 1982 (4), 1984 (2 – 3), 1986 (several) in four compartments on the reserve. Emergence 28.5 – 14.6.

Apeira syringaria Lilac Beauty (local)

Larval food-plants: honeysuckle, ash and wild privet. Small numbers most years at Arne. Maxima 7 (1978), 5 (1986), 4 (1987). Emergence 21.6 – 23.8, exceptional 28.9 in 1994. Stoborough Heath, 2006, 2 (21/22.6)

Ennomos quercinaria August Thorn (local, new BAP Priority)

Larval food-plant: oak. Irregular at Arne. 1973 (3), 1976 (2) and 1978 (14). Emergence 2.7 – 23.8.

Selidosema brunnearia ssp. *scandinaviaria* Bordered Grey (Na)

Larval food-plant: heather on heathland

Not recorded in mv traps at Arne, but daylight records in 1970 (7), 1971 (6), and 1999 (3). Grip Heath (Compt. 12 SY 973877). One in oakwood, Wareham Meadows SY 949864, 11.8, 2000 (P Brash). Emergence 30.7 – 19.8. 10 adults netted Stoborough Heath on a sunny afternoon and at dusk 31.7.2004 (BENHS and RSPB field meeting).

Cleora cinctaria ssp. *cinctaria* Ringed Carpet (Na)

Larval food-plant: on lowland heaths in Dorset, New Forest and one heath in Berkshire, birches, bell and cross-leaved heath, (bilberry). Ssp. *bowesi* occurs in North Wales and the Scottish Highlands.

Small numbers and not every year at Arne: 1971 (3), 1972 (4), 1973 (1), 1974 (5), 1975 (4), 1976 (17), 1977 (10), 1983 (1, SY 955865), 1987 (1), 1993 (7), 1994 (3). Emergence 30.4-28.5. One also recorded at Stoborough Heath (SY 928848), 2000, one (26.4); 2006, 3 (28 & 29.4).

Hypomecis roboraria Great Oak Beauty (Nb)

Larval food-plant: oak *Quercus robur*. A single record for Arne: 1995 (1.7).

H. punctinalis Pale Oak Beauty (common)

Larval food-plants: oak, birches, hazel, hawthorn, apple and sallows. Two records for Arne: 1985 (4.6) and 1993 (10.6).

Cleorodes lichenaria Brussels Lace (local)

Larval food-plants: lichens on branches and stems of trees and shrubs. Occasional at Arne with single records in 1977 (29.6), 1992 (12.7) and 1995 (26.7). Four adults, Stoborough Heath (SY 928848) 30.7 – 1.8.2004 (BENHS and RSPB field meeting); one, 2005 (18.7), one 2006 (19.6); two, 2007 (17 – 21.6).

Paradarisa consonaria Square Spot (local)

Larval food-plants: oaks, birches, beech, hornbeam and pines. Small numbers most years since 1975 at Arne. Maxima 18 (1994), 15 (1993) and 11 (1990). Emergence 8.5 – 1.7.

Parectropis similaria Brindled White-spot (local)

Larval food-plants: oaks, hazel, hawthorns and birches. Small numbers most years at Arne. Maxima 23 (1988), 14 (1986) and 9 (1984). None in Rothamsted trap 1971 – 73 or 1977. Emergence 26.5 – 14.7. Stoborough Heath, 2006 one (22.6).

Lomographa bimaculata White-pinion Spotted (common)

Larval food-plants: blackthorn and hawthorns. Small numbers at Arne in six years 1983 (2), 1984 (3), 1985 (3), 1987 (5), 1994 (1), 1995 (2). Emergence 25.5 – 27.6. The apparent scarcity reflect the dirth of trapping in May and early June.

Gnophos obscuratus Annulet (local)

Largely coastal in Dorset but heathland in south-east England. At Arne singles 1986, 1987, 1988 and 1993, two in 1990. Emergence 26.7 – 17.8. One Stoborough Heath 31.7.2004 (BENHS and RSPB field meeting).

Dyscia fagaria Grey Scalloped Bar (local)

Larval food-plants: heathers, *Calluna* and *Erica*. Fairly frequent on lowland heaths in southern England; moorlands in the North. Annually in Rothamsted trap 1970 – 77 with maxima of 19 (1976), 15 (1970) and 11 (1974), 1985 (1) and 1987 (3). Emergence 30.4– 28.6.

Perconia strigillaria Grass Wave (local)

Larval food-plants: heathers *Calluna* and *Erica cinerea*, broom. Locally fairly frequent on lowland heaths from Dorset to Berkshire. Widespread but local elsewhere. At Arne small numbers: 1986 (2, plus one Turforg Bog), 1988 (4), 1990 (1), 1992 (5), 1994 (1) and 1995 (3). None in Rothamsted trap 1970 – 77. Emergence 6 – 29.6, a late individual 22.8.

Agrius convolvuli Convolvulus Hawk-moth (immigrant)

Recorded at light traps at Arne in four years: 1982 1, (15.9), 1993, 6 (21.8 – 3.10), 1991, 1 (9.10) and 1995, 1 (20.10). Also at Stoborough Heath (SY 9282 8493) in 2003, 2 in mv light trap, (27/28.8) and one nectaring at evening primrose flowers (27.8). CJ Cadbury.

[**Acherontia atropos* Death's Head Hawk-moth (immigrant)]

A dead specimen in Arne Church off the reserve

Hyloicus pinastri Pine Hawk-moth (local)

Larval food-plant: mainly Scots Pine *Pinus sylvestris*. Well established on lowland heathland in southern and eastern England. Has spread north. Between 1970 and 1977 only two singles in Rothamsted trap (1972 and 1976). Subsequently frequent at Arne with maxima 53 (1983), 48 (1984), 23 (1995) but only 8 in 1993 and 1994 (when trap run throughout emergence period). Emergence 11.5 – 16.8. Stoborough Heath, 2006, 2 (19 – 23.6) and 2007, 3 (17 – 21.6).

Mimas tiliae Lime Hawk-moth (common)

Larval food-plants: limes, elms, birches and alder. A single record at Arne: 1993 (1, 13.5). Limes are scarce or absent on the reserve.

Hemaris tityus Narrow-bordered Bee Hawk-moth (Nb, BAP Priority)

Larval food-plants: mainly devil's-bit scabious *Succisa pratensis*. Mainly southwest England, west Wales, west Scotland and inner Moray Firth. Widespread in western and northern Ireland. Has much decreased. At Arne, several larvae seen taken by a lepidopterist from devil's-bit scabious on the northwest side of the Arne road close to the Triangle (Compt. 64) at the junction of the Arne and Hartland Moor roads (SY 955865), 1.7.1982. Not recorded since.

H. fuciformis Broad-bordered Bee Hawk-moth (Nb)

Larval food-plant: wild honeysuckle. Southern half of England and Wales, with strongholds in Breckland (Suffolk and Norfolk), the Suffolk coast (including Minsmere) and large woodlands elsewhere. Has much decreased. Small numbers observed in sunlight, mostly May and early June, almost annually 1972 – 95, 1997, 2003 and subsequently (J. Day) at Arne. At least 11 in the garden of Syldata (SY 971878) but also two at Coombe Point (975867), one near the Blue Pool (966885) and one on Arne Hill (969883). Nectaring on *Rhododendron* and *Aubretia* (first generation), *Buddleja*, *Lonicera* and even *Rosa pimpinellifolia* (second generation).

Macroglossum stellatarum Hummingbird Hawk-moth (immigrant)

Small numbers recorded at Arne: 1983 (3), 1985 (1), 1986 (1), 1987 (1), 1991 (1), 1995 (1), mostly in gardens. 19.7 – 14.11.

(*Hyles livornica* Striped Hawk-moth (immigrant))

Not recorded at Arne. One at mv light, Stoborough Heath (SY 928848), 20.6.2006. C. J. Cadbury.

Deilephila porcellus Small Elephant Hawk-moth (local)

Larval food-plants: usually bedstraws. Only one recorded at Arne: 1977 (9.7).

Stauropus fagi Lobster Moth (common)

Larval food-plants: birches, hazel, oaks and beech. Apparently rare at Arne with one record 27.6.1973. At 64 Furzebrook Road at the edge of Stoborough Heath (SY 928848), 2000, 5, (26.4 – 6.5); 2006, one (20.6)

Peridea anceps Great Prominent (local)

Larval food-plants: oaks. Maximum of four caught in Rothamsted traps in 1970s but 20 – 62 at mv light in years when trap run in May, 1987 – 95. 5, mid-May 2005. Emergence 29.4 – 4.6. Stoborough Heath, 2007, one (30.4).

Odontosia carmelita Scarce Prominent (local)

Larval food-plants: birches. Widely distributed and fairly frequent in southern and south-east England. Widespread in the north. At Arne irregular. 1972 (1), 1975 (4), 1976 (1), 1977 (5), 1994 (2), 1995 (6). Emergence 20.4 – 15.5, exceptional 16.3 (1972). Stoborough Heath 2000, 3 (26.4 – 6.5).

Drymonia dodonaea Marbled Brown (local)

Larval food-plant: oaks. Only recorded at Arne in 1975 (2, 28.5 and 11.6)

D. ruficornis Lunar Marbled Brown (common)

Larval food-plants: oaks. Few records at Arne but this may be due to little trapping in April and May. 1977 (17, 24.5 – 18.6), 1994 (2, 29.4 & 2.5).

Clostera pigra Small Chocolate-tip (Nb)

Larval food-plants: *Salix repens* and other low growing willows. Not recorded at Arne, but five adults, including one on *Salix repens*, Stoborough Heath 30/31.7.2004 (BENHS and RSPB field meeting).

C. curtula Chocolate-tip (local)

Larval food-plants: poplars and willows. A single record at Arne, 27.5.1973.
One Stoborough Heath 30/31.7.2004 (BENHS and RSPB field meeting).

Dicallomera fascelina Dark Tussock (local)

Larval food-plant: mainly heather, but also creeping willow *Salix repens*, bramble and broom. Fairly frequent on lowland heaths in the south; widespread on coastal dunes in Cheshire and Lancashire; widespread on moorland in the north.

At Arne annual but numbers fluctuate. Maxima: 1974 (32), 1970 (30), 1973 (27), 1972 (25), 1992 (13), 2000 (13 at Work Centre, SY 972878, P Brash), 1982 (11). Emergence 28.6 – 26.8. Larvae found under corrugated iron sheets (laid for reptiles) on Grip Heath (SY 975877). Nine adults (all females), Stoborough Heath 30.7 – 1.8.2004 (BENHS and RSPB field meeting); 2, 2005 (18-21.7).

Euproctis chrysorrhoea Brown-tail (local)

Larval food-plants: most frequently bramble, hawthorn, blackthorn, dog-rose and sallows. Mainly near the coast in south-east and southern England. First recorded at Arne in 1983 (10.7, Rev. S Pittis), but only one other record in 1980s: 1985 (7.8). Apparently established in the area in the 1990s: 1990 (12), 1991 (9), 1992 (13), 1994 (8), 1995 (16) but none in 1993. Emergence 7.7 – 5.8.

Leucoma salicis White Satin Moth (local)

Larval food-plants: aspen and other poplars, sallows and willows. Two records at Arne: 1970 (7.7) and 1986 (28.6).

**Lymantria dispar* Gypsy Moth (immigrant).

A single record of a male at Arne.

Thumatha senex Round-winged Muslin (local)

Larval food-plants: lichens and mosses in wet places. One or two at Arne most years but 12 (1977) 8 (1970) and 6 (1986). Emergence 1.6 – 13.8. Two adults near mire, Stoborough Heath 30/31.7.2004 (BENHS and RSPB field meeting).

Miltochrista miniata Rosy Footman (local)

Larval food-plants: lichens on trees. Abundant at Arne, particularly in the mid – 1990s. Maxima: 462 (1995), 398 (1994), 278 (1993), 219 (1983), 203 (1984), but annual catch in Rothamsted trap 1970 –76 did not exceed 60. Emergence 23.6 – 19.9.

Nudaria mundana Muslin Footman (local)

Larval food-plants: small lichens on stone walls, rocks, posts, trunks and branches of bushes, largely in open situations. Only recorded at Arne in 1974 (2, 12 & 15.7).

Cybosia mesomella Four-dotted Footman (local)

Larval food-plants: algae and lichens on stems of heather, sallows and other woody plants. Formerly frequent to abundant at Arne, particularly in the early 1970s (Rothamsted trap). Maxima: 630 (1973), 457 (1972), 438 (1971), 275 (1974), 240 (1970), 190 (1976), 85 (1977), 84 (1975), 49 (1987), 40 (1986), 30 (1985). Has apparently declined with only 5 – 15 (1990 – 1995). Emergence 3.6 – 31.8, but generally earlier than *M. miniata*. Stoborough Heath, 2006, 7 (19 – 23.6); 2007, 2 (17 – 21.6).

Pelosia muscerda Dotted Footman (RDB3, immigrant at Arne?)

Larval food-plants: probably algae and lichens on stems of bushes and other plants in wet places. Currently only known as a resident in the Norfolk Broads. An unusual record at Arne: 1983 (8.8) was probably an immigrant.

Eilema sororcula Orange Footman (local)

Larval food-plants: lichens on oaks and other trees. Occasional at Arne: 1970 (1, 11.6), 1971 (2, 1 & 12.8) and singles in 1974 (15.7), 1987 (28.5), 1990 (31.5) and 1995 (22.5).

E. griseola Dingy Footman (common)

Larval food-plants: lichens and algae on trees and bushes in marshes and damp woodland. Frequent at Arne. Maxima: 96 (1984), 75 (1983), 57 (1982), 53 (1992), 48 (1994), 46 (1991) and 45 (1986). Emergence 8.7 – 13.9. 331 (55.1%) f. *stramineola* of a total of 601 scored 1982 – 1995.

E. complana Scarce Footman (local)

Larval food-plants: lichens and algae on rocks, walls, posts, branches and the ground. Abundant at Arne. Maxima: 514 (1992), 329 (1991), 184 (1986), 156 (1990), 146 (1985). Emergence 28.6 – 24.9, extreme date 14.10. Over 200, Stoborough Heath 30.7 – 1.8.2004 (BENHS and RSPB field meeting).

E. depressa Buff Footman (local)

Larval food-plants: lichens and algae on branches of trees and shrubs. Frequent at Arne, especially in the 1990s. Maxima: 152 (1994), 146 (1992), 110 (1995), 64 (1984). Emergence 20.6 – 2.9. In Rothamsted trap, 1970 – 1976, only recorded in three years, 1970 (8), 1975 (9) and 1976 (30).

Lithosia quadra Four-spotted Footman (immigrant, but resident in southwest England; possibly a temporary resident at Arne)

Larval food-plants: *Peltigera* and other lichens and algae on trunks of oaks and other trees. Recorded at Arne in five years, 1974-1995. 1978 (1, 30.7); 1982 (6 males, 10-14.7); 1983 (1 female, 13.7); 1984 (3 males, 23 & 30.7, 12.8); 1986 (1 male). Possibly a temporary resident in the vicinity in the 1980s.

Coscinia cribraria ssp. *bivittata* Speckled Footman (RDB2, BAP Priority)

Larval food-plant: apparently bristle-bent *Agrostis curtisii* which is locally abundant on heaths in South-west and South England and South Wales, especially after burns. May also feed on heathers. This endemic subspecies is restricted as a resident to heaths in south-east Dorset and formerly the New Forest. It has greatly declined since the 1970s and only recently recorded in small numbers from Dorset.

A total of 20 adults were recorded at Arne on five dates 1971 – 83. These included five in a Rothamsted trap with a tungsten bulb on Arne Heath close to Arne (SY 969880) on 2, 9 and 14.7.1971; one on 17.7.72 and one 7.7.77. Another occurred at mercury vapour light at Syldata, Arne Heath (971878) on 30.6.1976 (all BP Pickess). Speckled Footmans were also recorded in the vicinity of the Triangle at a road junction on the south-west boundary of the Arne reserve (955865) in three years: one observed in the field on an unknown date, 1971 (BP Pickess), nine at mv light, 23.7.1982 (RR Cook and J Chainey) and four at mv light 19.7.1983.

The latter two records coincided with a spate of captures at mv light on the western margin of Slepe Heath (946858/9), off the RSPB reserve, one km away. B Withers took 18 at mv light at the site; three on 5 and 10.7.1977; three on 14 and 22.7.78; 10 on 13 and 23.7.1979, and two on 18 and 30.7.1981. The Rev. S Pittis, an avid collector, accounted for 81 specimens: 41 on 28.7, 1.8 and 4.8.1981; 39 on 20.7 and 23.7.1982, and one on 27.7.1983. A further 20 were recorded at mv light there by D Brown: one on 18.7.1982; 13 on 25 and 26.7.1984 and six on 23.7.1986 (Dorset Environmental Records Centre database). These records probably represent only a proportion of the total *cribraria* trapped considering that five or six collectors with up to 15 traps operated at the main site in July in the early 1980s. It is possible that the relatively high population of the Speckled Footman was associated with a flush of bristle bent, the moth's assumed larval food-plant, following a major fire on the adjacent Hartland Moor National Nature Reserve in 1976.

Though there have been no records at the Arne reserve since 1983, sites with *Agrostis curtisii* at both this reserve and Stoborough Heath should be searched for basking larvae in spring and between mid-July and early August for adults. Five traps run in the vicinity of a large stand of bristle bent (where there had been a recent burn) on the eastern part of Stoborough Heath on 31 July/ 1 August 2004 failed to catch *cribraria* (British Entomological and Natural History Society and RSPB field meeting).

Arctia villica Cream-spot Tiger (local)

Larval food-plants: a wide range of herbaceous plants. A single record at Arne: 1995 (25.6).

Diacrisia sannio Clouded Buff (local)

Larval food-plants: heather and various herbaceous plants. Up to three adults at mv light traps most years, but also flushed from bogs (eg on Coombe Heath SY 968873) in sunshine. Emergence 12.6 – 20.7. Stoborough Heath, 8 at mv light and one in daylight 2006 (18 – 23.6); 3 at mv light, 2007 (17 – 21.6).

Callimorpha dominula Scarlet Tiger (local; stray at Arne?)

Larval food-plants: a wide range but mainly common comfrey. Records of singles in 1982, 1985 and 1999 may have been strays from the banks of the Rivers Frome and Piddle, Wareham Meadows, where the species breeds. However, newly emerged singles were recorded on the old causeway near Saltern Pond (Compt 47) SY 966871 in 1984 and 1990. Emergence 28.6 – 11.7.

Meganola albula Kent Black Arches (Nb)

Larval food-plants: dewberry, bramble, raspberry and wild strawberry. Well distributed on the coast from Devon – Norfolk. At Arne nine in 1970s, two individuals in each of six years 1974, 1984, 1985, 1992, 1993 and 2000 (Work Centre SY 972878, P Brash); one in 1971, 1973, 1975 and 1986. Emergence 26.6 – 28.7; a late individual 20.8. Two Stoborough Heath, 31.7/1.8.2004 (BENHS and RSPB field meeting); 4, SY 928849, 18.7.2005.

Nola confusalis Least Black Arches (local)

Larval food-plants: a variety of broad-leaved trees and shrubs. Small numbers almost annually at Arne. Maxima: 17 (1987), 9 (1994), 7 (1985 & 1993). Emergence 11.5 – 30.6. Numbers in some years could have been greater if more trapping had been done in May.

Agrotis cinerea Light Feathered Rustic (Nb; stray at Arne)

Larval food-plant: wild thyme. Mainly open calcareous habitats. At Arne the single record in 1977 (28.6) was probably a stray from the coast.

A. vestigialis Archer's Dart (local)

Larval food-plants: various herbaceous plants. Mainly coastal but also heathland in southern England. At Arne, small numbers annually. Maxima: 17 (1984), 15 (1981), 12 (1982) and 11 (1985). Emergence 7.7–7.9.

A. ripae Sand Dart (Nb; stray at Arne)

Larval food-plants: various strandline plants such as *Salsola kali*, *Suaeda maritima* and *Atriplex* ssp. A sand dune species. Listed in the 2000 – 2005 Arne Management Plan but not among Bryan Pickess' trap records. At Arne a stray from the coast.

A. exclamationis Heart and Dart (common)

A very late emergence record at Arne: 1995 (17.10). – second generation.

Actebia praecox Portland Moth (Nb; stray at Arne)

Larval food-plants: various sand dune plants such as creeping willow *Salix repens*. Mainly coastal dunes including Studland, Dorset. Occasional at Arne: three adults in 1971 (17, 24 and 25.8); one 1987 (25.6) at mv light, Syldata, is a strangely early date (normal emergence mid August – September, but late July in the north).

Noctua orbona Lunar Yellow Underwing (Nb, BAP Priority)

Larval food-plants: fine-leaved grasses and various herbaceous plants. Has undergone a considerable decline since 1970s. Extant population in Dorset. At Arne, a possible worn specimen 1987 (29.9); a second (certain) record 1990 (11.9).

Lycophotia porphyrea True Lover's Knot (common)

Larval food-plants: heathers *Calluna* and *Erica*. At Arne abundant.

Maxima: 492 (4.6 – 2.9.1973, with 353, 1.7), 737 (1985), 441 (1991), 358 (1995), 329 (1992).

Emergence 13.5 – 8.9.

Peridroma saucia Pearly Underwing (immigrant)

Recorded at Arne in 1982 (1), 1983 (20), 1985 (3), 1990 (2), 1993 (1), 1994 (1). Dates 3.7 – 24.10.

Xestia ditrapezium Triple-spotted Clay (local)

Larval food-plants: herbaceous plants such as primrose and shrubs. Mainly a damp woodland species. A single record at Arne 1978 (10.7).

X. castanea Neglected Rustic (local, new BAP Priority)

Larval food-plants: heathers *Calluna* and *Erica*. A heathland species in southern England.

Few caught at Rothamsted trap in 1970s but abundant at Arne at mv light in early 1990s. 216 (1993), 210 (1991), 104 (1990). Emergence 21.8 – 12.10.

X. agathina ssp. *agathina* Heath Rustic (local, new BAP Priority)

Larval food-plant: heather. A heathland and moorland species. Small numbers annually in 1970s (maximum 18) and 1980s (maximum 12), but sometimes abundant at Arne in early 1990s. 622 (1991) including 144 on 13.9; 404 (1990) including 133 on 14.9; 87 (1993).

Emergence 20.8 – 12.10.

Anarta myrtilli Beautiful Yellow Underwing (common)

Larval food-plants: *Calluna* and *Erica cinerea*. At Arne, frequent, but this normally day-flying species is not readily attracted to mv light. Maxima: 46 (1972), 20 (1982), 15 (1974), 11 (1983).

From 1984 – 1995 no more than two trapped in any year, suggesting a decline. Emergence 15.6 – 18.9. 16 adults at mv light traps and one larva, Stoborough Heath 31.7/1.8.2004 (BENHS and RSPB field meeting).

Heliophobus reticulata Bordered Gothic (p. RDB, new BAP Priority, stray at Arne?)

Larval food-plants: possibly bladder campion and soapwort. Has seriously declined, with the only recent records from north Kent and Co. Cork, Ireland. At Arne, a single very dark specimen like ssp. *hibernica* 1987 (2.7), presumably a stray from the limestone on the coast. A dark form formerly recorded from Portland.

Lacanobia contigua Beautiful Brocade (local)

Larval food-plants: a range of mainly woody plants including birches, oaks and heather.

Well distributed on heathlands in southern England. At Arne singles recorded in 1977 (12.7) and 1987 (2.7).

L. w-latinum Light Brocade (local)

Larval food-plants: a range of woody and herbaceous plants. Recorded most years at Arne, and in some frequent. Maxima: 71 (1993), 37 (1995), 25 (1992). Emergence 9.5 – 5.7.

Stoborough Heath, 5, 19 – 23.6.2006.

L. suasa Dog's Tooth (local)

Larval food-plants: herbaceous plants including common sea-lavender *Limonium vulgare* and goosefoots *Chenopodium* spp. Largely damp places including salt marshes. Occasional at Arne: 1970 (1,9.8), 1978 (2, 16 & 25.7), 1988 (2, 23.7).

Hadena albimacula White Spot (RDB3, BAP Priority, stray at Arne)

Larval food-plant: seed capsules of Nottingham catchfly *Silene nutans*. Confined to the south coast of England, including sea cliffs in Dorset. At Arne recorded twice: 1970 (no date, Slepe Heath SY 9586 B P Pickess) and 1988 (21.9 mv light Syldata, Arne, B P Pickess, confirmed N Webb). Presumably strays from the coast.

Orthosia miniosa Blossom Underwing (local)

Larval food-plant: mainly oak leaves. A single record at Arne: 1985 (8.4) but traps run on few nights in April.

Mythimna albipuncta White-point (immigrant, recent colonist in the south)

Larval food-plants: various grasses including cock's – foot *Dactylis glomerata*. At Arne recorded in five years: 1977 (2), 1978 (1), 1990 (5), 1991 (1) and 1992 (1). Dates 9.8 – 22.10. Also 6, 2005 (9-11.9) C J Cadbury. Stoborough Heath (SY 92828493), 2003, 7 (26 – 27.8); 2006, one (21/22.6). Presumably breeding in the area.

M. vitellina Delicate (immigrant, transient breeder)

Larval food-plants: various grasses. Recorded at Arne in five years: 1978 (6), 1982 (1), 1991 (8), 1992 (1) and 1993 (1). Dates 3.6 (1992) – 15.10. Also 3, 2005 (9-11.9) C J Cadbury. Stoborough Heath, 3, 2007 (18,20 & 21.6).

M. pudorina Striped Wainscot (local)

Larval food-plants: broad-leaved grasses including reed, purple moor-grass and reed canary-grass. Marshes and wet heathland. At Arne small numbers most years. Maxima 7 (1978), 6 (1990), 5 (1976), 4 (1991). Emergence 29.6 – 7.8 with an early date 14.6. Stoborough Heath, 9, 2007 (17 – 21.6).

M. straminea Southern Wainscot (local)

Larval food-plants: reed and reed canary-grass. Marshes. Only two records of singles at Arne: 1990 (25.8) and 1995 (20.8).

M. favicolor Matthew's Wainscot (Nb)

Larval food-plant: mainly common saltmarsh-grass *Puccinellia maritima*. Possibly only a saltmarsh race of *M. pallens*. Coasts from Dorset – Norfolk. Recorded at Arne in four years: 1985 (2, 25.7), 1991 (1, 3.8), 1995 (1, 10.7), 1996 (1, 22.7).

M. litoralis Shore Wainscot (Nb; stray at Arne)

Larval food-plant: marram *Ammophila arenaria*. Coastal dunes. Two records of single strays at Arne: 1974 (15.8) and 1978 (12.7).

M. l-album L-album Wainscot (Nb, immigrant but breeding on Dorset coast)

Larval food-plants: marram and possibly *Festuca arundinacea*. Now breeding along the south coast Scilly – Kent. Small numbers recorded most years from 1977 at Arne: 1977 (2), 1978 (10), 1982 (2), 1983 (1), 1984 (8), 1985 (4), 1990 (4), 1991 (21), 1992 (1), 1993 (1), 1995 (2) and 2005 (1). No late autumn trapping in 1994. Dates 3.8 – 7.11.

M. unipuncta White-speck (immigrant, transitory resident)

Larval food-plants: grasses such as cock's-foot. Recorded at Arne in two years: 1978 (10, 28.10 – 10.11) and 1990 (2, 14 & 18.10).

M. obsoleta Obscure Wainscot (local)

Larval food-plant: reed *Phragmites*. Small numbers recorded at Arne where it may breed locally. 1977 (3), 1978 (2), 1985 (3), 1986 (1), 1995 (1). Emergence 5.6 – 25.7.

M.(Senta). flammea Flame Wainscot (Na)

Larval food-plant: reed. A reed bed species, largely in the Broads and Fens of East Anglia, but resident in most of the larger coastal reedbeds in Poole Harbour and a few inland in Dorset (P Davey pers. comm..). Twice recorded at Arne: 1984 (16.5), in water trap, Salterns SY 967870 1985 (5.6).

Leucochlaena oditis Beautiful Gothic (RDB3; stray at Arne)

Larval food-plant: various grasses. Restricted to grass cliffs and south-facing slopes by the sea from Scilly – Isle of Wight. A single stray at Arne 1987 (2.10).

Dasypolia templi Brindled Ochre (local; new BAP Priority, stray at Arne)

Larval food-plants: stems and roots of hogweed and wild angelica. Coastal in southwest England. The only records at Arne were in 1978 (3, 14,15 & 26.10). Probably strays from the coast.

Aporophyla australis Feathered Brindle (Nb; probable stray at Arne)

Larval food-plants: various herbaceous plants including sea campion. The single record at Arne 1983 (28.9) – confirmed by B Withers, was probably a stray.

A. lutulenta Deep-brown Dart (common, new BAP Priority)

Larval food-plants: a range of herbaceous and woody plants and grasses. At Arne, small numbers (1 – 4) most years, but 11 in 1975. Emergence 16.9 – 27.10.

A. nigra Black Rustic (common)

Larval food-plants: various woody and herbaceous plants, including heather. Frequent at Arne, especially in 1990 when 867 trapped (29.9 – 24.10).

Lithophane semibrunnea Tawny Pinion (local)

Larval food-plant: ash. Hibernates as an adult, reappearing in spring. Occasional at Arne where there is little ash in the immediate neighbourhood. 1977 (1, 23.5), 1978 (9, 7 – 30.10), 1982 (1, 25.10), 1990 (1, 1.10).

L. hepatica Pale Pinion (local)

Larval food-plants: various broad-leaved trees and shrubs including oaks, sallows and birches. Hibernates as an adult. Small numbers at Arne 1977 (1), 1978 (3), 1983(2), 1985 (1), 1987(1), 1990 (1) and 1993 (2). Dates 5.10 – 26.10, 18.4 – 22.5. Stoborough Heath, 2006, 9 (24 – 30.4).

L. ornitopus Grey Shoulder-knot (common)

Larval food-plant: oaks. Hibernates as an adult. Small numbers at Arne: 1977 (1), 1978 (4), 1984 (1), 1985 (2), 1990 (1), 1991 (10). Emergence 5 – 31.10; none in spring. Stoborough Heath, 2006, 2 (24 – 30.4).

L. leautieri Blair's Shoulder-knot (common)

Larval food-plants: flowers and young leaves of Monterey, Lawson's and Leyland Cypress. Now well established in southern England, south Wales, Midlands and Yorkshire; has spread to Scotland. First recorded at Arne in 1977 (1). Subsequently almost annually: 1978 (1), 1982 (1), 1985 (14), 1986 (2), 1988 (9), 1990 (88), 1991 (47), 1993 (11), 1995 (25). No records available for 1989 and few trap – nights in October in 1992 and 1994. Emergence 4.10 – 6.11.

Xylena vetusta Red Sword-grass (local)

Larval food-plants: various woody and herbaceous plants including heathers and rush flower-heads. Over-winters as an adult. Local and rare as a resident in southern England. Two records of singles at Arne: 1988 (6.9), 1995 (16.10).

X. exsoleta Sword-grass (Nb, BAP Priority)

A wide variety of larval food-plants. Over-winters as an adult. Range has contracted northwards. Only occasional in southern Britain since 1980. At Arne, recorded in the 1960s, 1971 (2.3) and 1972, but none recently.

Polymixis lichenea ssp. *lichenea* Feathered Ranunculus (local)

Larval food-plants: various herbaceous plants. Mainly coastal. Recorded in five years at Arne: 1977 (5), 1984 (1), 1986 (2), 1990 (1), 1995(1). Emergence 3 – 30.10.

Eupsilia transversa Satellite (common)

Larval food-plants: a wide variety of trees and shrubs. A few records at Arne both in late autumn and early spring (7.1.1995).

Conistra ligula Dark Chestnut (common)

Larval food-plants: include blackthorn, hawthorn, sallows and oaks. Only two records at Arne: 1977 (23.10) and 1986 (10.10).

C. rubiginea Dotted Chestnut (Nb)

Larval food-plants: apple and also blackthorn, plum and sallows. Over-winters as an adult. Distribution has expanded since 1980. The six records at Arne have been in the early spring. 1974 (1, 24.3), 1977 (19.2) and 2000 (3, 10 & 22.3, 8.4 at the Work Centre SY 972878 P Brash).

Omphaloscelis lunosa Lunar Underwing (common). Stoborough Heath (SY 928848), 2006, 7 (28, 29 & 30.4 with 5 on 28th). Larval food-plants: grasses.

Abundant at Arne eg 813 (1986), 674 (1990), 260 (1987). Emergence 14.9 – 24.10.

**Xanthia gilvago* Dusky-lemon Sallow (local)

Larval food-plants: elms usually *Ulmus glabra*. Listed for Arne by B. P. Pickess.

Acronicta aceris Sycamore (local)

Larval food-plants: sycamore and maples. Small numbers most years at Arne since 1977: 1977 (6), 1978 (11), 1982 (1), 1983 (5), 1986 (6), 1988 (5), 1990 (6), 1991 (3), 1994 (2), 1995 (3).

Emergence 14.6 – 2.8. One adult Stoborough Heath 30/31 July 2004 (BENHS and RSPB field meeting).

A. alni Alder Moth (local)

Larval food-plants: a range of broad-leaved trees including birches, alder and willow.

Small numbers at Arne: 1977 (1), 1985 (3), 1986 (1), 1987 (3), 1990 (4), 1993 (1).

Emergence 14.5 – 13.7.

Craniophora ligustri Coronet (local)

Larval food-plants: ash and wild privet. Small numbers at Arne: 1977 (1), 1983 (2), 1984 (1), 1988 (1), 1993 (4), 1994 (3), 1995 (2). Emergence 11.6 – 9.8. At 64 Furzebrook Road adjacent to Stoborough Heath 2004 (1) and 2005 (4) C J Cadbury.

Cryphia muralis Marbled Green (local)

Larval food-plants: lichens such as *Xanthoria* and *Caloplaca* on walls and rocks. Occasional at Arne: 1983 (2, 12 & 19.8); 1985 (1, 13.8).

Amphipyra pyramidea Copper Underwing (common)

Larval food-plants: a wide range of trees and particularly shrubs such as hawthorns, blackthorn and hazel.

A. berbera ssp. *svenssoni* Svensson's Copper Underwing (common)

Larval food-plants: more broad-leaved trees such as pedunculate oak than *A. pyramidea*.

Both species in small numbers at Arne. In 1978, 38 *A. pyramidea* (30.7 – 22.8), 24 *A. berbera* (22.7 – 23.8).

Mormo maura Old Lady (local)

Larval food-plants: herbaceous plants in autumn; woody plants such as ivy, hawthorn and birches in spring. A single record at Arne: 1993 (17.8).

Dypterygia scabriuscula Bird's Wing (local)

Larval food-plants: include docks, sorrels and knotgrass. Small numbers most years at Arne: 1982(4), 1983 (6), 1985 (2), 1986 (6), 1987 (12), 1988 (17), 1992 (5), 1993 (5), 1994 (4), 1995 (3).

Emergence 7.6 – 8.8. One adult Stoborough Heath, 30/31 July 2004 (BENHS and RSPB field meeting); 4, 2005 (18-21.7); 4, 2007 (17 – 21.6).

Ipimorpha retusa Double Kidney (local)

Larval food-plants: willows, black poplar. Damp woodland and marshland.

Occasional at Arne with singles in 1973 (2.8), 1978 (13.8), 1987 (1.8), 1990 (4.7) and 1994 (3.8).

Also a single, Arne Moors (SY 9586) 1996 (12.8). One adult Stoborough Heath, 30/31 July 2004 (BENHS and RSPB field meeting); 3, 18-21.7.2005.

I. subtusa Olive (local)

Larval food-plants: aspen and other poplars. A single record at Arne: 1982 (18.7).

Enargia paleacea Angle-striped Sallow (Nb and suspected immigrant)

Larval food-plants: young leaves of birches and aspen. As a resident predominantly the Scottish Highlands, Yorkshire and the Midlands. Elsewhere largely an immigrant. A single record, presumably an immigrant, at Arne: 1982 (18.7).

Parastichtis suspecta Suspected (local)

Larval food-plants: birches and probably willows. At Arne recorded most years, usually in small numbers but more frequent in 1977 (21), 1987 (20) and 1990 (38). Emergence 25.6 – 6.8. Stoborough Heath, 2, 2007 (17 – 21.6).

Apamea ophiogramma Double Lobed (common)

Larva in stems of reed canary-grass *Phalaris arundinacea*, and reed sweet-grass *Glyceria maxima*. Only two records at Arne: 1984 (19.7) and 1985 (17.7). Three adults Stoborough Heath, 30/31 July 2004 (BENHS and RSPB field meeting).

Oligia versicolor Rufous Minor (local)

Larval food-plants: probably in grass stems. Small numbers recorded at Arne: 1987 (9), 1991 (1), 1992 (3), 1993 (15), 1994 (1). Emergence 11.6 – 6.8.

Celaena leucostigma Crescent (local, new BAP Priority)

Larval food-plants: yellow iris and saw sedge *Cladium mariscus*. At Arne only recorded in 1978 (2). *Cladium* does grow on Arne Moor.

**Amphipoea lucens* Large Ear (local)

Larval food-plants: *Molinia caerulea* and *Eriophorum angustifolium*. Listed for Arne by BPP.

A. fucosa Saltern Ear (local)

Larval food-plants probably stems and roots of grasses. One record at Arne: 25.8.1971.

Nonagria typhae Bulrush Wainscot (common)

Larval food-plants: mainly greater bulrush *Typha latifolia*.

Occasional at Arne: 1973 (9.9), 1991 (2, 27.8 & 11.9); 1995 (1, 21.8).

Archenara geminipuncta Twin-spotted Wainscot (local)

Larval food-plant: in upper stem of reed. Wet reed beds. Occasional at Arne: 1976 (30.8), 1984 (2, 12 & 19.8); 1987 (2, 16 & 17.8); 1994 (1, 4.8).

A. dissoluta Brown-veined Wainscot (local)

Larval food-plant: in reed stem. Drier reed beds. Recorded almost annually in small numbers at Arne: 4 (1973), 3 (1983), 2 (1977, 1984, 1991, 1992, 1993 and 1995), otherwise singles. May wander from the Rivers Frome and Piddle. Emergence 31.7 – 30.8.

A. sparganii Webb's Wainscot (Nb, probably a stray at Arne))

Larval food-plants: bulrushes *Typha*, yellow iris, common club-rush *Schoenoplectus lacustris* and branched bur-reed *Sparganium erectum*. South and east coasts of England, Scilly – Norfolk Broads, Somerset and South Wales. Spreading inland. At Arne a single record 1992 (22.8), probably a stray.

Rhizedra lutosa Large Wainscot (common)

Larval food-plant: rhizomes of reed. In Rothamsted trap at Arne, 1970 – 76, only one (1971). Subsequently small numbers almost annually at mv light. Maxima: 10 (1978), 6 (1991). Emergence 15.8 – 12.11.

Arenostola phragmitidis Fen Wainscot (local)

Larval food-plant: in stem of reed. Dry reed beds. Small numbers at Arne: 3 (1977, 1984, 1987, 1990), 2 (1971), singles (1973, 1976, 1982, 1985, 1991). Emergence 12.7 – 16.8.

Coenobia rufa Small Rufous (local)

Larval food-plants: in stems of rushes *Juncus* spp. Small numbers recorded at Arne in 1971 (1) and in the 1990s: 1990 (6), 1991 (2), 1993 (2), 1994 (5), 1995 (3). Emergence 14.7, 3 – 25.8. One adult, Stoborough Heath 30/31 July 2004 (BENHS and RSPB field meeting).

Spodoptera exigua Small Mottled Willow (immigrant)

Occasional at Arne in autumn: 1982 (1, 18.9), 1995 (2, 16 & 26.10).

Chilodes maritimus Silky Wainscot (local)

Larvae are omnivorous, feeding on living and dead invertebrates and inner tissues of dead reed stems. Small numbers recorded at Arne: 1970 (1), 1971 (1), 1978 (1, f. *bipunctata*), 1984 (2), 1985 (2), 1986 (2), 1987 (1), 1990 (3). Emergence 3.6 – 29.7.

Stilbia anomala Anomalous (local, new BAP Priority)

Larval food-plants: wavy hair-grass *Deschampsia flexuosa* and tufted hair-grass *D. cespitosa* (*D. flexuosa* absent from Arne). Lowland heathland and moorland. Small numbers recorded at Arne: singles in 1977, 1984 and 1985; 3 in both 1993 and 1995. Emergence 23.8 – 20.9.

Pyrrhia umbra Bordered Sallow (local)

Larval food-plants: frequently the flowers, fruits and shoots of common and spiny rest-harrow *Ononis repens* and *O. spinosa*. Scarce at Arne: 1983 (10.7), 1984 (3, 22.7, 20 & 23.8). Seven, Stoborough Heath 30.7 – 1.8.2004 (BENHS and RSPB field meeting).

Heliethis viriplaca Marbled Clover (RDB3, suspected immigrant)

Larval food-plants: flowers and seed-heads of many plants. Main breeding areas are Breckland (Norfolk & Suffolk) and the Suffolk coast. At Arne a single record: 1995 (1.8), presumably an immigrant.

H. maritima ssp. *warneckei* Shoulder-striped Clover (RDB3, new BAP Priority)

Larval food-plants: mainly flowers of cross-leaved heath but also heather and seed-heads of bog asphodel *Narthecium ossifragum*. Very local in Dorset (Wareham & Studland Heaths), New Forest and Surrey heaths; formerly Cornwall. A single record at Arne: The Triangle, Slepe Heath SY 955865 1983 (10.7) Rev S Pittis.

Protodeltote pygarga Marbled White Spot (common)

Larval food-plants: grasses including purple moor-grass *Molinia caerulea*. Frequent to abundant at Arne. Maxima: 241 (1984), 162 (1985), 129 (1986), 107 (1995), but in 1970s maximum at Rothamsted trap only 16. Emergence 2.6 – 10.8. Stoborough Heath, 2006, 47 (19 – 23.6); 2007, 41 (17 – 21.6).

Deltote uncula Silver Hook (local)

Larval food-plants: grasses and sedge. Marshes and boggy heathland. Occasional at Arne: 1971 (2, 29.6, 19.8), 1973 (3, 24.5 – 27.6), 1974 (2, 14 & 16.6), 1976 (1, 28.6), 1983 The Triangle (Slepe Heath SY 955865 10.7, Rev. S Pittis), 1985 (1, 25.7).

Earias clorana Cream-bordered Green Pea (Nb)

Larval food-plants: terminal shoots of willows and sallows. Occasional at Arne: 1972 (1, 17.7), 1973 (1, 4.7), 1976 (1, 7.7), 1978 (1, 28.6), 1983 (Slepe Heath SY 955865, 2, 4 & 10.7, Rev. S Pittis), 1993 (1, 21.8 K Cooper), 2000 (1, 9.8). Stoborough Heath, 2006, 5 (19 – 23.6); 2007, one (17 – 21.6).

Bena bicolorana Scarce Silver-lines (local)

Larval food-plants: oaks and also birches. Occasional at Arne. 1985 (1, 22.7), 1987 (1, 18.7) and 1995 (3, 28.6, 1.7 and 25.7).

Nycteola revayana Oak Nycteoline (local)

Larval food-plants: pedunculate oak and possible sessile oak. At Arne small numbers 1973 (1) and in the 1990s: 1990 (7), 1991 (2), 1993 (2), 1994 (5) and 1995 (3). Emergence 1.7 – 24.8.

Colocasia coryli Nut-tree Tussock (common)

Larval food-plants: mainly hazel and downy birch *Betula pubescens*. Only a single record at Arne: 1995 (27.7).

Chrysodeixis chalcites Golden Twin-spot (immigrant & import)

A single immigrant at Arne: 1983 (30.9) confirmed by B Withers.

Trichoplusia ni Ni Moth (immigrant)

A single record at Arne: 1982 (17.9).

Polychrysis moneta Golden Plusia (common)

Larval food-plants: cultivated delphiniums and larkspur. A single record at Arne: 1983 (28.7).

Autographa pulchrina Beautiful Golden Y (common)

Larval food-plants: various herbaceous plants including common nettle. Surprisingly only a single record at Arne: 1995 (5.7).

Catocala promissa Light Crimson Underwing (RDB3, BAP Priority; suspected stray at Arne)

Larval food-plant: pedunculate oak. A single record at Arne: 1978 (4.8) probably as a wanderer or immigrant.

Lygephila pastinum Black-neck (Local)

Larval food-plant: tufted vetch *Vicia cracca*. Small numbers at Arne and not every year. Maxima: 11 (1986), 6 (1984), 4 (1985). Recorded at The Triangle, Slepe Heath (SY 955865) in 1983 (Rev. S Pittis). Emergence 5.6 – 28.7.

Phytometra viridaria Small Purple-barred (local)

Larval food-plants: common and heath milkworts *Polygala vulgaris* and *P. serpyllifolia*. Day flying. Small numbers at Arne: 3 (1976), 2 (1970, 1987), otherwise singles (1972, 1983, 1985, 1993, 1994, 1995 and 2005). Emergence 26.7 – 18.8. 10, Stoborough Heath, 30.7 – 1.8.2004 (BENHS and RSPB field meeting).

Laspeyria flexula Beautiful Hook-tip (local)

Larval food-plants: lichens on twigs and branches of broad-leaved and conifer trees. Almost annual at Arne and more frequent in the 1980s. Maxima: 27 (1987), 20 (1985), 19 (1986), 17 (1984), 16 (1983). No more than two in any year 1970-76, and no more than seven in any year 1988 – 1995. None in 1972, 1973 and 1993. Emergence 23.6 – 15.8. Stoborough Heath, 2007, 2 (17 – 21.6).

Schrankia taenialis White-line Snout (Nb)

Larval food-plants: unknown in the wild. Largely southern England from Cornwall – Surrey, including Dorset, and around the Bristol Channel, Wye and Severn valleys. Two records at Arne, both in 1990 (13 & 14.8)

S. costaestrigalis Pinion-streaked Snout (local)

Larval food-plants: unknown in the wild. Damp woodland and heaths. Annual at Arne. Maxima: 38 (1972, 1973), 25 (1971), 23 (1974), 16 (1983, 1986 & 1987), 12 (1977), 10 (1975, 1976, 1990). Emergence 5.5 – 16.10 spanning two generations. Three, 64 Furzebrook Road, adjacent to Stoborough Heath, 2005, (18-21.7), 2006, one (19 –23.6).

Hyphenodes humidalis Marsh Oblique-barred (Nb)

Larval food-plants: unknown in the wild. Boggy heathland and marshes. Occurs widely on heaths of east Dorset, Hampshire and Surrey. At Arne most years from 1977 in small numbers at mv light traps. Maxima: 12 (1986), 8 (1983), 5 (1991). Emergence 4.7 – 23.8. 21 at dusk over mires, Stoborough Heath, 31.7.2004 (BENHS and RSPB field meeting).

Pechipogo strigilata Common Fan-foot (Na, BAP Priority)

Larval food-plant: withered leaves of pedunculate oak, particularly on damaged branches. Has much declined. Recorded at a Rothamsted trap (tungsten bulb) on Arne Heath (SY 971878) in five years in the 1970s: 1970 (three adults, 4, 12 and 23.8), 1972 (two, 30.7 and 13.8), 1973 (nine, 23.6 – 2.8), 1976 three 11.6, 15 & 18.7), 1977 (one, 16.8). None subsequently.

Herminia tarsipennalis Fan-foot (common)

Larval food-plants: withered leaves, including those of oaks, beech and bramble. Frequent at Arne where recorded annually. Maxima: 77 (1986), 32 (1992), 31 (1995), 27 (1987 & 1988). Emergence 1.7 – 19.8. Stoborough Heath, 2006, 6 (19 – 23.6); 2007, 16 (17 – 21.6).