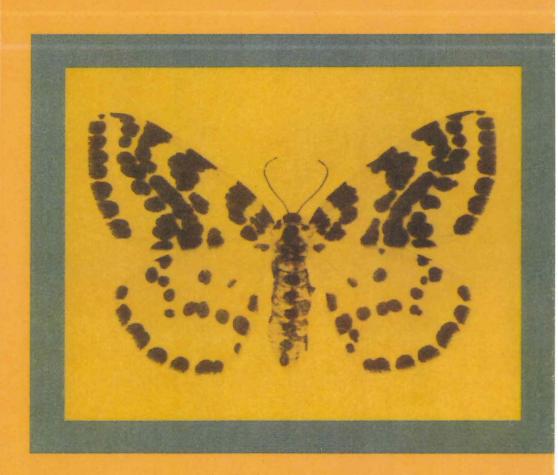
David J. Carter Pest Lepidoptera of Europe with special reference to the British Isles



surface with tufts of reddish yellow secondary setae arising from reddish brown verrucae.

Pupa. Reddish brown; cremaster bluntly rounded, with two robust, curved spines.

Adult (Pl. 32:5,10). \circlearrowleft 34 mm, \circlearrowleft 43 mm. Forewing of \circlearrowleft grey, suffused with white; fasciae and other markings dark grey; forewing of \circlearrowleft white, suffused with pale grey; fasciae and other markings grey, sometimes indistinct. Hindwing white, with grey tornal patch. Head and thorax grey; abdomen ochreous brown; antennae of \circlearrowleft bipectinate, of \circlearrowleft weakly pectinate.

Biology. Ovum. June–July; ova laid together in large numbers, forming a 'sleeve' around a pair of needles, covered with scales (fig. Montoya & Robredo, 1972); hatch in 35–40 days.

Larva. July-March (June); in a communal silken nest amongst branches; leaves nest at dusk to feed and returns at dawn; larvae overwinter in the nest emerging in a procession when the temperature is high enough. In Spain, larval processions are seen from February to mid-June (Montoya & Robredo, 1972).

Pupa. February–July; in a cocoon below ground; may go into diapause for 1–3 years.

Adult. June-August; flies at night.

References. Badiali, 1979: 21-27, figs; CIE, 1977: map 366; Della Beffa, 1961: 517-524, figs; Gómez Bustillo, 1978: 113-124; 1979: 170-171, figs, map; Heddergott et al., 1953: 323-324, fig.; Maksymov in Schwenke, 1978: 391-398, figs; Montoya & Robredo, 1972: 43-56, figs; Rougeot & Viette, 1978: 84, figs.

178. Thaumetopoea processionea (Linnaeus)

Oak Processionary

Hostplants. Quercus (Oak), Juglans (Walnut).

Damage. The larvae are defoliators and in cases of serious attack may weaken trees to secondary attack by other pests. This species seldom builds up sufficiently large populations to cause significant damage but the urticating hairs of the larvae may be a nuisance (Maksymov,1978). The larvae have also been recorded on coniferous trees (Gómez Bustillo, 1979).

Distribution. Range extends through central and southern Europe to Asia Minor. This species does not occur in the British Isles.

Description. Ovum. Spherical, yellow; covered with grey scales.

Larva. Head blackish brown; body bluish grey, light greenish grey below spiracular line; dorsal band dark grey; numerous, long, white secondary setae arise from red verrucae; abdominal segments each with velvet-black dorsal patch bordered by red verrucae.

Pupa. Ochreous yellow to brown; cremaster bluntly rounded, with two short spines (fig. Maksymov, 1978).

Adult (Pl. 32:8,9). \circlearrowleft 30 mm, \circlearrowleft 32 mm. \circlearrowleft Forewing grey, suffused with white; markings darker grey. Hindwing white with diffuse, grey postmedian fascia. Head and thorax grey; abdomen greyish brown; antennae bipectinate. \circlearrowleft Wings greyish white; forewing markings darker grey, indistinct. Head and body as \circlearrowleft ; antennae bipectinate, but less strongly than \circlearrowleft .

Biology. Ovum. July-April; laid in groups of 100-200 on branches, covered with scales (fig. Maksymov, 1978).

Larva. April-June; in a communal nest, leaving to feed at night and returning at dawn.

Pupa. June–July; in cocoons within the nest; a few pupae diapause for 1–2 years.

Adult. July-August; flies at night.

References. Della Beffa, 1961: 524-526, fig.; Goméz Bustillo, 1978: 283-290; 1979: 168, figs, map; Heddergott et al., 1953: 322-323; Maksymov in Schwenke, 1978: 398-404, figs; Patočka, 1980: 99, figs; Rougeot & Viette, 1978: 80-83, figs.

179. Calliteara pudibunda (Linnaeus)

Pale Tussock, Hop Dog

Hostplants. Humulus (Hop), Malus (Apple), Pyrus (Pear), Prunus (Apricot), Juglans (Walnut), Rosa (Rose), Fagus (Beech), Betula, Corylus, Quercus, Salix, Ulmus and other deciduous trees and shrubs.

Damage. The larvae are defoliators of a wide range of orchard and forest trees. In central and northern Europe, this species is regarded as a forest pest, particularly of beech trees (Sylvén, 1943; Wellenstein, 1978). At one time, larvae were common in hop gardens in England (Theobald, 1925; Massee, 1954) but, even when they occurred in large numbers, defoliation was caused too late in the year to affect the yield of hops. The hairs of the larvae are reported to be urticating (Busvine, 1980).

Distribution. Range extends throughout central and northern Europe to central Asia and Japan. This species occurs throughout England and Wales and locally in Ireland but is absent from Scotland (map, Worms, 1979).

Description. Ovum. Oblate spheroid, with circular depression around micropyle; surface punctate; white, shaded with olive-green dorsally and pale greenish grey basally (fig. Sylvén, 1943; Stokoe & Stovin, 1948; Döring, 1955).

Larva (Pl. 30:9). Head green, greyish green or light brown, with numerous fine secondary setae; body yellow, pale green or brown; ventral surface dark grey; intersegmental bands between abdominal segments 1–5 broad, black; vestigial black bands present between abdominal segments 5–8; abdominal segments 5–7 with black subdorsal dashes, more extensive on brown larvae, sometimes forming double subdorsal lines; spiracles white, peritreme dark brown; numerous long secondary setae present on slightly raised verrucae; median dorsal pencils of yellow, brown or greyish setae present on abdominal segments 1–4; an elongate

Hardwoods (8, 43), see also Seedling Trees, Polyphagous (on trees and shrubs). Arctiidae Hyphantria cunea Webbing foliage. Cossidae Cossus cossus Boring in trunks. Cossidae Zeuzera pyrina Boring in branches. Geometridae Erannis defoliaria On foliage. Geometridae Operophtera brumata On foliage. Geometridae Operophtera fagata On foliage. Lymantriidae Lymantria dispar On foliage. Sesiidae Sesia apiformis Boring in trunks of *Populus*. Thaume-Thaumetopoea In web on foliage of topoeidae processionea Quercus. Tortricidae Archips crataegana In rolled leaves, particularly of Ouercus. Tortricidae. Tortrix viridana In rolled leaves, particularly of Ouercus. In buds of Fraxinus. Yponomeutidae Prays fraxinella Haricot see Bean (French) Hazel Corylus maxima (27, 36) Arctiidae Hyphantria cunea Webbing foliage. Gelechiidae Parachronistis albiceps In buds. (1) Geometridae On foliage. Abraxas grossulariata Geometridae Alsophila aescularia On foliage. Geometridae Erannis defoliaria On foliage. Geometridae Operophtera brumata On foliage. Gracillariidae Phyllonorycter coryli Making blister mines on leaves. Lymantriidae Euproctis similis On foliage. Notodontidae Phalera bucephala On foliage. Pyralidae Plodia interpunctella On stored nuts. Tortricidae On catkins, buds and leaves. Epinotia tenerana Tortricidae In buds and on leaves. (1) Gypsonoma dealbana Tortricidae Hedya pruniana On spun shoots and leaves. Tortricidae Pandemis corylana On spun shoots and leaves. Helianthus see Artichoke (Jerusalem), Sunflower. Hemp Cannabis sativa Hepialidae Cutworm and on roots. Hepialus humuli Pyralidae Ostrinia nubilalis On stems and foliage. Tortricidae Cydia delineana In stems. (40) Holly Ilex aguifolium Tortricidae Rhopobota naevana In spun leaves and shoots. Hollyhock Althaea spp. Arctiidae Arctia caja On foliage.

On developing seeds.

Gelechiidae

Pexicopia malvella