

Count one point for each correct part of questions 4, 6, 9, 10, 14, 17, 23 & 24. Max 50

- 1 For which contribution to the lepidoptera of Surrey is A E Collier remembered?
- 2 What connects:
 - a Glanville Fritillary
 - b Three train stations in South London
 - c Football team in National League South
- 3 What connects:
 - a White-letter Hairstreak
 - b Underground station on the Victoria Line
 - c Handel's Music for the Royal Fireworks
- 4 Which four butterflies are considered to have become extinct as breeding species in Surrey since the end of 1980?
- 5 Petiver's natural history collection included "Our Golden Hairstreak, taken by B. Harris near Croydon, August 1702". What is the modern name of this species?
- 6 Which two uncommon moths are identified in the Small Blue Stepping Stones Project 2017-19 as benefiting from the project?
- 7 How many butterflies were recorded on transects in Surrey (VC17) during 2018?
 - a 100,000 – 150,000
 - b 150,001 – 200,000
 - c 200,001 – 250,000
 - d 250,001 – 275,000
- 8 What percentage of Surrey monads were occupied by Silver-washed Fritillary by the end of 2018?
 - a 30%, b 35%, c 40%, d 45%

Eggs

- 9 Name the eggs in the six photographs.
- 10 Excluding four species of hairstreak, which five British butterflies normally overwinter as eggs?
- 11 Why is there usually only a single Orange-tip egg on a foodplant?
- 12 How would you search for eggs of the High Brown Fritillary?
- 13 How can you distinguish eggs of Five-spot & Narrow-bordered Five-spot Burnets?

Larvae

- 14 What is the larval food plant of the following micro-moths:
 - a *Coleophora wockeella*
 - b *Cameraria ohridella*
 - c *Tineola bisselliella*
 - d *Pyrausta aurata*
 - e *Emmelina monodactyla*
- 15 What challenge must larvae of the Poplar Hawk-moth (and those of the other two UK species in the same genus) meet, which is not an issue for most other hawk-moths?
- 16 What is the function of the pair of "tentacular organs" on some lycaenid larvae, such as Adonis & Chalkhill Blue?

Pupae

- 17 Excluding Speckled Wood (which can overwinter as larva or pupa) and the Whites, which five British butterflies overwinter as pupae?
- 18 What is thought to be a defining characteristic of the Oak Eggar pupa?
- 19 Name the pupa's structures that survive self-digestion during metamorphosis and develop into the adult's external structures (wings, legs, antennae etc).

Names & places

- 20 The taxonomic type location (TL) for Northern Brown Argus is given as simply "Scotland". Name the precise site.
- 21 Which location is used most often in the common names of British macro-moths?
- 22 A moth, whose British range is restricted to Kent, and a butterfly of the White family once regarded as a pest of Kent orchards, share which first part of their English name?
- 23 Which rare moth has its only British colony near which nuclear power station?

Films

- 24 Name the film titles from the clues in the five photographs.

Eggs: see question 9



Film title 1: see question 24





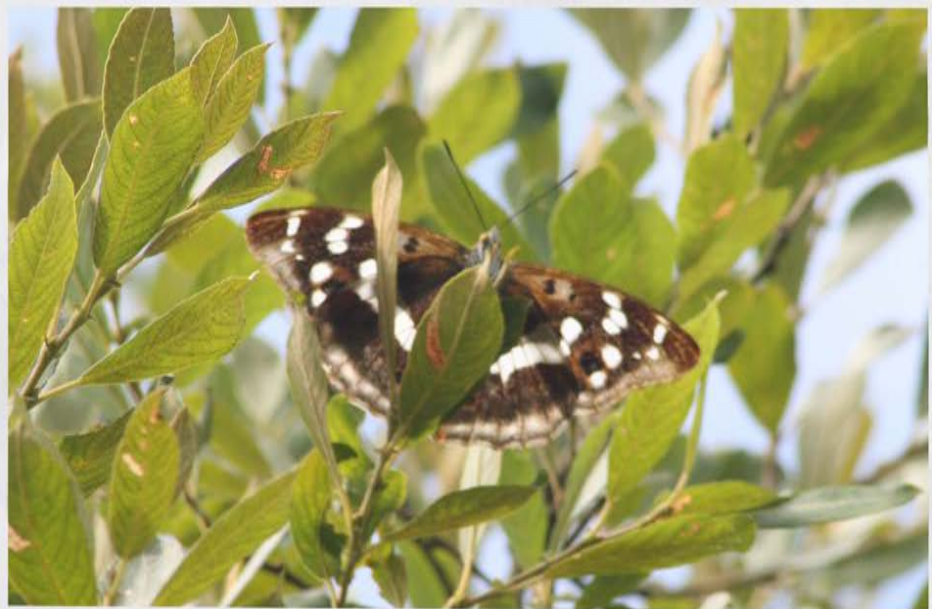
The image shows a newspaper masthead for 'Surrey Comet' with the word 'Surrey' in a vertical font on the left and 'Comet' in large white letters on a blue background. To the right, it says '65p', 'August 9, 2019', 'Established 1854', and 'surreycomet.co.uk'. Below the masthead is an advertisement for 'Blue MINT' featuring a photo of a meal. The ad text includes: 'Enjoy Blue Mint's delicious cuisine at home, make use of their free delivery service.', 'A Warm WELCOME Awaits You At Blue MINT', and contact information: '21 Waterloo Road, Epsom KT19 8EX', 'T: 01372 724167 / 747 732', and 'www.blue-mint.co.uk'.

Season now drawing to an end for this year

Slow start to season but more seen in July

One female on last count marks end of flight period

(Report p. 3)



"OK, that's all the eggs laid, now I can just sit in the sun."

Film titles 3 & 5





Quiz Answers

- 1 Black Hairstreak: colony introduced near Cranleigh in 1952; last record 1980 after habitat destroyed by development.
Possibly descendants of this population formed the basis of the Sussex colony near Ditchling.
- 2 Dullidge (**Dulwich**) Fritillary; now Glanville; West, East & North **Dulwich** stations;
Dulwich Hamlet FC
- 3 WLH has colony in New Horizon elms at **Vauxhall** Pleasure Gardens;
Vauxhall station on Victoria line;
Royal Fireworks Music rehearsal given to a paying public audience of 12,000 at **Vauxhall** Pleasure Gardens (official first performance was in Green Park).
- 4 Duke of Burgundy; Wall Brown;
Pearl & Small Pearl-bordered Fritillaries
Black Hairstreak last recorded Jun 1980
- 5 Brown Hairstreak: Petiver called his female specimen "Our Golden Hairstreak", using Brown Hairstreak or similar terms for the male.
- 6 Lace Border, Straw Belle
- 7c 208,000+; 2018 Report, p 24
- 8d 45%; 2018 Report, p9
- 9 1 Brimstone, 2 Small Blue
3 Silver-spotted Skipper
4 Holly Blue (on dogwood)
5 Blue-bordered Carpet moth
6 Purple Hairstreak
- 10 Essex & Silver-spotted Skippers
Silver-studded & Chalkhill Blues
High Brown Fritillary
- 11 Early instar larvae are cannibalistic: *females typically lay one egg per plant; other females tend to avoid a plant already holding an egg(s).*
- 12 Locate the larval food plant (violets); then search dry vegetation (bracken, leaves, twigs etc) or moss in the vicinity for single eggs. HBF does not generally lay direct onto food plant.
- 13 Five-spot lays in several layers, forming irregular heap; Narrow-bordered lays in a single layer.

Surrey's subspecies of Five-spot (*palustrella*) feeds on Common Bird's-foot Trefoil. Narrow-bordered generally uses other leguminous plants, including Greater BFT. However, Narrow-bordered sometimes uses Common BFT whilst the other UK subspecies of Five-spot (*decreta*) generally uses Greater BFT, so food plant is not a determinant for UK as a whole.
- 14 a **Betony** Case-Bearer, for which Oaken Wood is only UK site
b **Horse Chestnut** Leaf Miner (occasionally Sycamore)
c **Common Clothes Moth**: woollens, feathers, fur, hair, other animal materials, sometimes bird or wasp nests
d **Mint Moth**; also Calamint, Marjoram, other garden Lamiaceae
e Common Plume Moth: Bindweeds
- 15 They cannot feed: larvae must lay down sufficient fat stores to enable the adult to survive long enough to mate/ lay eggs without external nutrition.
- 16 They release a chemical which assists the larva's relationship with ants (an allomone). It is thought to mimic an ant alert pheromone and prompts ants to defend the larva. The Dorsal Nectary Organ or Newcomer's gland, which exudes honeydew, is a different structure.
- 17 Swallowtail, Grizzled Skipper, Holly Blue
Duke of Burgundy, Green Hairstreak
- 18 It is housed in a cocoon said to resemble an acorn. Hence both the common name and the scientific name, *Lasiocampa quercus*. The larva does not feed on oak. "Eggar" moths are also said to be named for their "egg-shaped" cocoons.
- 19 Imaginal discs: formed in the embryonic larva, and present throughout the larval stages.
- 20 Arthur's Seat, Edinburgh
- 21 Rannoch Brindled Beauty; Rannoch Looper; Rannoch Sprawler. *Jersey, featured four times, is not in UK*
- 22 Black-veined Moth & White
- 23 Dungeness [strictly two, Dungeness A and B, of which only Dungeness B is still operational]; Sussex Emerald.
- 24 1 Kelly's Heroes
2 The Last Emperor
3 The Colour Purple
4 Alien vs. Predator
5 The Wolf of Wall Street
(also accept Wolves of Wall Street)