

FUTURE POTENTIAL PESTS

1 MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*): the larvae are a major pest of a huge range of fruit trees, soft fruits and berries. A native of tropical Africa, the fly was spread around the Mediterranean during the 19th and 20th centuries and was accidentally introduced throughout the world. Larvae are sometimes found in shop-bought fruit. It is still established in southern USA despite a high-profile and well-funded eradication scheme.



JACK CLARK/AGSTOCKUSA / SPL

4 TWELVE-SPOT ASPARAGUS BEETLE (*Crioceris duodecimpunctata*): a pest widespread in Europe; reports of introduced specimens were made in Bristol in the 19th century. Both adult and larvae feed on asparagus; the adult is red with black spots and, despite its narrow shape, could easily be overlooked as a species of ladybird.

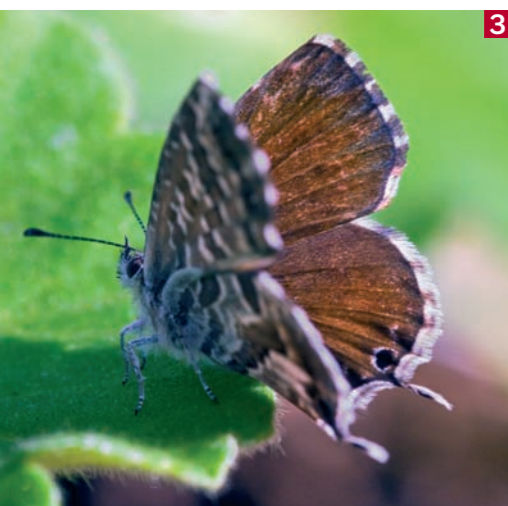


SPL

TERMITES (*Reticulitermes grassei*): large colonies live in logs and timber of houses and other buildings, including garden sheds and barns, excavating riddling galleries, which destroy the strength and integrity of the timber. It is a native of the Iberian peninsula and has already been introduced to Paris and other French towns and cities by movement of soil and infested timber. An outbreak in north Devon in the 1990s is thought to have been eradicated (monitoring at the site with baited wood traps is to continue until 2010).

PEAR 'TIGER' LACEBUG (*Stephanitis pyri*): this insect sucks sap of the leaves of pear and apple trees, causing discoloration and defoliation. Native to Europe and Asia; common in northern France. Other members of this genus already established in the UK include: *S. rhododendri* on rhododendron in early 20th century; and *S. takeyai* on *Pieris japonica* in 1999.

3 GERANIUM BRONZE BUTTERFLY (*Cacyreus marshalli*): the caterpillars feed on *Pelargonium*. A native of South Africa, it spread to Europe by transfer of horticultural material and is now well established. Found in the UK near Lewes, East Sussex in 1997, but does not yet appear to have overwintered successfully, except for a handful of individuals sheltered in glasshouses.



PETER EYLES



T. SCHROEER / STILL PICTURES

2 PINE PROCESSIONARY MOTH (*Thaumetopoea pityocampa*): native to mainland Europe, the large furry caterpillars feed gregariously in silk nests on pine trees causing major damage; the hairs are irritating, causing rashes and stinging. There was an outbreak at Royal Botanic Gardens, Kew but it is thought to have been successfully eradicated. (See also RHS Advice, p67.)

GYPSY MOTH (*Lymantria dispar*): this forestry pest of broad-leaved trees was a former resident, native to mainland Europe and East Anglian Fens until the 1850s. In recent years an Asian strain of gypsy moth has spread across mainland Europe, and an outbreak occurred in Redbridge, Essex, in 1995 although this has been eradicated by pest control.



SCIENCE SOURCE / SPL

5 COLORADO BEETLE (*Leptinotarsa decemlineata*): a major potato pest wherever it is established. A native of North America, it arrived in Europe in 1877, but was controlled until an outbreak in France in 1922; it is now increasing and spreading through most of Europe, except Britain and Ireland. Examples turn up in Britain from time to time but it has not yet become established. Our cold and wet climate was always thought to have previously prevented its survival here. Colorado beetle 'wanted' posters are still pinned up in UK police stations.



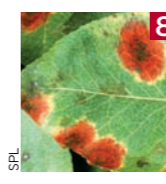
RHS PLANT PATHOLOGY

FUTURE DISEASE PROBLEMS

7 PHYTOPHTHORA Warmer, wetter winters may prove a boon to *Phytophthora* root diseases. One of the most worrying is *P. cinnamomi*, originally from Southeast Asia, and so named because one of its first recorded hosts was cinnamon. In the past 200 or so years it has inadvertently been spread around the globe by mankind and, despite its tropical origins, *P. cinnamomi* can make its home in northern Europe. Its host range is immense and one of its most popular UK victims is common yew. Predicted climate changes for northern Europe would enable *P. cinnamomi* to spread northwards and deeper into the colder areas of central Europe, and also to become more severe in areas such as southern England where it already exists.

8 PEAR RUST The laboratory at RHS Garden Wisley has noticed an upsurge in the frequency of pear rust (*Gymnosporangium sabinae*). This striking disease was once a rarity in the UK, with none recorded in some years,

but now the laboratory can sometimes see more than 30 cases a year. The orange spots on the upper leaf surface and surprising brown growths below are dramatic and unmistakable, though not yet sufficiently damaging to warrant control. Could this upsurge be due to climate change? As yet this is unknown, but the two seem to be associated.



SPL

6 ATHELIA ROLFSII Among diseases that currently cannot quite establish, perhaps because the climate is too cool, is *Athelia* (formerly *Corticium*) *rolfsii*. This pathogen has a wide host range and is damaging in warmer climates such as the southern USA. Plants yellow and wilt, and develop rotting brown lesions at soil level. It spends the dormant season as sclerotia, small seed-like fungal structures that germinate in spring to reinfest and can easily be spread accidentally on bulbs or in soil. This disease already occurs in continental Europe and there have been outbreaks in the Channel Islands. It is close to making landfall in mainland Britain.



KIM TAYLOR / THE GARDEN COLLECTION

OTHER NEW INSECT ARRIVALS

WESTERN CLUBTAIL DRAGONFLY (*Gomphus pulchellus*): a native of southwest Europe, this insect spread north and east during the 20th century. Although several dragonflies regularly migrate to Britain and occasionally become established, they are usually lake, river or stream species; this one breeds in any pool, including garden ponds.

6 EUROPEAN SWALLOWTAIL (*Papilio machaon* subsp. *gorganus*): native to Europe and Asia. While the slightly smaller and darker British race (subsp. *britannicus*) is confined to the Norfolk Broads and feeds only on milk parsley (*Peucedanum palustre*), the European race (sometimes found in the UK as migratory adults) is a common garden butterfly in northern France, feeding on fennel, parsley and carrots. It is ironic that a subspecies of a rare and protected British insect could potentially become a minor garden nuisance.

53 ► Climate and trade

Since the land bridge to Europe was severed by rising sea levels 7,000 years ago, new arrivals to Britain have been kept to a trickle – until recent changes in weather and increasing international plant trade allowed numbers to escalate. Climate change does not bring more aliens, but it may make our previously hostile environment more favourable for them when they arrive.

In Britain we have had a series of mild winters, warm summers and dry springs and autumns – at least in southern England where most invaders first make landfall. This has meant many 'new' species have become established here in the past 15 years, and they have started to spread. More are set to come.

It is not too soon to start considering which likely garden pests, diseases – and helpful species too – could arrive in Britain in the next 10 to 20 years. ■

Richard Jones is an entomologist and freelance writer on wildlife and the environment. Chris Prior is a plant pathologist and former RHS Head of Horticultural Sciences

i What if you think you have found a new-to-Britain pest or disease? RHS members can send or bring samples to the Members' Advisory Service at RHS Garden Wisley, Woking, Surrey GU23 6QB, or samples can be sent to the Plant Health and Seeds Inspectorate, a division of DEFRA that is responsible for dealing with new plant pests and diseases. Write to: PHSI, Central Science Laboratory, Sand Hutton, York YO4 1LZ. ● Samples of the insect/disease should be sent with the host plant in a sealed polythene bag in a stout container. The covering letter needs to give details of where the plant is being grown, from where it was obtained and when the problem was first noticed. A contact telephone number should be provided

@ www.rhs.org.uk/climate for RHS Entomologist Andrew Halstead's observations on trends in pests