

WORCESTERSHIRE'S ORTHOPTERA

An Identification Guide to the
Grasshoppers, Crickets & Allied Insects
of Worcestershire



GARY A. FARMER

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& Allied Insects of Worcestershire



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Introduction

This guide has been produced to aid the identification of the Orthoptera at large in Worcestershire. It concentrates on the grasshoppers, bush-crickets and earwigs known to be present at the start of 2014.

Distribution maps shown are accurate to the end of 2012 and were produced by and remain the property of Worcestershire Biological Records Centre (WBRC).

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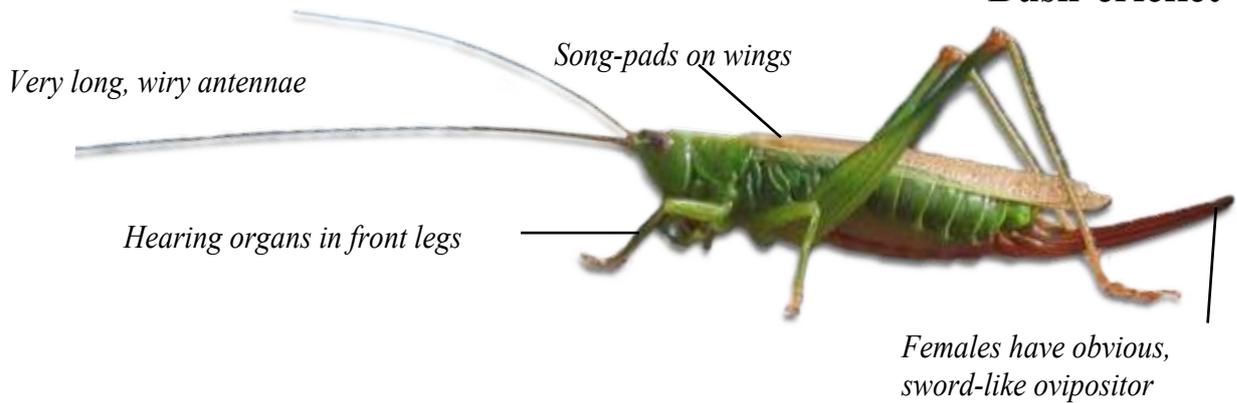
At the start of the New Millennium many species of insects have experienced a rapid range expansion (possibly due to climate change) and the Orthoptera are no exception. Roesel's Bush-cricket and Long-winged Conehead spread across the county in the first ten years of the 2000s and continue to spread. They became generalists in regard to habitat, taking advantage of grassy road verges and scrubby fields; including the many Millennium Wood plantations which quickly developed scrub features of sheltered tussock grasses with thistles and rushes. This is ideal habitat for most of the Orthoptera and although only offering temporary habitat before the growing trees shade out the grassland these stepping stones have undoubtedly aided the spread of some species.

It is hoped that this guide will encourage more people to get out into the Worcestershire countryside to identify and record the Orthoptera. Submitting records to WBRC will add to our understanding of the distribution of this group of insects in Worcestershire.

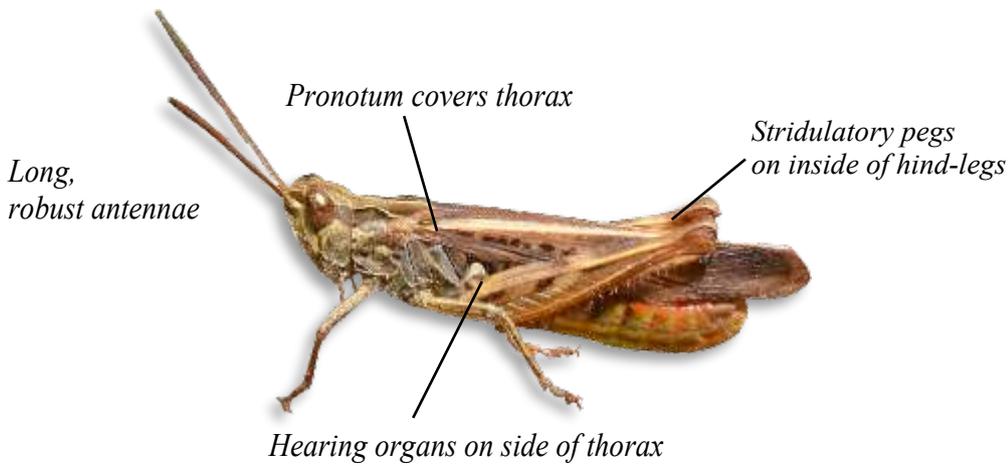
Worcestershire Recorders plan to produce an atlas of Worcestershire's Orthoptera using all records submitted to the end of 2014. So the more records submitted, the more accurate the atlas will be.

Identification

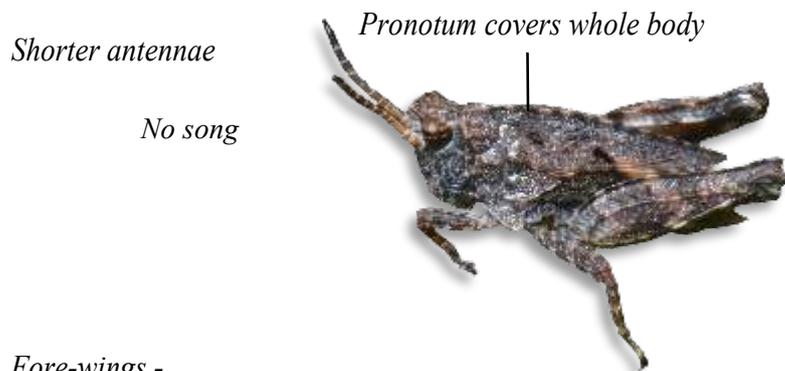
Bush-cricket



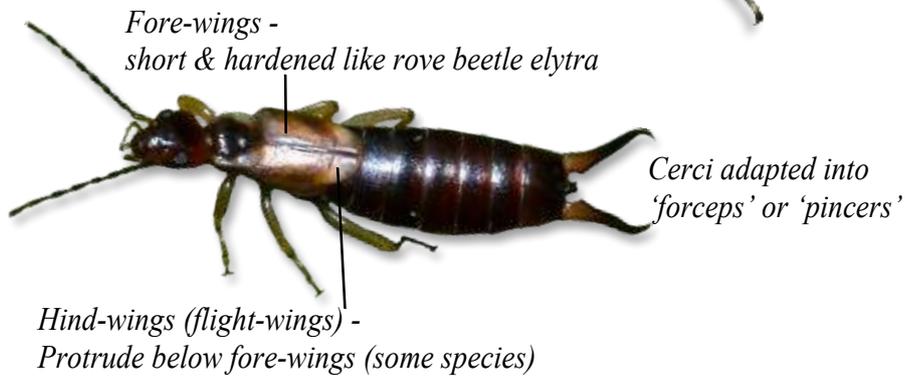
Grasshopper



Groundhopper



Earwig

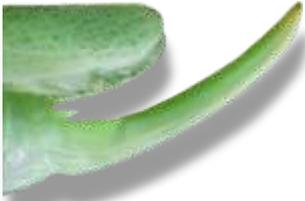


Grasshopper pronotum comparisons

		Female	Male
Side keels description	Lesser Marsh		
<i>Very straight, parallel sided at least front two thirds.</i>			
	Meadow		
<i>Gently curved, Slight inwards curve at front and rear.</i>			
	Common Green		
<i>Curves in at front, Spreads out to twice as wide at rear.</i>			
	Field		
<i>Sharply incurved, especially in male. Pronotum obviously longer than wide.</i>			
	Mottled		
<i>Very sharply incurved side-keels on short pronotum.</i>			

Bush-cricket details

Female ovipositor comparisons (side view)



Oak Bush-cricket



Long-winged Conehead



Short-winged Conehead



Speckled Bush-cricket



Roesel's Bush-cricket



Dark Bush-cricket



Oak Bush-cricket,
male cerci top view

Pronotum detail



Roesel's Bush-cricket



Dark Bush-cricket



Bog Bush-cricket

Check list of Orthoptera & Allied insects in Worcestershire

Common Name	Species	Worcestershire Status
Oak Bush-cricket	<i>Meconema thalassinum</i>	Common & widespread.
Southern Oak Bush-cricket	<i>Meconema meridionale</i>	Not yet recorded at the end of 2013.
Great Green Bush-cricket	<i>Tettigonia viridissima</i>	Very Rare Vagrant.
Dark Bush-cricket	<i>Pholidoptera griseoptera</i>	Common & widespread.
Bog Bush-cricket	<i>Metrioptera brachyptera</i>	Absent.
Roesel's Bush-cricket	<i>Metrioptera roeselii</i>	Common. Rapid range expansion.
Short-winged Conehead	<i>Conocephalus dorsalis</i>	Rare. Restricted to suitable habitat.
Long-winged Conehead	<i>Conocephalus discolor</i>	Common. Rapid range expansion.
Speckled Bush-cricket	<i>Leptophyes punctatissima</i>	Common & widespread.
Wood Cricket	<i>Nemobius sylvestris</i>	Absent. One unconfirmed record.
House Cricket	<i>Acheta domesticus</i>	Very rare.
Mole Cricket	<i>Gryllotalpa gryllotalpa</i>	Extinct.
Slender Groundhopper	<i>Tetrix subulata</i>	Common.
Common Groundhopper	<i>Tetrix undulata</i>	Common.
Common Green Grasshopper	<i>Omocestus viridulus</i>	Widespread. Declining (?).
Mottled Grasshopper	<i>Myrmeleotettix maculatus</i>	Local.
Lesser Marsh Grasshopper	<i>Chorthippus albomarginatus</i>	Common. Increasing.
Field Grasshopper	<i>Chorthippus brunneus</i>	Widespread.
Meadow Grasshopper	<i>Chorthippus parallelus</i>	Common & widespread.
Stripe-winged Grasshopper	<i>Stenobothrus lineatus</i>	Absent? Two records (Malverns 1990s).
Egyptian Grasshopper	<i>Anacridium aegyptium</i>	Rare import with food. One record.
Common Cockroach	<i>Blatta orientalis</i>	Unknown.
German Cockroach	<i>Blattella germanica</i>	Unknown.
American Cockroach	<i>Periplaneta americana</i>	Unknown.
Australian Cockroach	<i>Periplaneta australasiae</i>	Unknown.
Common Earwig	<i>Forficula auricularia</i>	Very common & widespread.
Lesne's Earwig	<i>Forficula lesnei</i>	Rare. Local.
Lesser Earwig	<i>Labia minor</i>	Uncommon/overlooked. Widespread.

Only the species **in bold** are covered in this guide.

Species Accounts

This chapter gives details on identification, habitat types and distribution of individual species most likely to be encountered in the county.

All photographs are copyright of the author.

Distribution maps were produced by and are copyright of Worcestershire Biological Records Centre.

Headings used in this chapter.

Identification:

Features that can be used in the field to aid species identification. Hand lenses with magnification between X 5 and X 10 will be useful for some features.

Field notes:

Observations of behaviour and habitat preferences.

Where to look:

Tips on where and how to find individual species. Some areas of the county are under-recorded and this paragraph gives locations where records are missing for certain species.

Song:

All grasshoppers and bush-crickets produce a song, usually during courtship.

Grasshoppers rub their long hind legs against the hard edge of their fore-wings.

Crickets have special pads on their fore-wings which rub together. The exception is the Oak Bush-cricket which lacks the wing pads and produces its song by stamping with its hind feet. The groundhoppers are silent.

Worcestershire status:

The status of the individual species according to numbers of records up to the end of 2012 and anecdotal evidence.

Fincher:

The earliest known records for Orthoptera in the county are from an article produced by Fred Fincher in 1953. His main areas of recording were concentrated in the north of the county but it gives a good reference point.

Number of Records:

This refers to the number of records submitted to the Worcestershire Biological Records Centre up to 2012.





Oak Bush-cricket

Meconema thalassinum

A delicate looking, green bush-cricket, almost translucent and very spindly in appearance. The wings are longer than the abdomen and are the same colour as the rest of the insect. The only markings are a on the back; a pale stripe which darkens to deep yellow and pale brown in mature adults. There is also a yellow line which runs from the front of the head to the rear of the pronotum where it meets a pale brown patch. In immature stages this line is pale & continuous, running down the back from front of the head to tip of the abdomen. The ovipositor is the same colour as the body and is long and slightly upturned, often with a darkened tip.

The male cerci are very distinctive, being longer than those of other bush-crickets and incurved.



Oak Bush-cricket: female (top), immature (left), mature male (right).

Field Notes:

The Oak Bush-cricket is associated with trees and hedges and has been found in a variety of species including oak, dogwood, privet, and ivy. It is often found on the ground after autumn winds or after heavy rain showers in summer. It is most often found by beating hedges with a sweep net but Oak Bush-cricket is often attracted to light which brings it into houses earning the alternative name of the bathroom bush-cricket. Despite its fragile appearance it is known to be a predatory species but there is little detail of the feeding habits in the county. This species can be found late in the season and it has been observed ovipositing into crevices in tree bark as late as November.

Where to look:

Almost anywhere with trees and shrubs. Try beating or sweeping hedges. Look under oak trees after heavy rain or high winds in late summer. This species is attracted to light and will enter houses.

Song:

This species is unusual amongst the bush-cricket in the way it produces its song. As it lacks the hardened pads on its wings used by other species to stridulate. Instead it 'tap-dances' on a leaf or other surface to produce a short, fast burst like a drum roll. This is particularly audible when they choose taught material such as a pitched tent as a song perch.

Similar Species:

Speckled Bush-cricket is short-winged and a less slender species and is covered in tiny black spots. Great Green Bush-cricket is very similar but darker green and much larger. Long-winged Conehead is similar but has brown wings. Southern Oak Bush-cricket has very short wings.

Worcestershire Status:

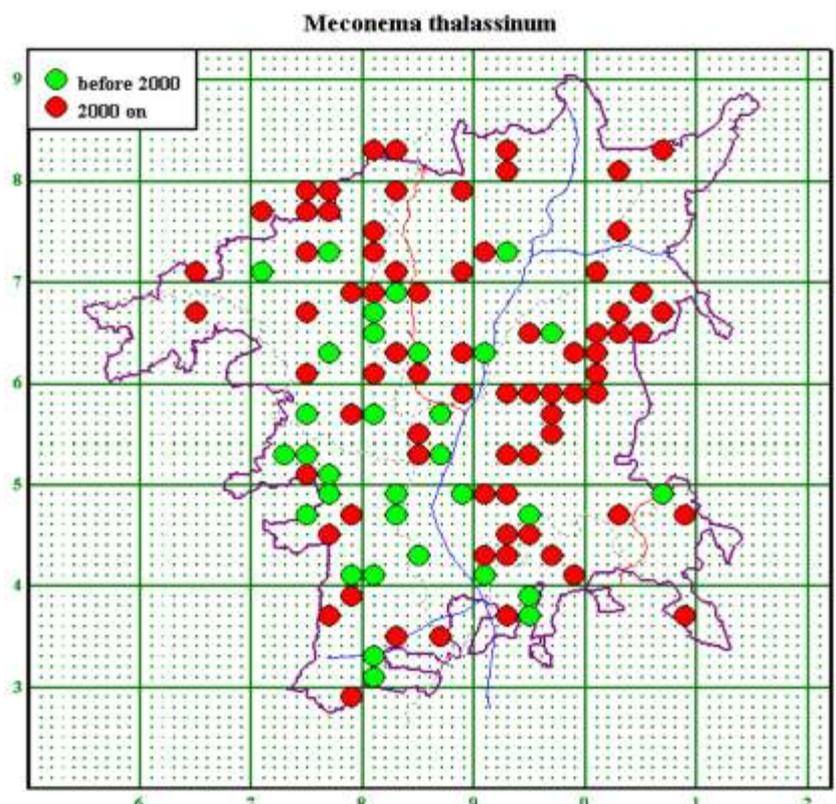
Widespread and frequently encountered but usually only single.

Fincher:

Not uncommon at Randan Wood, Bromsgrove.

Number of Records:

Pre 2000	91
2000 onwards	127
Total	218





Dark Bush-cricket

Pholidoptera griseoptera

A robust, wingless species that varies from grey/brown to chestnut brown in colour. The underside is a contrasting bright green or yellow. The ovipositor is broad and strongly upturned towards the tip. Immature Dark Bush-crickets are rather spider-like in appearance; their general dark body colour combined with the broad pale dorsal stripe is reminiscent of the wolf spiders *Pardosa* species.



Dark Bush-cricket: female top of page; immature left; mature male right.

Field Notes::

The Dark Bush-cricket is typically found in woodlands with open rides and good herb and shrub layers. Bramble and bindweed along hedgerows is also a favoured habitat. They will sit quite openly and can be relatively easy to approach. The young are seen from May when they sit on foliage in sunny situations. This species feeds on pollen and petals, especially buttercups as well as leaves of various plants when young. They become more predatory as they mature and have been seen to feed on small invertebrates including weevils, caterpillars and small spiders. First recorded in Worcestershire in 1946 (Fincher).

Where to look:

It is worth checking woodland and scrub in the north of the county to see if this species is expanding its range.

Song:

A loud but short, sharp chirp. Can be heard several metres away on warm days. Large numbers can be found congregating at a leck, as competing males sing against each other. When several males call against each other the continuous series of chirps can sound quite unlike the typical isolated call.

Similar Species:

Roesel's Bush-cricket is the species most likely to be mistaken for the Dark Bush-cricket in Worcestershire has. However it has longer wings and a distinctive pale edge on the side of the pronotum and two or three yellow spots behind this.

Bog Bush-cricket is similar but has a pale edge around only half of each side of the pronotum and longer wings. It is a species of wet heath and considered to be absent from Worcestershire.

Worcestershire Status:

Common in most of the county where suitable habitat exists.
Absent from north-west.

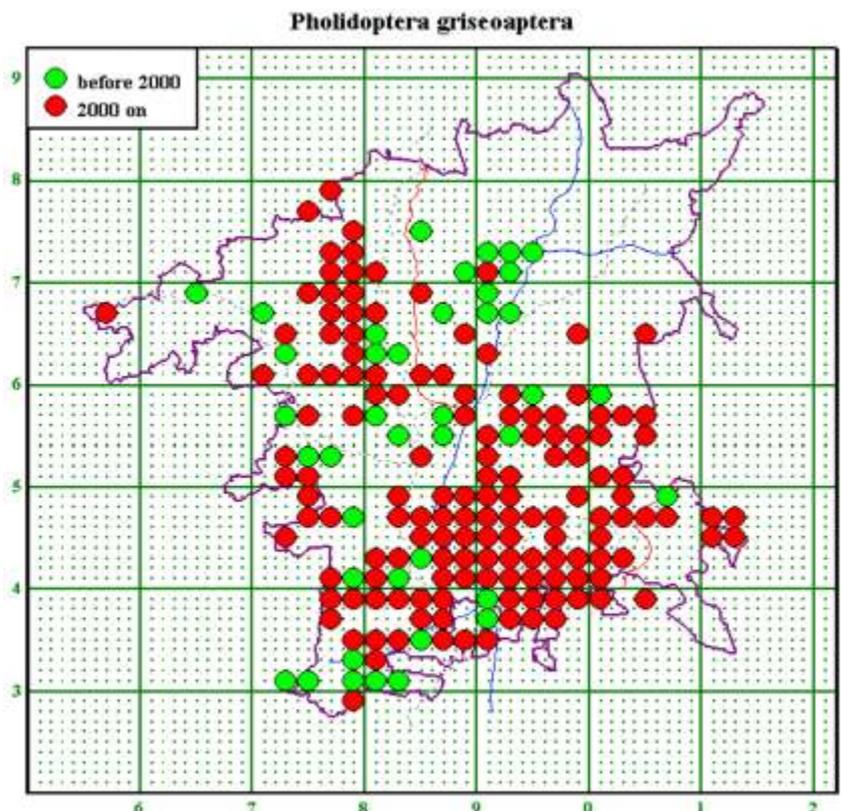
Fincher:

Found west & south-west of Bromsgrove over several square miles.

Also between Stourport & Holt Heath.

Number of Records:

Pre 2000	152
2000 onwards	383
Total	534





Roesel's Bush-cricket

Metrioptera roeselii

A robust bush-cricket with very distinctive markings on the sides of the pronotum and thorax. Usually short winged but can produce long winged forms especially in hot summers. Usually brown ground colour but green forms do occur. The markings are a pale green in these individuals but still distinctive. The female has a short, upturned ovipositor and long cerci. The male also has long cerci which are distinctive when viewed from above. Bright yellow underneath like other dark coloured bush-crickets.



Roesel's Bush-cricket: female top, male left, long-winged green form right.

Field Notes:

A recent addition to the Worcestershire list. The first record was from Arrow Valley Park in Redditch in 2005. Wide road verges, scrub, areas of tussock grasses with thistles and rushes, unmanaged early stage plantations are all habitats where this species might be found. They are more secretive than other bush-crickets and there is little information available regarding development in the county. The adults favour tussock grasses where they drop deep into the vegetation when disturbed rather than trying to jump away.

Where to look:

The use of sweep nets is of limited use for this species because of the thick vegetation and its habit of dropping deep into the base of grasses when disturbed. Listening for the song is the most productive method and then patience is often rewarded by a sighting. The early instars are not often found.

Song:

A very high-pitched electrical buzz which can be quite loud on hot summer days. This species was recorded at many sites in the south of the county by using a bat detector during journeys around country roads.

Similar Species:

Roesel's Bush-cricket is a very distinctive bush-cricket because of its pronotum and thorax markings. However it could be mistaken for Dark Bush-cricket at first glance. Bog Bush-cricket is similar but has a pale edge around only half of each side of the pronotum and is a species of wet heath.

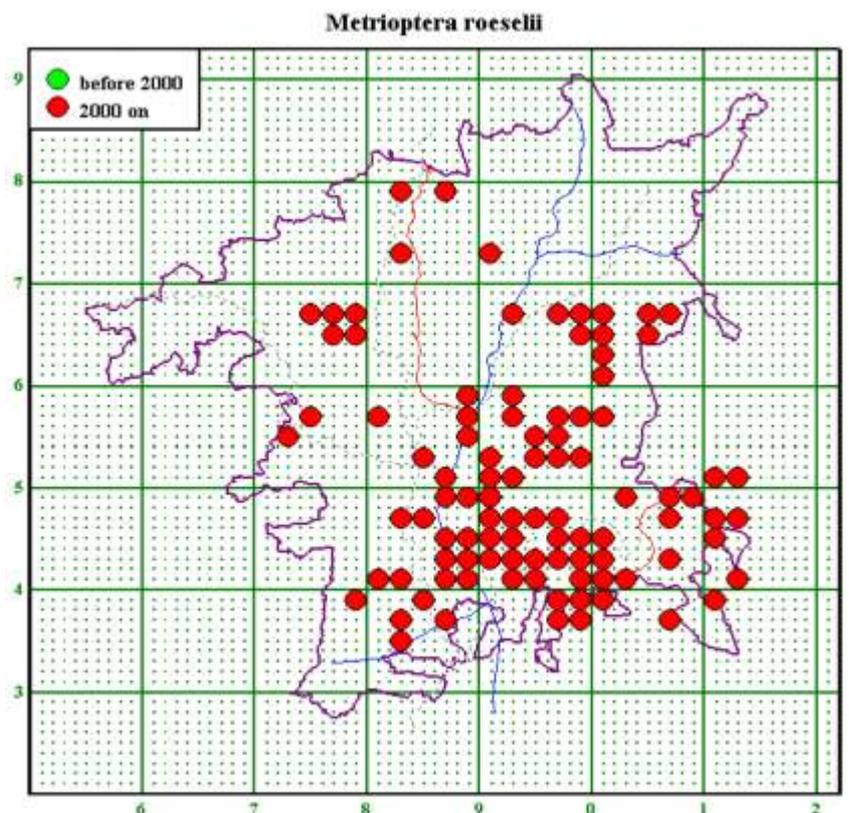
Worcestershire Status: A recent colonist, first recorded in 2005 but already a common species.

Fincher:

Not mentioned. This species was not present in the county at that time.

Number of Records:

Pre 2000	0
2000 onwards	287
Total	287





Short-winged Conehead

Conocephalus dorsalis

A small bright green bush-cricket with dark brown stripe down its back and short, brown wings. The early instars are virtually identical to Long-winged Conehead being bright green with a black stripe and exceedingly long antennae. Until recently, any coneheads found amongst rushes in Worcestershire's wetlands were considered to be Short-winged Conehead, however the Long-winged Conehead is now found alongside its rare cousin at all known sites. A long winged form is known but has not been found in Worcestershire.



Short-winged Conehead: female top; immature left; mature male right.

Field Notes::

The Short-winged Conehead is confined to wetland areas with abundant rushes. It is absent from many sites that appear suitable so other factors are affecting the distribution of the species in Worcestershire. It is a secretive species being very well camouflaged amongst dense grasses and rushes. It lays its eggs in the stems of rushes by first biting through the hard outer sheath and then drawing its ovipositor up under its body to insert it into the plant's soft tissue where it lays single eggs. First recorded in Worcestershire in 1999 at Ipsley Alders Marsh. Most easily detected by bat detectors, but even confirming their presence with these devices will not guarantee a sighting. This is a late species which matures in late July or August and has died off by October.

Where to look:

River valleys and good wetlands anywhere in the county could hold small populations of this species. It has recently been found in wet flushes in an area of tussock grasses and rushes in the north of the county.

Song:

A very high pitched, quiet ticking which is omitted in long bursts with a rhythm like a tractor engine which is interspersed at regular intervals by a slower series of ticks.

Similar Species:

The other short winged green bush-cricket is Speckled Bush-cricket which is completely covered in speckles. Short-winged Conehead has black speckles on its legs only. It is most likely to be confused with Long-winged Conehead. The most certain way tell the two species apart when immature is the shape of the ovipositor which is obviously upturned in Short-winged Conehead. The wing lengths are quite different in adults.

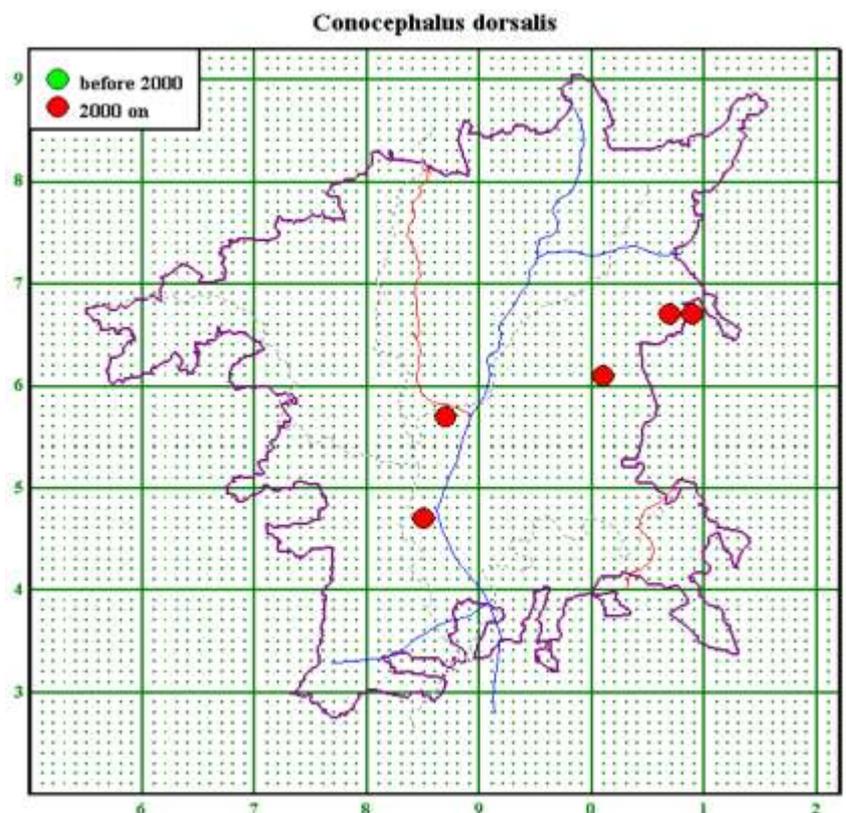
Worcestershire Status: A rare bush-cricket, confined to wetlands with abundant rushes. Recently found on rushes in rough grassland with wet flushes.

Fincher:

No mention. Most likely absent at that time.

Number of Records:

Pre 2000	1
2000 onwards	8
Total	9





Long-winged Conehead

Conocephalus discolor (*C. fuscus*)

Identification

A bright green bush-cricket with brown wings and brown on the top of the pronotum. This species has exceptionally long antennae and the female has a very long, straight ovipositor which is brown in colour. The early instars are bright green with a black longitudinal dorsal strip. This stripe turns brown when the insect matures. There is an unusual brown form and also an extra long-winged form. Occasionally these characters are combined and the result is quite different from the normal form as shown below.



Long-winged Conehead: female (top); early instar (left); brown form (right).

Field Notes:

The Long-winged Conehead is a new species to Worcestershire, first being found in 2003 and has since spread rapidly. This species is a pollen feeder (especially buttercups) when young adding insect prey to their diet as they grow. They are opportunists; a Long-winged Conehead has been recorded taking a large fly from a spiders web.

Where to look:

Any long grass with thistles and other coarse vegetation may now hold this species. Searching in suitable habitat in the north of the county may find new sites. Most easily detected by using a bat detector. Look for the nymphs from late May when they can be found feeding from the pollen of buttercups. Sweep netting is also a successful method for finding this species. Check the west of the county and the north-east to see if it is established in these areas now.

Song:

A very high pitched, fast ticking which is omitted in long bursts with a rhythm not unlike a helicopter when heard on a bat detector. It lacks the interspersed slow ticking of the Short-winged Conehead.

Similar Species:

The Oak Bush-cricket is a similar size and shape but is a much paler green and lacks the brown stripe and brown ovipositor. It is most likely to be confused with Short-winged Conehead. The most certain way tell the two species apart when immature is the shape of the ovipositor which is obviously upturned in Short-winged Conehead. The wing lengths are quite different in adults.

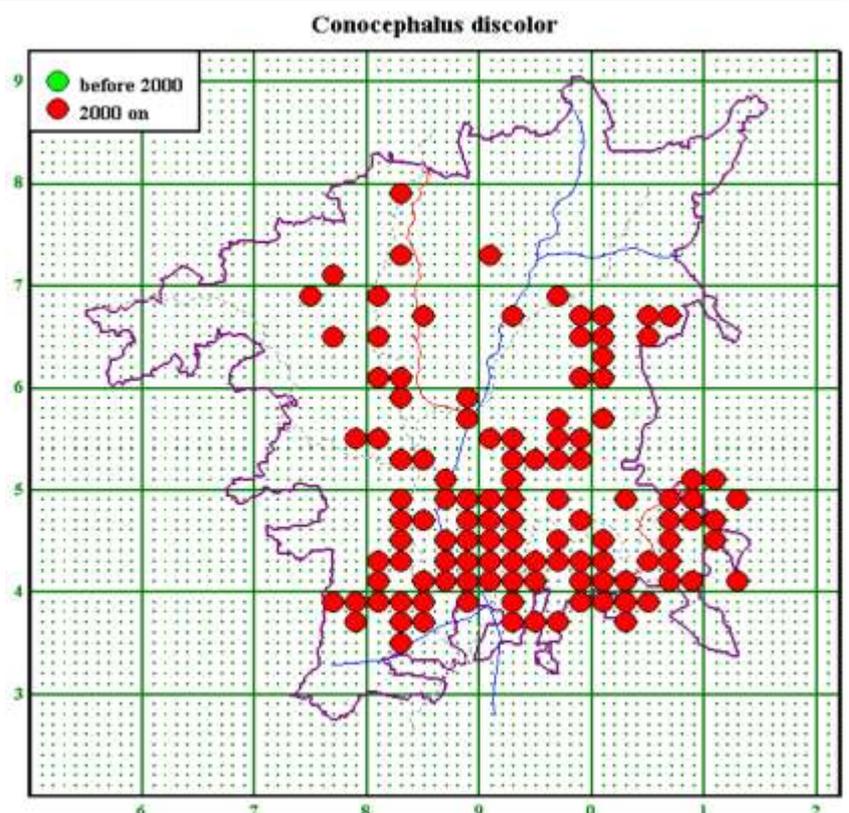
Worcestershire Status: A recent colonist but already a very common species in the southern half of the county.

Fincher:

No mention. This species was absent at that time.

Number of Records:

Pre 2000	0
2000 onwards	265
Total	265





Speckled Bush-cricket

Leptophyes punctatissima

Identification:

A fat-bodied, wingless green bush-cricket with very long legs. The whole body is covered in tiny black spots even from the first instar. When mature their legs, antennae and cerci turn an orange/brown colour as does the dorsal stripe. The mature male has small but obvious wing pads which have a brown stripe bordered by black and a varying amounts of brown on top of the pronotum bordered with white. The female ovipositor is very broad and upturned with a serrated edge.



Speckled Bush-cricket: mature female top of page and mature male.



Adult male dorsal view; third instar female; first instar nymph.

Field Notes:

The Speckled Bush-cricket is possibly our commonest bush-cricket, being found all over the county except the far north-east. It is most obvious in spring and early summer when early instars can be found feeding from pollen of buttercups and dandelions. They have also been observed eating petals of woodland flowers such as Red Campion and Hedge Woundwort. Later in the year they will eat Bramble pollen, petals and leaves.

Where to look:

Any woodland with wide open rides and glades. Areas of Stinging Nettles are a favoured haunt. It is worth checking areas in the north-east of the county such as Lickey Hills, Clent Hills and Woodgate Valley. Sweep-netting is a reliable method for catching this species.

Song:

A very high-pitched quiet short chirp which is difficult to detect even with a bat detector.

Similar Species:

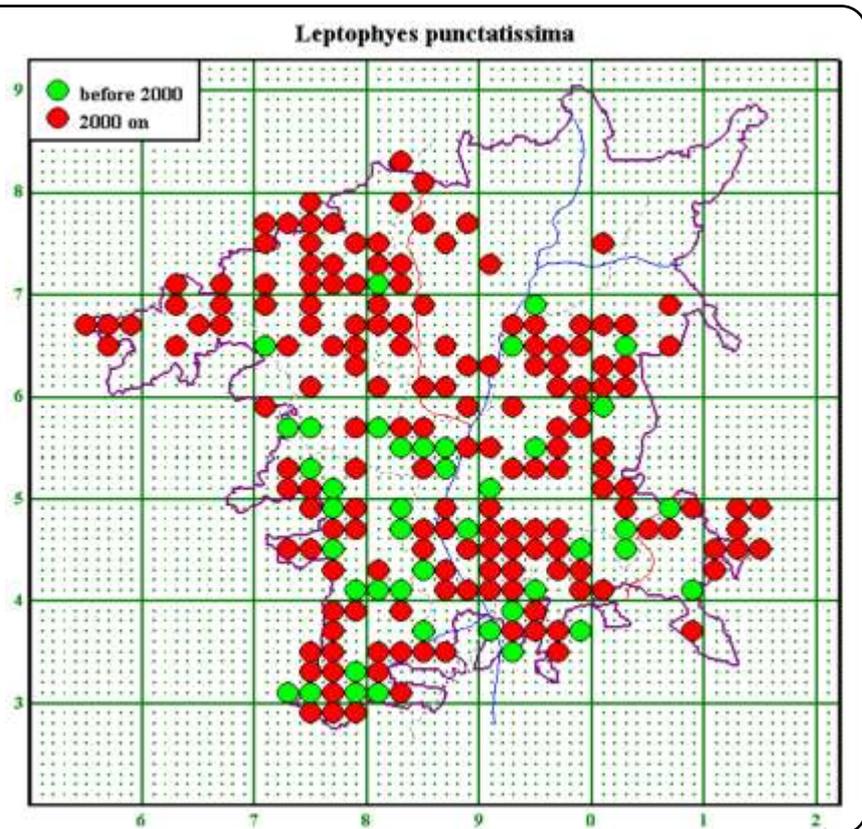
The much larger Great Green Bush-cricket early instars have some black speckles. No other species is totally covered with black spots. The mature Speckled Bush-cricket with their bright legs and very short wing pads are very distinctive.

Worcestershire Status: A common and widespread species. Found in all parts except the far north-east of the county. First county record is from 1962.

Fincher:
No mention. Absent at that time or overlooked?

Number of Records:

Pre 2000	115
2000 onwards	327
Total	442





House Cricket

Acheta domesticus

Identification:

A pale brown cricket with a number of black markings, particularly across the head. This is a 'true' or 'ground' cricket and is more flattened than the bush-crickets. The female ovipositor is long and pin-shaped, while both sexes have very long cerci. The outer wings are about two thirds the body length but the hind (flight) wings are longer than the body. The nymphs are white at first and have long hairs on their cerci which are less obvious in older nymphs.



House Cricket: mature female top of page; first instar left and eggs right.



Early instar left; late instar right.

Field Notes:

The House Cricket is a species of warm, humid locations and has been found in hospital basements, heating systems and old houses in the past. It is now a very rare insect with only one known population remaining in Worcestershire.

It is worth looking at landfill sites, bakeries and other warm, humid sites. They can not survive out of doors. One individual was taken at a moth light trap. This species is no longer sold as reptile food. Its song is a series of loud, sharp chirps.

Similar Species:

Various exotic species are sold as reptile food:

Southern Field Cricket is black at all stages and is very noisy.

Tropical House Cricket is very similar to House cricket but is smaller and short winged.

Jamaican Cricket is similar size and shape but is darker brown and lacks the black head stripes. It is sold as 'silent cricket' but it has a call similar to that of the Dark Bush-cricket.

Worcestershire Status:

Very rare.

Only one known population.

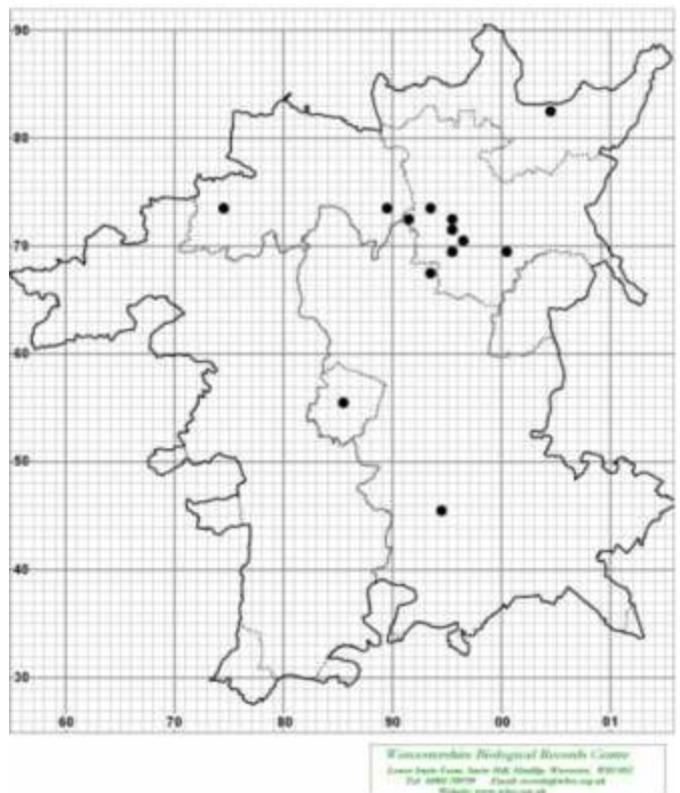
Fincher:

(*Gryllulus domesticus*)

Frequent in bakehouses, farms and rubbish tips....In warm seasons it may sometimes be heard in hedges....disappears with the first frosty autumn nights.

Number of Records:

Pre 2000	14
2000 onwards	4
Total	18





Common Groundhopper

Tetrix undulata

Identification

Groundhoppers are small relatives of the grasshoppers with typical Orthopteran hind legs adapted for jumping. Variable in shades of greys, browns and black and typically mottled. The main difference between the groundhoppers and grasshoppers is the length of the pronotum; with grasshoppers it just covers the thorax but with groundhoppers it covers the abdomen as well. The Common Groundhopper has a pronotum which is slightly shorter than the whole body length with an obvious ridge giving the little creature a hunch-back appearance. The wings are completely concealed and Groundhoppers do not stridulate.



Common Groundhopper adults top and left; first instar right



Adult left; early instar right.

Field Notes:

These small, silent Orthopterans are easily overlooked. Unlike the grasshoppers, groundhoppers over-winter as adults and nymphs so can occur on sunny days as early as March in sheltered locations.

Search in woodland clearing where moss is present. Fallen branches in grasslands and brush-fire sites on heathlands and woodlands are good places to look. They will occur with the Slender Groundhopper.

Similar Species:

Slender Groundhopper is the only other groundhopper to be found in Worcestershire. The Slender Groundhopper has a flatter back and longer pronotum.

Worcestershire Status:

Widespread but undoubtedly overlooked.

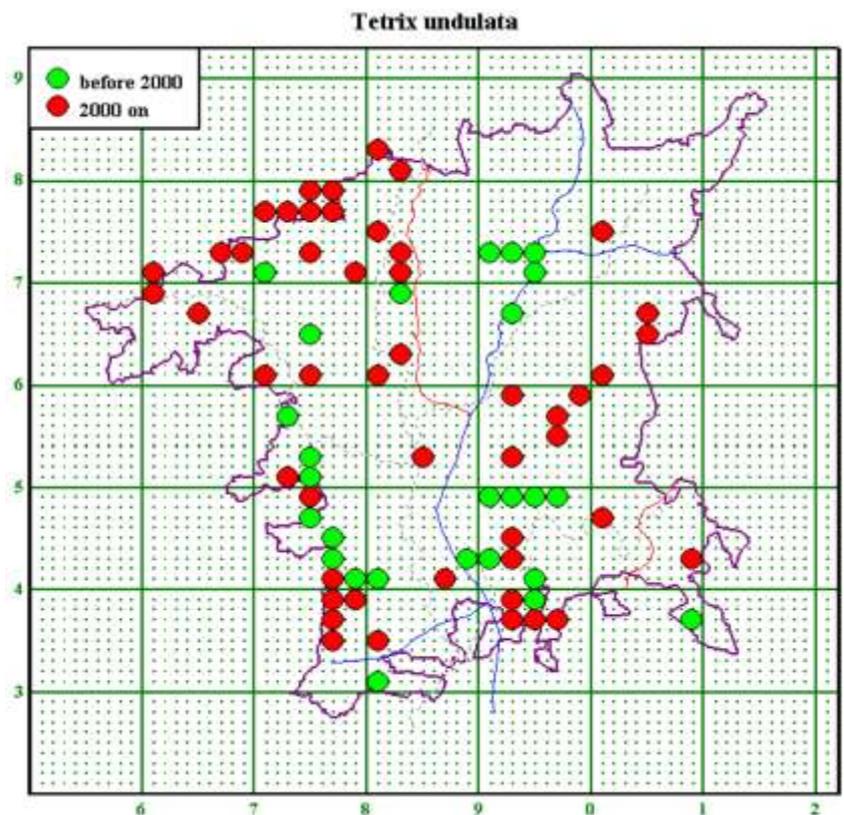
Fincher:

(*Tetrix vittata*).

Frequent in open parts of Randan Wood.....seen in every month except December & January.

Number of Records:

Pre 2000	63
2000 onwards	95
Total	158





Slender Groundhopper

Tetrix subulata

Identification

Groundhoppers are small relatives of the grasshoppers with typical Orthopteran hind legs adapted for jumping. Variable in shades of greys, browns and black and typically mottled. The main difference between the groundhoppers and grasshoppers is the length of the pronotum; with grasshoppers it just covers the thorax but with groundhoppers it covers the abdomen as well. The Slender Groundhopper has a pronotum which is much longer than the whole body length with only a small ridge. The wings are completely concealed and Groundhoppers do not stridulate.



Slender Groundhoppers; various colour forms.



Slender Groundhopper, submerged to avoiding predators

Field Notes:

These small, silent Orthopterans are easily overlooked. Unlike the grasshoppers, groundhoppers over-winter as adults and nymphs so can occur on sunny days as early as March in sheltered locations.

Search in woodland clearing where moss is present. Fallen branches in grasslands and brash-fire sites on heathlands and woodlands are good places to look. They will occur with the Common Groundhopper. Slender Groundhopper is often found at wetland sites. They swim well and can dive underwater to avoid predators.

Similar Species:

Common Groundhopper is the only other groundhopper to be found in Worcestershire. The Slender Groundhopper has a flatter back and longer pronotum.

Worcestershire Status:

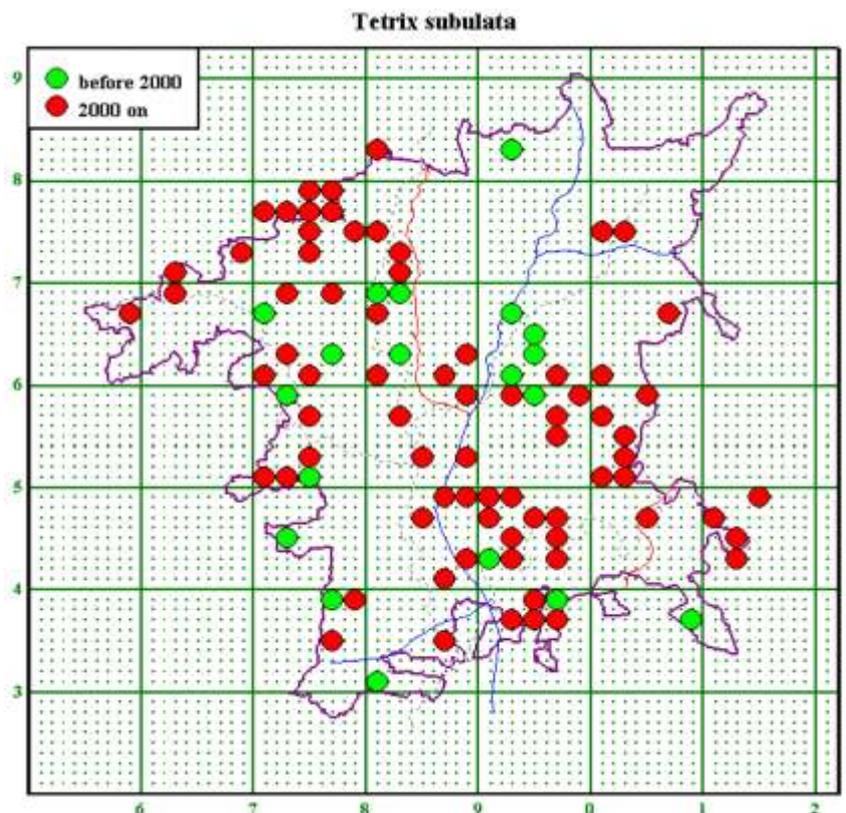
Widespread in wetlands and open woodlands.

Fincher:

No mention.

Number of Records:

Pre 2000	44
2000 onwards	136
Total	180





Common Green Grasshopper

Omocestus viridulus

A green and grey/brown grasshopper with two common female colour forms; bright shiny green on the back, sides of the pronotum, thorax and hind legs; dull green back with grey/brown sides and legs. These two forms are really quite different from each other. Males tend to be lime-green or grey/brown on the back but other colour forms do occur. Sometimes males and females can be slightly to deep pink but they are never deep red at the tip of the abdomen. The pronotum has gently curved side keels which are twice as far apart at the rear as at the front. Strong black lines run down the top of the pronotum under the white side keel lines. The wings are long but only just reach the tip of the abdomen.



Common Green Grasshopper: female (top & left), male (right).



Common Green Grasshopper late instars: male (left), females (centre & right)

Field Notes:

A species of herb-rich grassland, especially on damp sites. They can be found along sunny woodland edges and areas with Bracken which the males readily use as song posts. The Common Green Grasshopper is usually the first species to mature and can be heard stridulating from late June in some years.

Where to look:

Records suggest that this species is in decline and it appears to have disappeared from many areas of the county. This species appears to be retreating northwards in Worcestershire. It is still a common species on the Malvern Hills.

Song:

A long continuous rattling song (the typical grasshopper song). The shiny green female pictured opposite was heard stridulating.

Similar Species:

This species could be confused with some colour forms of field Grasshopper but that species has more sharply incurved side keels, can have longer wings and is a more hairy species. Stripe-winged Grasshopper is very similar and careful inspection of the wing venation is required.

Worcestershire Status:

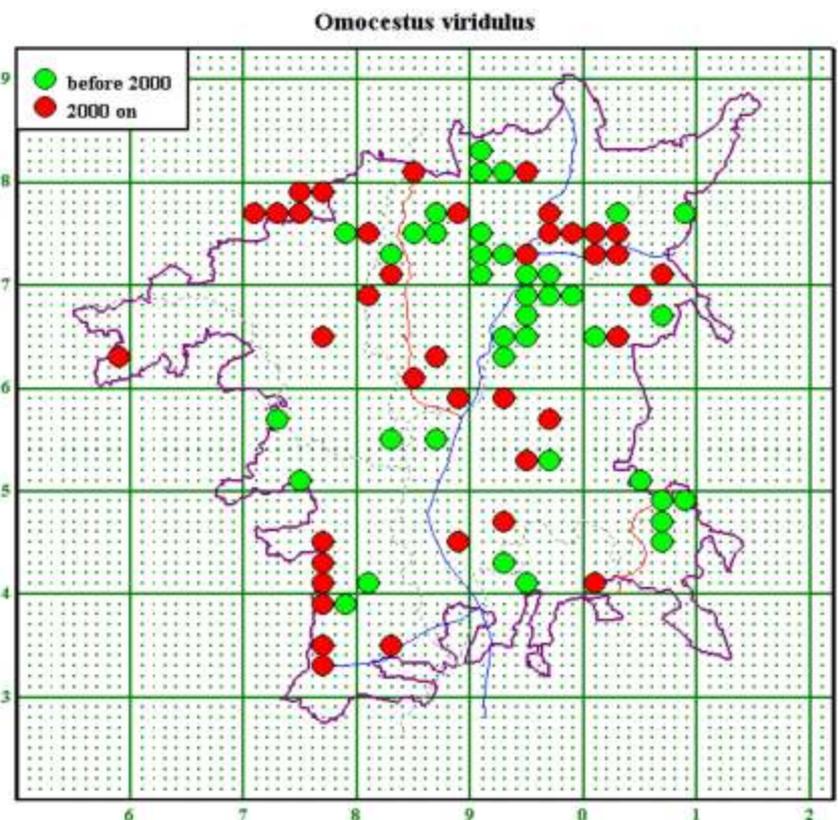
Widespread but records suggest this species is in decline.

Fincher:

Common in north Worcestershire between Bromsgrove & Kidderminster.

Number of Records:

Pre 2000	71
2000 onwards	63
Total	134





Mottled Grasshopper

Myrmeleotettix maculatus

This small grasshopper is very variable in colour and markings. It is usually mottled in appearance which gives it excellent camouflage. The pronotum is short and the side keels kick in very sharply. The female is somewhat bull-headed in profile and has antennae which are slightly thickened towards the tip. The relatively large head is a useful feature for identifying the early instars. The male's head is not so large in relation to its body but its antennae are obviously thickened and bent outwards at the tip. The mottled pattern and the shape of the antennae make this the most distinctive of Worcestershire's grasshoppers. Mature males have a red/orange tip to the abdomen.



Mottled Grasshopper: male (top & left), female (centre), early instar (right)



Examples of variation & camouflage of female Mottled Grasshopper.

Field Notes:

A species of dry grassland and heath where the soil is exposed and warm. The small size and excellent camouflage make this a trick species to find but the song is very distinctive. Males leek on lumps of dry moss or bare sandy ground and attract several females.

Where to look:

Heathland and dry acid grasslands are the favoured habitat. The Mottled Grasshopper is common at Devil's Spittleful and Hartlebury Common as well as the Malvern Hills. It is not recorded from the Lickey Hills but areas like this would be worth checking.

Song:

The song is best likened to a child approaching on roller skates. A series of drawn out 'zips' which start quiet and get louder.

Similar Species:

This species is most similar to the larger Field Grasshopper. A large female Mottled Grasshopper is similar in size to a small male field Grasshopper. The relative head size and pronotum size are useful characteristics. The antennae of the male are very distinctive.

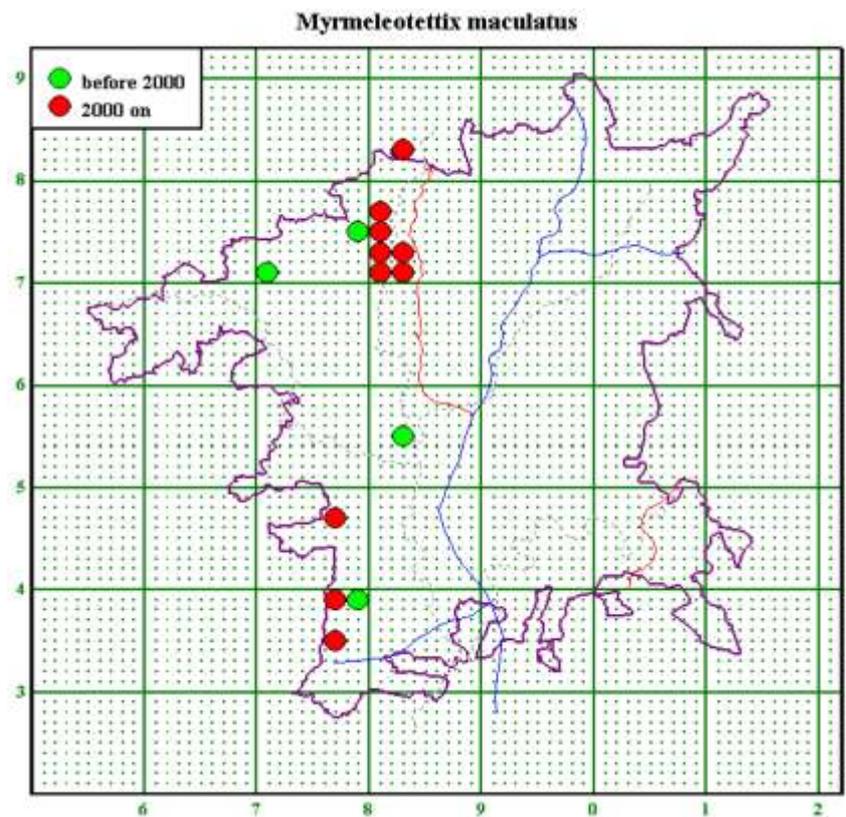
Worcestershire Status: Very local on sandy soils and other areas of short, broken turf in sunny situations.

Fincher:

....has only been found on light sandy ground at Hartlebury Common and similar ground nearby.

Number of Records:

Pre 2000	19
2000 onwards	37
Total	56





Lesser Marsh Grasshopper *Chorthippus albomarginatus*

A neat looking grasshopper with minimal or no mottling and no bright colours. Usually straw-coloured or matt green or a combination of the two, but colours are always subdued compared to other species. Both sexes are fully winged and the female often has a white line along the lower margin of the fore-wings (although this can be the case in other species as well). The hind knees are rarely darkened. The side keels of the pronotum are parallel at the front and can spread outwards only slightly towards the rear. The males' antennae are quite long.



Lesser Marsh Grasshopper: male top; female left; first instar right.



Examples of female Lesser Marsh Grasshopper variation.

Field Notes:

A fairly recent coloniser of the county. The most distinctive feature of the Lesser Marsh Grasshopper is the lack of distinctive features; general subdued tones, straight pronotum side keels and usually pale legs.

Where to look:

Lesser Marsh Grasshopper was once a species of wet grassland and marshes but may now be found in all but the driest grasslands. It is still spreading north and west so any records west of the river Severn could be new colonies.

Song:

The song is a series of soft short rattles ‘shhips’ somewhere between Field and Meadow Grasshoppers.

Similar Species:

This species is most likely to be confused with the Meadow Grasshopper, especially long-winged females of the latter species.

Worcestershire Status:

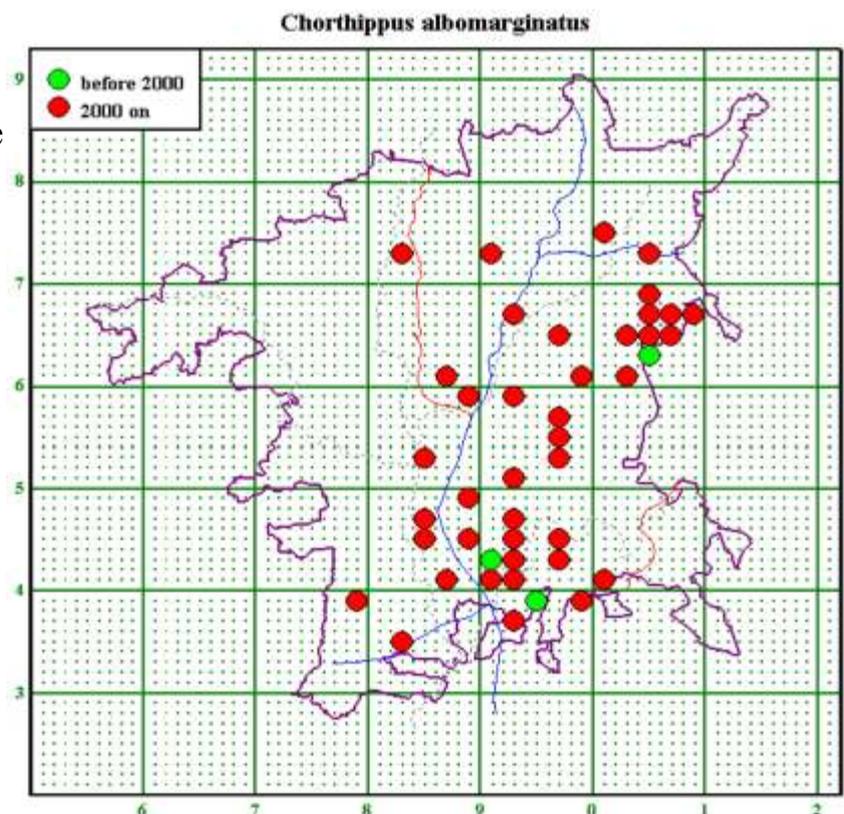
Relatively recent colonist. Common in the eastern half of the county. Continuing to spread north and west.

Fincher:

No mention. Not present in the county at that time.

Number of Records:

Pre 2000	11
2000 onwards	88
Total	99





Field Grasshopper

Chorthippus brunneus

A relatively large grasshopper with abundant hairs on the underside of the thorax and on the legs. Usually mottled brown in appearance but can be green or red/brown on top. The females especially can vary considerably in colour in large populations. The mature males are orange/red at the tip of the abdomen. The pronotum has sharply incurved side-keels which are usually well marked in white with black triangles inside towards the rear. This species is fully winged and will fly short distances when disturbed.



Field Grasshopper: male (top). female (left). First instar (right)



Examples of female Field Grasshopper variation.

Field Notes:

The Field Grasshopper can be abundant in warm localities with short turf and exposed soils. The males will sing against each other and use their long back legs to kick out at rivals.

Where to look:

Dry warm sites such as heath and hillside with patches of short turf amongst taller vegetation where they get maximum heat from the sun.

Song:

A short sharp chirp. When males confront each other at courtship lecks they sing alternatively, answering each other which gives the impression of a continuous ticking.

Similar Species:

Mottled Grasshopper is similar but smaller and their males have clubbed antennae. Common Green Grasshoppers can be similar but are not so hairy and lack the red abdomen tip.

Worcestershire Status:

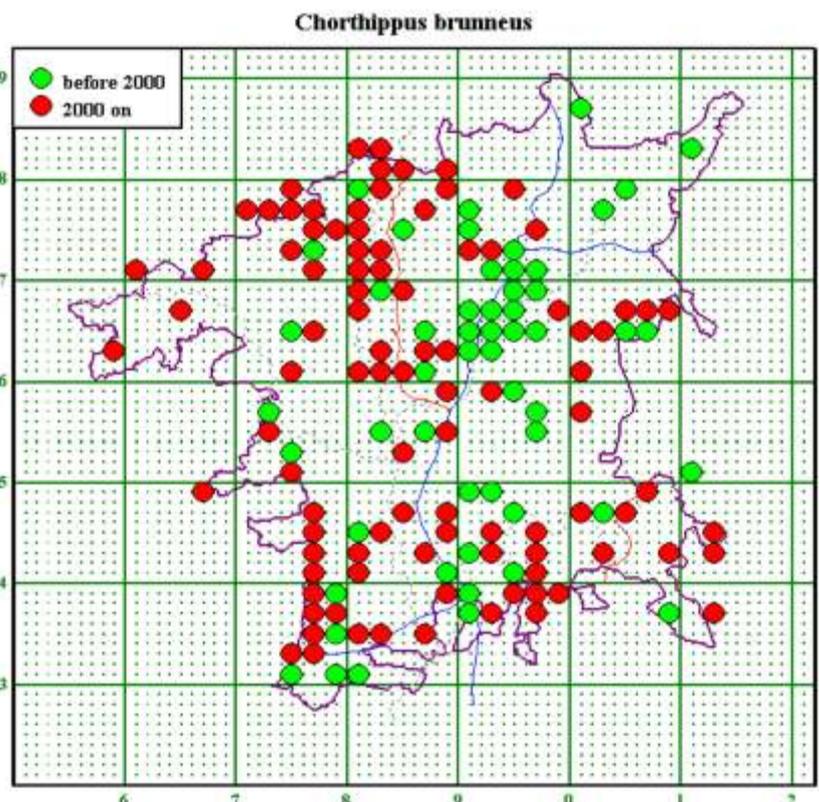
Common and widespread but appears to be in decline.

Fincher:

(*Chorthippus bicolor*).
Very common in Bromsgrove district and other parts of north Worcs., especially in dry uncultivated places.

Number of Records:

Pre 2000	121
2000 onwards	195
Total	316





Meadow Grasshopper

Chorthippus parallelus

A bright green and brown grasshopper with very dark hind knees. The underside of the mature male is bright yellow. This species is usually flightless having reduced hind-wings. The female also has short fore-wings making this a distinctive species. There is some variation in colour; all green specimens being fairly common and an unusual mottled brown form which appears to be associated with calcareous grasslands. Occasionally fully winged forms occur in both male and female, enabling flight for dispersal. The side keels of the pronotum kick in only slightly from the front and then curve out gently towards the rear.



Meadow Grasshopper: female (top). male (left). long-winged female (right)



Female Meadow Grasshopper variation; brown form and green form.

Field Notes:

A species of most grassland types that aren't mown or heavily grazed. It appears to prefer a good cover of grasses with some bare ground and moist areas are preferred but can occur in all but the driest grasslands. The mottled brown female form is most unlike other forms and appears to be restricted to calcareous sites in Worcestershire, such as Windmill Hill Nature Reserve.

Song:

Short pulsing song produced in short (two or three second) bursts.

Similar Species:

This is most likely to be confused with Lesser Marsh Grasshopper, especially the long-winged females. However the pronotum detail and overall subdued colour of Lesser Marsh should split it from this species.

Brown females can resemble the Field Grasshopper but that species has more sharply incurved side keels and has long wings.

Worcestershire Status:

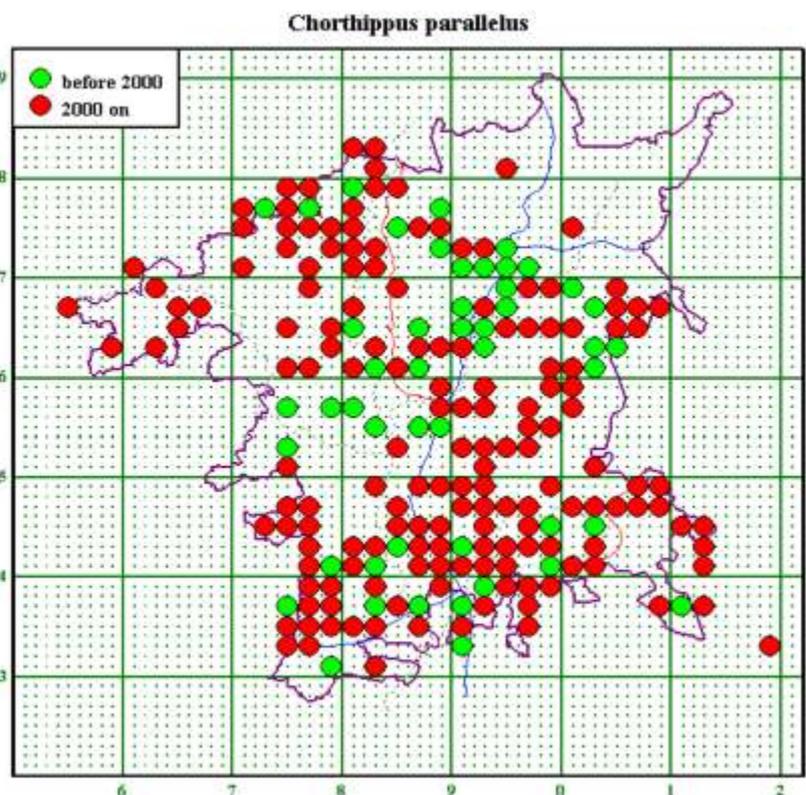
A common species found in most grassy habitats but anecdotal evidence suggests some recent decline.

Fincher:

Very common in north Worcs with a preference for grazing land.

Number of Records:

Pre 2000	163
2000 onwards	405
Total	568





Common Earwig *Forficula auricularia*

An insect which needs virtually no introduction. A dark chestnut brown earwig with pale horn-coloured legs and forceps. The flight-wings protrude from under the fore-wings. The male's forceps have obvious teeth on the 'stem' and are very hooked. The forceps vary considerably and can be greatly enlarged in some individuals.



Forceps;
female (left), male (right).



Male Common Earwig; (top of page) typical form, (top right) freshly moulted, (bottom right) form with enlarged forceps .



Robin predating a Common Earwig. An over-wintering female with her eggs.

Field Notes:

This is a very familiar insect, being found in most habitats including gardens and outhouses. The Common Earwig has a bad reputation with gardeners because of its fondness for flower petals. However it is really the gardeners' friend as it feeds on soft-bodied 'pest' species including aphids and small caterpillars. It also feeds on vegetation. The females are well known for their parental care and quite large juveniles can be found still with adults into June. The cerci or pincers are used by the earwig for defence and also for manipulating their own flight-wings back into place under the outer wings after flying. Despite the ability to fly, this species runs or drops from vegetation to avoid predation rather than taking to the air. They are readily taken by ground-feeding birds such as Robins.

Similar Species:

There are two other species of earwig in Worcestershire; Lesser Earwig is very small and hairy; Lesnes Earwig is similar to Common Earwig but flightless and a brighter reddish/brown in colour.

Worcestershire Status:

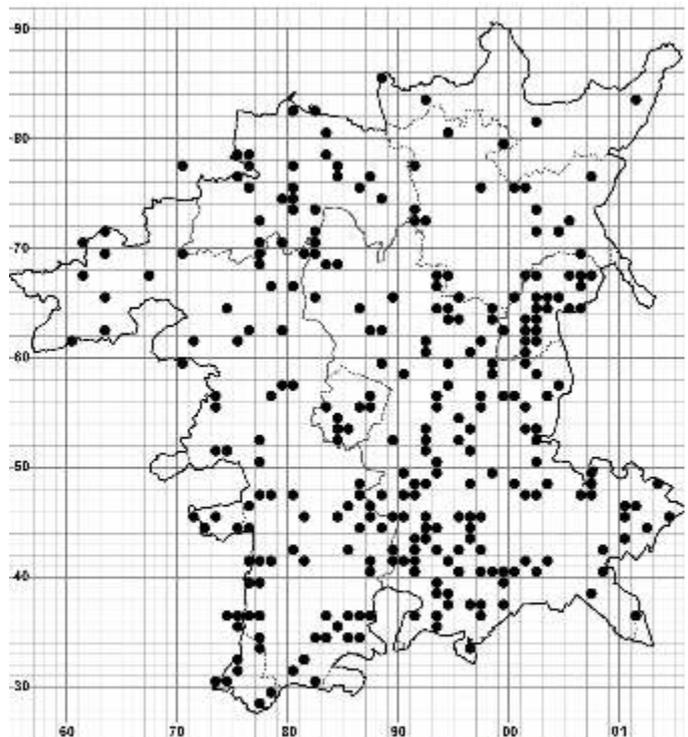
A very common insect in gardens, parks and woodlands.

Fincher:

Abundant in north Worcestershire.

Number of Records:

Pre 2000	123
2000 onwards	327
Total	450



Worcestershire Biological Records Centre
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 01827 578110 Fax 01827 578111
 www.worcestershire.org.uk



Lesne's Earwig

Forficula lesnei

An elegant earwig with reddish brown coloured head and abdomen. The thorax and fore-wings are pale brown and the legs, forceps and antennae are straw coloured. Lesne's Earwig is flightless and so has no visible flight-wings protruding from under the fore-wings as our other earwigs do. The abdomen is slightly bulbous; narrow at the point where it joins the thorax; wider in the middle; narrower again at the tip from where the forceps protrude. The male's forceps are particularly distinctive having a broad 'stem' with several small teeth and hooked tip.



Lesne's Earwig forceps; male (left), female (right).



Lesne's Earwig; female (top of page), male (right).



Lesne's Earwig (female) feeding on aphids.

Field Notes:

This is a very discrete insect and has been found by beating old hedgerows in late summer and autumn or sweeping tussock grasses from mid-summer. In Worcestershire Lesne's Earwig is associated with Old-man's-beard in hedgerows in the Avon valley.

Little is known about this species in Worcestershire but females lay eggs in deep tussock grasses from June and the young mature by August when they move up into hedgerows. They are omnivorous, feeding on pollen, vegetation and small invertebrates including aphids.

Similar Species:

The Common Earwig is darker and not such a neat insect. Check the forceps details shown on the relevant pages. Lesne's Earwig can be quite hairy and its abdomen is less parallel sided than the Common Earwig.

Worcestershire Status:

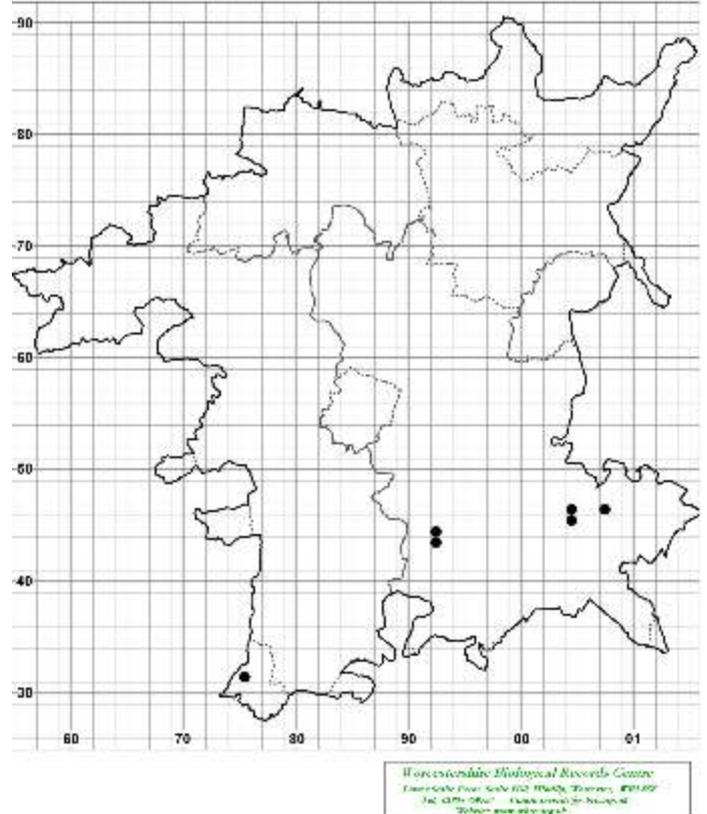
A rare, local species in Worcestershire, restricted to appropriate habitat in the Avon valley.

Fincher:

Not mentioned.

Number of Records:

Pre 2000	2
2000 onwards	5
Total	7





Lesser Earwig

Labis minor

This small dark, hairy earwig resembles a small rove beetle (*Staphylinidae*). At no more than 8mm in length this species is not likely to be confused with any other British earwig. Even when compared to similar sized immature Common Earwigs, the Lesser Earwig is distinctive, being very slender. Also the hind-wings are well developed in adults and are clearly visible, protruding below the fore-wings. The head and pronotum are very dark, the wings are brown/dusky yellow and the abdomen is a deep rusty brown. The legs are pale. The forceps are tapered in the female and only gently curved in the male, quite unlike our other species. Antennae are long.



Lesser Earwig forceps;
male (left), female (right).



For comparison Juvenile Common Earwig (left)
Adult male Lesser Earwig (right)



Lesser Earwig (above) can be mistaken for a small rove beetle.

The small size and choice of habitat probably account for the shortage of records for this species. It is an insect found in compost heaps and dung heaps but has been found in gardens. This species flies well and is attracted to light so occasionally turns up in houses. It may also be attracted to moth traps and so any small rove beetle-like creatures found in such traps should be checked carefully.

Very little is known about Lesser Earwigs in Worcestershire; one report was a female which flew into a lighted room at night; another was of a male found on Red Campion in a garden in daylight; one was also taken from a dung heap on farmland. Fred Fincher noted that he found one in early evening in woodland.

Worcestershire Status:

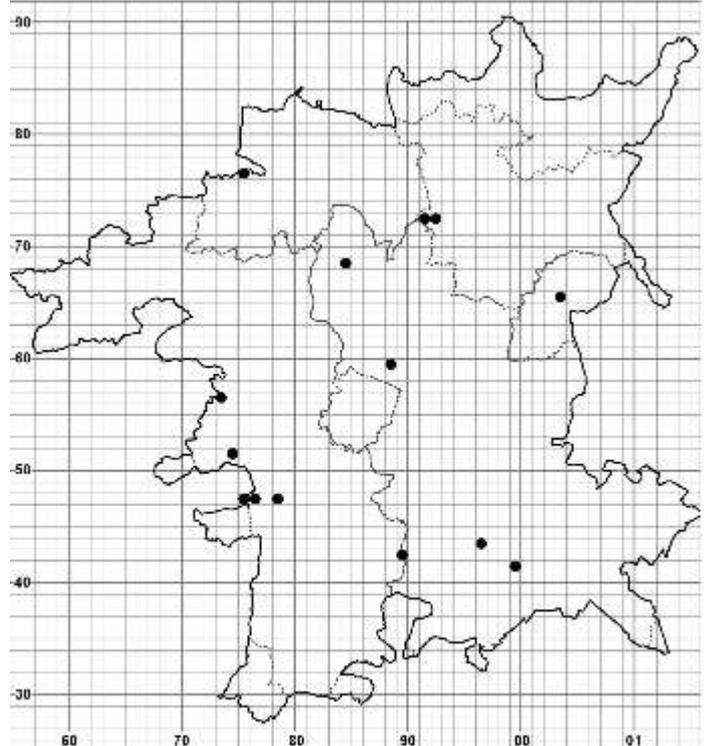
Widespread but rarely encountered.
Overlooked due to its small size and choice of habitat.

Fincher:

One specimen taken in Randan Wood...21st July 1951.

Number of Records:

Pre 2000	3
2000 onwards	15
Total	18



Worcestershire Entomological Records Centre
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 Email: records@worcestershire-entomology.co.uk



Send records to Worcestershire Biological records Centre:
records@wbrc.org.uk

Photos can be sent for identification to:
vc37hopper@gmx.com