

Weevils. Megadiverse group of beetles that everyone can love. About 60 000 of them, one in every 20 described species of everything is a weevil. As you look through the checklist of the 4150 beetles in Britain, when you get to the last 600 you have reached the weevils. This is about two-thirds of them. 63 of them are bark beetles, which are different enough in form and ecology for me to justify not including them, and more to the point, I do not know enough about them to say anything useful. This leaves 516 British species. Bedfordshire has just over half the British species: 283.



How can you tell you have a weevil? They belong to several families. There has been a lot of jostling and rearrangement with using systematic methods but I am pleased to say that we now have a robust and diagnostic character that defines them, and that is that they are the cutest beetles. In fact the only things as cute as weevils are jumping spiders, which you are unlikely to confuse with weevils. If in doubt, count the eyes. If you get to more than two, it is not a weevil.



The main weevil feature is the rostrum. This is the snout or beak or nose that sticks out in front of the eyes, and has the jaws at its tip. It is not always as long as this, but in all species there is at least more between the eyes and the mouthparts than you would get in other beetles. About 80% of them have elbowed antennae. The first section, called the scape, is much longer than the others and they are angled at the end of the first section. All of them have a club at the end of the antennae. Most species also have lobed feet, with a heart-shape segment behind the claws, this a feature shared with other families of beetles, so on its own it does not tell you that you have a weevil, but it is part of the character of most of them. They are also rather sluggish. Scurrying is not a word you often use to describe weevils, despite their name coming from the Old English wifel meaning small beetle, from a Germanic word meaning move briskly.



Many species use their rostrum to drill into the foodplant. With only two exceptions, our weevils are vegetarian, and lots of them feed as larvae inside their host plants. The female will often drill into the plant and lay its eggs in the hole. This is what makes weevils different from the leaf beetles, which are the other big family of plant-feeding beetles. Leaf beetle larvae sit on the outside of their plants and eat them like a caterpillar, whereas weevil larvae eat the plant from the inside. Again there are many exceptions to this, but we can call it a generalisation if not a rule. This is *Ceutorhynchus pallidactylus*, a very common species that eats almost any member of the cabbage family.



Having said what the features of weevils are, we'll start our tour with a useless example to illustrate them. *Anthribus fasciatus* is one of the species with a short rostrum and without elbowed antennae. The Anthribidae and related families contain about a dozen species like this. But the good news is that although they are not typical weevils they are all distinctive and easy to recognise, and about half of them are spectacular enough that they would qualify as weevil of the day if you found one. None of them is really common, which makes them more exciting. *Anthribus fasciatus* is one of the two non-vegetarian weevils. The other one is *Anthribus nebulosus*, which is like this but without the pink. They both live on trees, where they eat scale insects. The female lays its egg in the eggsac of a scale insect, where its larvae feed on the eggs and larvae of the scale. The adults are often found on blossom in spring so they probably eat pollen or nectar. I had not seen either of these species until last year when I found them both on many trees around Sandy in the spring, so I think they had a particularly good year in 2015.



Platyrhinus resinosus is another Anthribid. Very distinctive, with its suede lumpy rostrum and variegated raisin body. This feeds on fungi on dead wood. You can find it on logs or tree trunks, especially Ash with King Alfred's Cakes. If you are lucky it will be accompanied by Platystomos albinus, which has long antennae and a smiley face pattern on its wing-cases.



Our last example of the straight antennae short rostrum brigade is *Attelabus nitens*. This is one of two bright scarlet leaf-rolling weevils. The females wrap their eggs inside a barrel shape roll that they make by cutting through the tip of the leaf as far as the midrib, and then folding it up. The larvae feed on the leaf tissue inside the roll, and they will stay in it when it falls and then emerge in the spring as adults. *Attelabus nitens* is usually found on oaks, but locally it seems to be fond of Sweet Chestnut too, where the rolls are perhaps easier to see.





We can get a bit closer to the typical weevils with the Rhynchitidae. 17 species, still with straight antennae, but a long rostrum. They include some more leaf rollers, and most of them are metallic and shiny and therefore pretty. One of the commonest and easiest to identify is *Tatianaerhynchites aequatus*, with its unique combination of red wing-cases and bronze head and thorax. Common on hawthorn, blackthorn, and other trees in the rose family, easily found by beating them in the spring. You can ignore the two on the left: they are not found in Bedfordshire, but I put them in so you can see how dazzling some of the other British species are.



You might be thinking, enough of the spectacular and distinctive species, where are the small, all black, and identical looking beetles, like the Carabids. Those would be the Apionidae. This is the largest family of straight-antenna weevils, with 86 British species. A lot of them are black or dark metallic blue, but they are often a particular shade of metallic blue. You need to look carefully at their shape and hairiness to tell them apart. This gets much easier when you are familiar with a few of them, and if you realise that you most of the things you find and don't recognise will be *Ischnopterapion loti*, even though you were sure when you collected it that it was going to be something new and exciting. This is not *Ischnopterapion loti*, this is *Perapion marchicum*, which is small even for an Apionid, rather short and round at the rear, quite colourful, and you find it on Sheep's-sorrel, so it is not too difficult to identify. Together with *Rhinoncus castor* and *Apion haematodes*, it is one three weevils that you would expect to see in field of Sheep's-sorrel on the Greensand.



Weevils with specific foodplants like that are fun to find. One of my favourites is *Pseudoprotapion astragali*, which is one of the most colourful of the metallic Apionids. This lives on Wild Liquorice, which is not a common plant. The weevil is known from only a dozen or so places in Britain, but we have at least three sites for it in the county, and any patch of Wild Liquorice is worth checking. The weevils are prone to drop off if you disturb them, but if you look carefully along the stems and leaves you can sometimes see them.



At the opposite end of the scale in fussiness you have the broad-noses. We have lost the long rostrum, but we have gained elbowed antennae. There are 62/100 British species in Bedfordshire. Most feed on roots, so they do not drill in to their host plants, and they have a shorter and wider rostrum than most of the other groups. *Strophosoma melanogrammum* is as good a species as any to demonstrate them. Adults eat shoots, leaves, and buds of any trees, they come across. Lay their eggs on trees, the larvae hatch out and drop to the ground, where they feed on roots of almost any plant they come across. This group has a number of species that exist only as females, *Strophosoma melanogrammum* is one of them. They produce eggs without fertilisation, so the young are clones of the adult. Many of these weevils also have an extra set of chromosomes, so they have three copies of their genes instead of the usual two, which is a common in plants but much rarer in animals. This is a very common weevil, and if you go beating trees one of the objectives is to find something that is not this. Luckily it is easy to recognise because of the bald patch at the base of the wing-cases



What you want if you are trying to get other people into weevils is one of these. There are 16 metallic green Polydrusus and Phyllobius. Always a hit with people if you can whack a tree and get shiny green weevils to fall out of it.



We should probably mention Sitonas before we leave the broad-noses, just because some of them are so common. *Sitona lineatus* is the default one, and you will find life is easier if you assume that any *Sitona* you find is this until proven otherwise. With *Sitonas* is about the eyes, the bristles, and the stripyness. All of the *Sitonas* feed on legumes, so in broad-nose terms they are quite fussy, but *Sitona lineatus* will eat any almost legume and you can find it on clovers, vetches, gorse, broom, trefoils, and when it s not eating, on any other nearby plants.



Just before we get to the typical weevils, there is a small but distinctive group to consider. These are the flea weevils. Only 18 of them, some of them have elbowed antennae, some of them don't, they do have a proper rostrum, but they usually tuck it into the chest so you cannot see it. Another feature of them is their eyes, which are close together, and in some species they are touching. They are small, but they have big rear thighs, and they can jump quite alarmingly. You can easily find several species on oaks, willows, and other trees. *Orchestes rusci* here lives on birches.



Here we are. The weeviliest weevil of all. *Curculio glandium* is the winner of the longest rostrum competition. It uses it to drill into acorns. We are now in the group of typical weevils. If you have been keeping tally you will know we are now down to the last 285 species. I am going to split off another group in a minute, but we can deal with them when we come to the come. In the meantime let's get back to that mega rostrum. How many people have seen one of the *Curculios*? If you haven't you just need to go and beat some oak trees and this species or *Curculio venosus*, which is similar but has a slightly shorter rostrum, are likely to fall out. They are both common and easy to find. The other four British *Curculios* are much scarcer, but we do have them all in Bedfordshire, so do look out for them.





The miniaturised version of the Curculios are the Archariuses. They are much smaller and all black above and white-scaled below. They both live as larvae inside galls. *Archarius salicivorus* is a nice example of fussy weevil. It lives on galls on willow leaves, usually those caused by *Pontania* sawflies. The weevil drills a hole into the gall, and eats the egg of the sawfly if it finds it. Then it turns round and lays its egg in the tunnel, and rams it home with its rostrum. The larvae hatch out and eat the plant gall tissue. Until they are fed up, then they pupate in the gall.



There is a lot of diversity within the typical weevil group. They don't all have comically long rostrums. This is one that doesn't, *Gronops lunatus*. But I find it grotesquely appealing, with its cratered surface and its head like the skull of a drowned sheep. It feeds on Sand Spurrey and pearlworts and you can often find it on the sides of the paths at The Lodge where both of those plants grow.



Another of my favourites are the figwort weevils. Four in Bedfordshire, that you can easily find by looking in figwort plants. With a bit of luck you can get all four together on one plant. They are easily told apart by their patterns.



The figwort weevils are perhaps the most similar to the final group. These are the Ceutorhynchus. The Ceutorhynchus are cute, even more than the average weevil, but the name comes from Greek words meaning I hide my snout. Which they do. They have all the features of the typical weevils, with the elbowed antennae, lobed feet, and long rostrum. But they are rounder and shorter-bodied than most other typical weevils, and they have the rather adorable habit of tucking their rostrums in and sinking down into their thoraxes when they are alarmed..



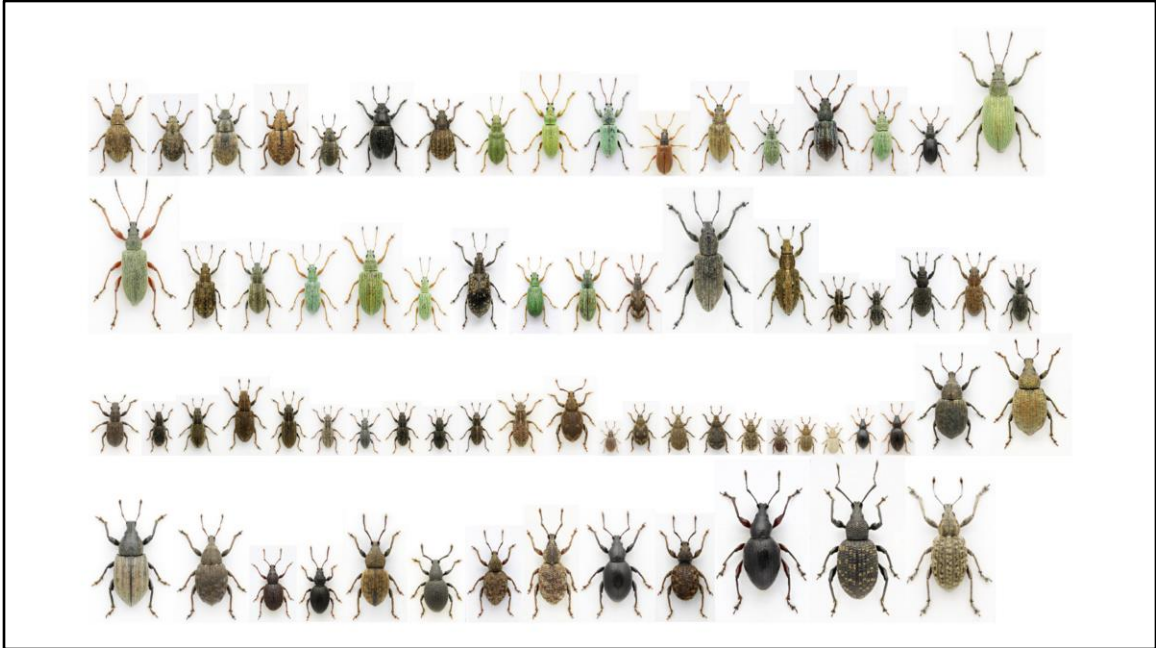
This group includes one of our commonest weevils, *Nedyus quadrimaculatus*. All you need to do to find this is take a net to a patch of nettles, and it will probably be there. It usually has two or four white spots on its back.



You are also quite likely to find *Parethelcus pollinarius*, which is bigger and wider and often greyer, and has two headlights on its bottom.



And it also includes the wonderful snow weevil *Poophagus sisymbrii*, which you can find on water-cress. The cabbage family is particularly popular with the Ceutorhynchs. Other plant families that are particularly rich in weevils are the legumes and the composites, and among the trees the willows, oaks, birches, and the rose family. They are all good places to search for weevils. Which you can do just by looking on plants. Peering at the leaves and stems is a good enough method for lots of things, and grubbing about at the base of them, especially under leaf rosettes will reveal even more. If you want to find more things more quickly you can sweep the vegetation with a net or tap trees and bushes over a beating tray. I use a photographic reflector for this, which is cheap and easy to fold up and carry around.



We have a full set of modern keys to British weevils thanks to Mike Morris. Andrew Duff has recently published volume 4 of his keys to British beetles, this includes all the weevils. I have to admit that I am not very good with keys, so the way I identify weevils is first by looking through the plates in *Russelkafer Baden-Wurtembergs* or my own collection and matching up the weevil with those. If you take the broad-noses, you can easily narrow down your potential species from 100 straight away. If it is green it is one of these, if it is small and scaly it is one of these, if it has beady eyes you are up here, and if it has long antennae and oval wing-cases you are down here. That gets to me a genus or two and then I can use the keys in combination with photos from there. But I still prefer a field guide, so I have made my own from visiting museums and making notes on the species. I recommend this as the best way to learn them, even if you are not going to start your own reference collection.



# tinyurl.com/weevilguides

	<i>Polydrosus cornutus</i>	<i>Polydrosus pilosus</i>	<i>Polydrosus pubellulus</i>	<i>Polydrosus confusus</i>
Horns on wing covers	Dark, short, almost flat. All over wing covers.	Dark, short, almost flat. All over wing covers.	Brown, short, flat to leaning.	Dark, short, almost flat.
Flat scales	Dark.	Dark.	Dark.	Oval to narrow.
Front	With a tooth.	With a tooth.	With a tooth.	With a tooth.
Horns	Dark scales and hair scales.	Dark scales only.	Dark scales only.	Brown and scales and hair scales.

Marked as weakly **aliquod metallicus**. *Polydrosus*. These four species are **variably coloured**: the scales may be green, pulled pink or yellow, brown, or golden-brown.

The **marked appearance**, dark legs, tooth on the front femur, and broad, prominent shoulders separate *Polydrosus cornutus* and *pilosus* from other *Polydrosus* with red scales. *cornutus*, *pilosus* and *confusus* have hair scales only. *Polydrosus* *pubellulus* and *serripennis* have a wider pronotum, thicker antennae with pig-antennal sockets, narrower scales, and smaller, more bulging eyes.

*Polydrosus cornutus* 4.0-5.0 mm. On a variety of trees and shrubs. Widespread throughout Britain, very common in the England and Wales, rare in Scotland. *cornutus* = like a deer

Oval scales and hair scales on front femur. Joint of femur and tibia **red-brown**. One of the commonest broad-necked weevils found by beating trees and shrubs in the early summer.

*Polydrosus pilosus* 3.0-3.5 mm. On a variety of trees and shrubs. Widespread in Scotland, north Wales, and northern England. Very rare in southern England. *pilosus* = hairy

Usually larger than *cornutus*, but there is some overlap in size. Smaller but more rounded eyes. Hair scales longer, oval to spinose longer, but there are no oval scales on the front femur. Joint of tibia and femur dark. There is perhaps a stronger ridge along the margin at the base of the antennae in *pilosus*, but I find this difficult to see; it needs high magnification and good lighting, but even then it is often hidden by scales.

These two species often have hairs ridges down the body. They have wider pronotums and less prominent shoulders than other *Polydrosus* and *Polydrosus* *serripennis* (brown and red-brown) have similar antennae, longer eyes, and red tooth on the front femur. *Polydrosus* *albifrons* has rounded head, and bearing hairs on the wing covers. *Polydrosus* *formosus* has larger, flatter eyes, and a cone-shaped head. *Polydrosus* *marginatus* has a longer pronotum, and very narrow scales.

*Polydrosus pubellulus* 3.0-3.5 mm. On a variety of plants in saltmarshes. Around the coast of England and Wales, and on the Solway in Scotland. *pubellulus* = beautiful

Often abundant, with scales missing, but even then *Polydrosus pubellulus* can be identified by its red-brown legs with a tooth on the front femur, and the wide pronotum. The femur is sometimes darker in the middle, but there are not as extensively blackish as those of *confusus*. *confusus* *Polydrosus confusus* has dark femora, longer antennae, narrower scales, and narrow oval scales on the front femur.

*Polydrosus confusus* 4.0-5.0 mm. On grass swards and brown Gytisus. Widespread on heath in southern England and Wales, rare in East Anglia and northern England. *confusus* = being together

Often appears **orange**, best separated from *pubellulus* by the dark femora and longer antennae, but habitat is likely to be near fish dale.



# twitter.com/WeevilRS



Distinguishing *Polydrosus cornutus* from *Polydrosus pilosus* is not easy. They are so similar that *pilosus* was overlooked in Britain until the 1930s. However, as long as the scales have not worn off, it should be possible to identify. The red-brown joint and the red scales on the femur of *cornutus* can be seen with a strong hand lens or a slide and an *oculus* lens in the field. Any individual that does not have these features is worth checking under a microscope, especially if it comes from northern Britain.

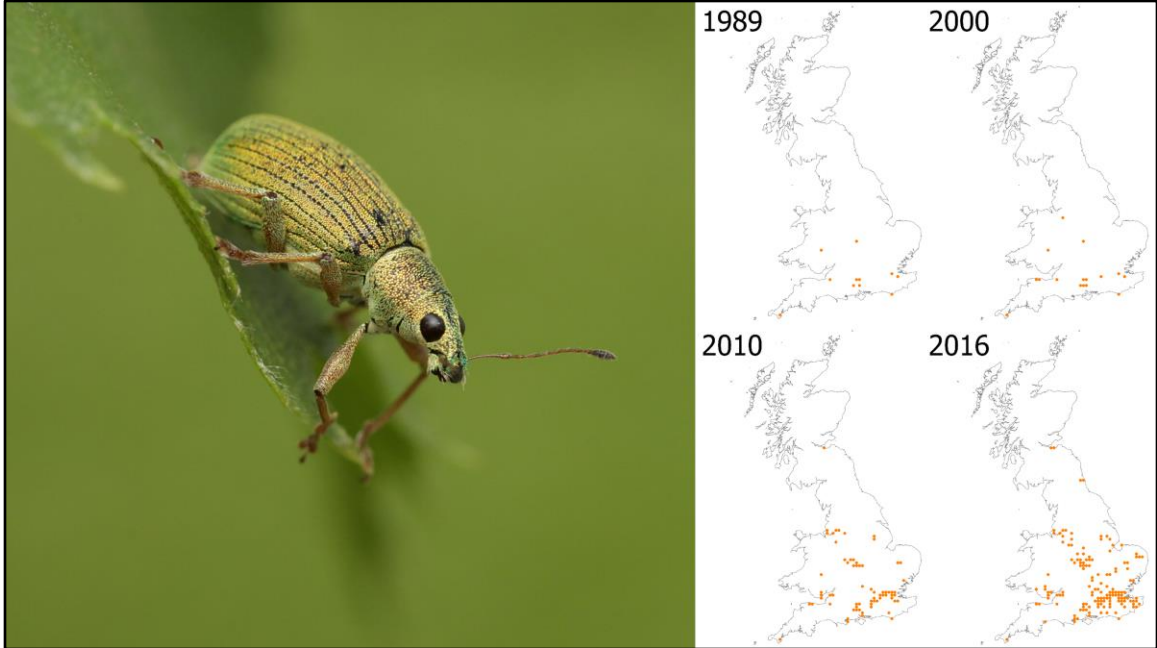
If you want to see some of those they are available online, there are some examples on the table at the back. The recording scheme has its weevil of the month, which is something that can be easily identified, and this appears on the scheme twitter feed.



Do not worry if you find things difficult to start with. We all began somewhere. There are some nice easy things you can start with, and you can come back to trickier species later when you are wiser and more experienced. There are still a good number of species you can identify in the field with a good hand lens. All these species we have seen today can be recognised easily just by looking at their colours and patterns.

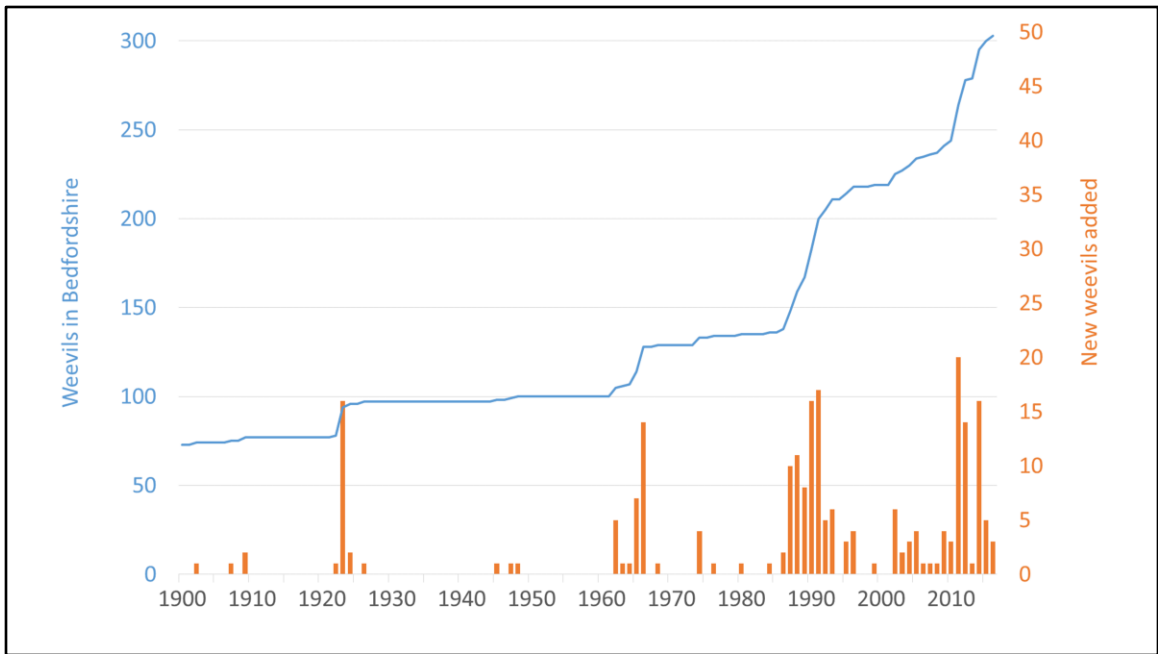
The image shows a screenshot of the iRecord website. The top left features the iRecord logo and navigation links: Home, Record, Explore, Forum, and How do I...?. Below this is a section for mobile apps with 'Download on the App Store' and 'GET IT ON Google Play' buttons. A 'Welcome to iRecord...' message is followed by a photo of people in a field and a paragraph explaining the site's goal: 'The goal of iRecord is to make it easier for wildlife sightings to be collated, checked by experts and made available to support research and decision-making at local and national levels. Join iRecord now to share your sightings with the recording community, explore dynamic maps and graphs of your data and make a real contribution to science and conservation.' Below this is a 'Recent records' section with six thumbnails of bees: *Dictyosporus (Phaenodorsus) asonice*, *Dictyosporus (Phaenodorsus) asonice*, *Bombus (Megalombus) lucorum* (Large Red-tailed Bumblebee), *Andrena melancholica* (Mantle's Horned Bee), *Bombus (Psithyrus) agrorum* (Forest Cuckoo Bumblebee), and *Bombus (Psithyrus) agrorum* (Forest Cuckoo Bumblebee). To the right of the website is a map of the United Kingdom with numerous grey dots representing records and several orange dots representing first records for a 10 km square.

If you do find weevils, please do send in your records. Wilf Powell is the Bedfordshire recorder, and Adrian Fowles is keeper of the national scheme records. If you enter your sightings on iRecord we will pick up from there. There is plenty of scope for you to make new discoveries even if you just concentrate on the easy to identify species. This map of *Platyrhinus resinosus*. The orange dots are those where the first record for that 10 km square came from iRecord. I expect a lot of them are from people who would not usually send in beetle records, but they found something unusual and distinctive and they could enter it on iRecord, and these make up 30% of the scheme records of this species since 2010. Modern records are missing for so many species, so they particularly important.



As with many insects, weevils are changing their range. This is the spread of *Polydrusus formosus*, which for a long time was a very scarce species of southern Britain. We have been able to map its spread partly because people have found a shiny green weevil and taken a photo of it and sent in the record. It is easily identified from a good photo, so we have been able to pick up records even when they have been misidentified people have not known what it was. 17% of the records of this species in the last five years have come from iRecord.

If you find weevils in Bedfordshire, do send in your records. Wilf is the county recorder, or if you put them on iRecord they will get to the national recording scheme and back to Wilf.



We are still learning and discovering lots. The blue line is the number of species on the vice-county list since 1900, and the orange bars are the number of new species added each year. As you can see the rate of additions shows no sign of slowing down. Perhaps you can find the next new one.

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Thanks to Wilf Powell, Adrian Fowles, Tom.bio QGIS, all the recorders who have sent in records,  
University Museum of Zoology Cambridge, Angela Marmont Centre for UK Biodiversity

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