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Norfolk & Norwich Naturalists' Society

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Cover image: *Norwich Starling murmuration (Brian Macfarlane)*

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Toad-in-the-hole....

This edition of *'The Norfolk Natterjack'* brings a new look to the publication as it has been produced with colour throughout. This has been both a challenge and a joy to have more freedom to place articles and images in a rather random fashion. I have noticed though it is important that any images received are of the highest resolution and preferably uncropped. As with such images it is more likely that they can be reproduced with a minimum resolution of 300 dpi at a size that is sufficient to show them off best.

My thanks as usual to those members that have sent in articles/images and also to Ellie Farrow & Richard Watts for the new cover Toad. Please send in your contributions in good time for the next edition and have an enjoyable Spring.

FF

Blue Roundhead

Sylvia Fairhead

The Blue Roundhead fungus, *Stropharia caerulea,* appeared at the base of my brother's compost heap at Ditchingham, October 2014.

Ed - It is one of very few blue-green fungi and looks quite beautiful when young and fresh, however, it is, one of the so-called 'Magic Mushrooms' containing hallucinogens (psilocybin / psilocin). These chemicals block the action of the nerve impulse transmitter serotonin in brain tissue, which if eaten causes a relatively short-lived hallucinogenic effect, similar to that produced by LSD.

The compounds present are Class A drugs and it is an offence to import, export, produce, supply, possess or possess with intent to supply in any form. There is no offence of possessing, however, if 'Magic Mushrooms' grow uncultivated on your premises.

Blue Roundhead growing in compost (top) and showing the arrangement of its gills (bottom).

Images: *Sylvia Fairhead*

Ref: *Collins Fungi Guide,* Stefan Buczacki, Chris Shields & Denys Ovenden, HarperCollinsPublishers Ltd (2012)

What killed these hoverflies?

Roger Tidman

On 27 July 2014 on the drive of my house which is in Briston I found a group of *Melanostoma* hoverflies stuck to a grass head and clearly dead (see image).

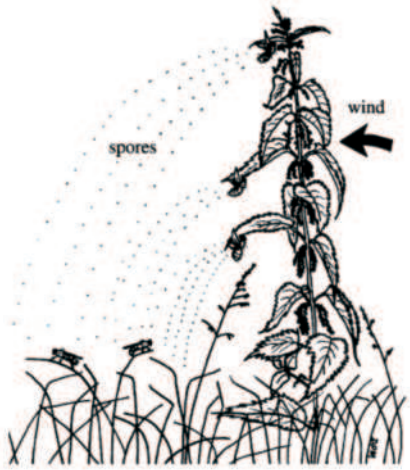
What could have killed these hoverflies and why at that particular point?

Ed- These unfortunate insects have been infected with the fungus - *Entomophaga muscae.*

The Entomophthorales are fungal pathogens that are fairly specific with regard to the groups of insects affected and within hoverflies, *Melanostoma* and *Platycheirus* species are particular susceptible.

Fungi invade insects by penetrating their cuticle and once a hoverfly is infected the fungus causes the insect to climb a grass stem and clamp on before dying. Hyphal filaments also help bind the insect to the grass stem. Death is caused by tissue destruction as the fungus rapidly multiples throughout the body and, occasionally, by toxins produced by the fungus. The fungus frequently emerges from the insect's body to produce spores, which from the secured vantage point can then spread the infection by wind, rain or through contact with other insects.

A study of Yellow Dungflies concluded that terminally ill flies select an elevated position on a plants's down-wind side. They grip the underside of the leaf at its tip and orient to face toward the centre of the plant. Because healthy flies typically perch on the upper surface of low vegetation, they are likely to be exposed to fungal spores falling down upon them from above.



Spore distribution

Ref: A Parasitic Fungus Infecting Yellow Dungflies Manipulates Host Perching Behaviour. Author(s): D. P. Maitland Source: Proceedings: Biological Sciences, Vol. 258, No. 1352 (Nov. 22, 1994), pp. 187-193 Published by: The Royal Society.

Wandering insects

Nick Owens

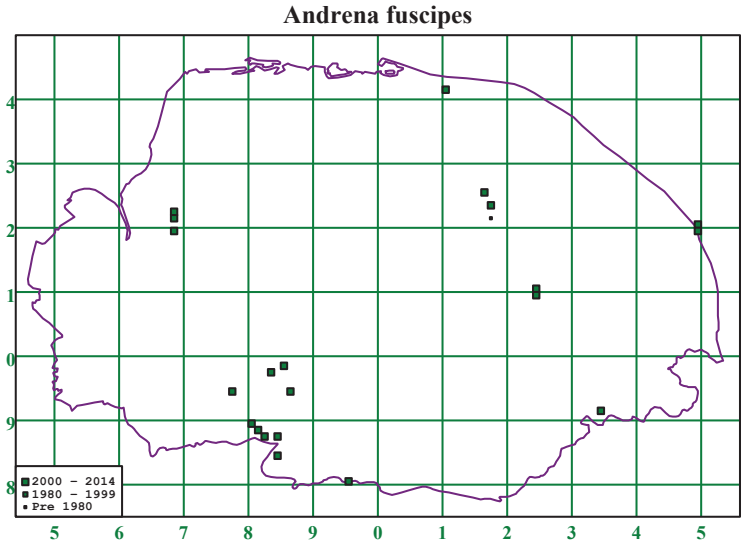
A recent visit to the island of La Palma in the Canary Islands set me thinking about how insects arrive in such places and what happens when they do. Darwin suggested that insects on islands should be either poor fliers, meaning they do not fly out to sea and die, or very good ones, allowing them to reach new land. La Palma has 46 species of bee and Tenerife 84, while the Galapagos Islands have just one - a large carpenter bee. It is said that the number of species on an island depends on its age, it size, its distance from the mainland and the variety of habitats it contains. La Palma is 1.7 million years old against Tenerife's 12my. La Palma is only about half the size of Tenerife and farther from North Africa. Both islands contain a similar wide range of habitats including Laurel cloud forest (Laurisilva), rich cultivated land with almond and orange groves (with canaries singing in them!) and arid volcanic areas. The moist north-east trade winds create the cloud forests characterised by majestic Canary Pines, Laurel and Heather trees, draped with *Usnea articulata* lichens (thanks to Peter Lambley for the identification!). The Galapagos Islands are 400 miles from the South American coast and this distance seems to be too far for most bees.

The Canary Islands are about 60 miles from Morocco, so bees presumably do not frequently arrive from outside the archipelago. Canary Island populations are therefore largely genetically isolated from mainland populations, and to some extent from those on other islands. Of the 180 species of bee in the Canary Islands, about half are endemic species or sub-species. In some cases there appear to have been secondary arrivals from the mainland resulting in mainland species living alongside Canary Island sub-species. To complicate things further, some bees have different subspecies on each island.

Bombus canariensis and *Andrena chacogastra palmaensis* (endemic ssp) - La Palma
Images: *Nick Owens*

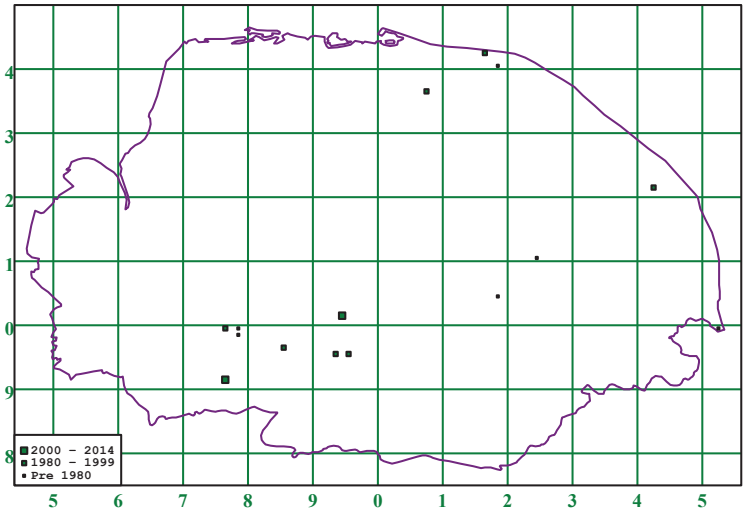
What has this to do with Norfolk? I have been mapping the distribution of the 42 or so species of *Andrena* mining bees in the county using the county data set, together with records provided by the Bees, Wasps and Ants Recording Society (thanks to Tim Strudwick for these). Some Andrenas specialise on particular flowers or habitats and are therefore confined to habitat islands surrounded by arable fields, so their populations can become genetically isolated, just like oceanic island populations. These habitat islands can be quite small, for example a small patch of woodland or an area of heathland. It is thought that small populations can become inbred, reducing their overall fitness and chances of long term survival.

The Heather Mining-bee *Andrena fuscipes*, which uses only *Calluna* pollen, is a species whose populations may already have difficulty in dispersing to new sites in the county. If a Heather Mining-bee disperses more than a kilometre or two from its birthplace, it is unlikely to find any heather (except perhaps in the Brecks) and will not be able to breed. This means that the remaining population will, on average, contain individuals which are less inclined to disperse; the individuals with the genes for dispersal (one imagines longer wings, get-up-and-go behaviour etc) will leave the population and not return, leaving the shorter-winged, less active individuals behind.



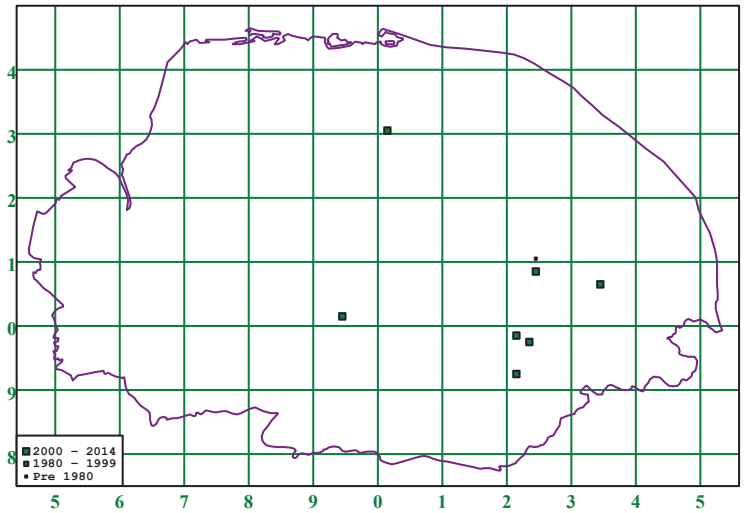
County records of Heather Mining-bee *Andrena fuscipes*, which uses only *Calluna* pollen. Some populations may have become genetically isolated.

Andrena coitana



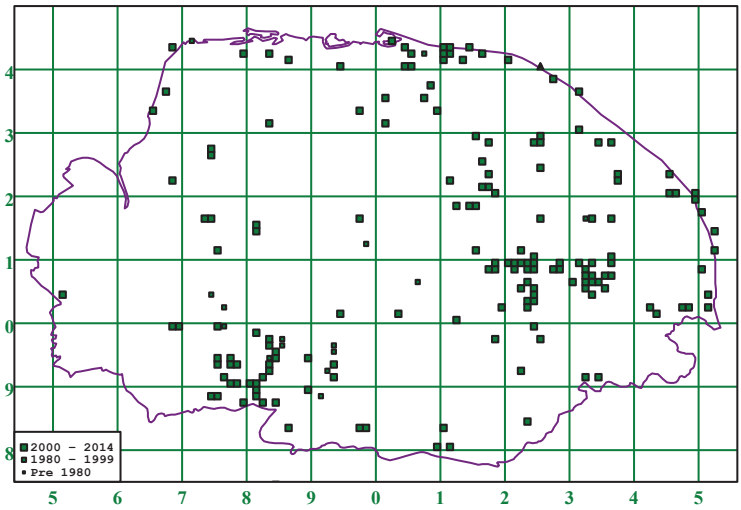
County records of Small flecked Mining-bee *Andrena coitana* which has few recent records. It likes open heathy woodland. It seems to be declining but it may be under-recorded.

Andrena helvola



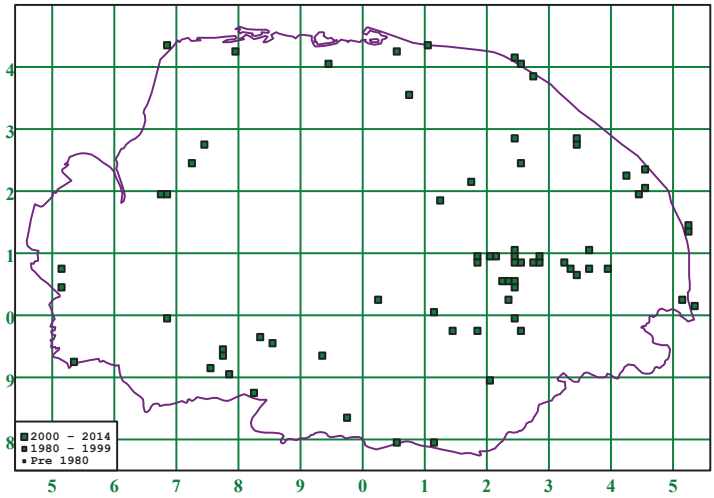
County records of Coppice Mining-bee *Andrena helvola*, a species confined to woodlands. Does it have difficulty dispersing to new sites?

Andrena dorsata



County records of Short-fringed Mining-bee *Andrena dorsata* which uses a wide variety of flowers and habitats and has long been abundant in the county.

Andrena flavipes



County records of Yellow-legged Mining-bee *Andrena flavipes*. All records are post-2000: this bee uses a wide range of flowers and is spreading northwards nationally.

For dispersal behaviour to be maintained, some of the dispersing insects (or their descendants) must return to the original population. This happens, for example, when Painted Lady butterflies make their way back to North Africa in the autumn. If this doesn't happen we end up with a population which will not, or cannot, fly very far. Silver-studded Blue butterflies on Kelling Heath are in this category; they are reluctant even to cross the road. A healthy insect meta-population consists of groups which disperse backwards and forwards between sites with suitable habitat. At any one time only a proportion of sites may be occupied, partly due to chance and partly because some sites become temporarily unsuitable. This dynamic state allows gene flow between populations. A further advantage is that insects can get away from some of their parasites, by leaving them behind when they disperse. For example, it may take a while for a Red-legged Nomad Bee *Nomada rufipes* to find a new colony of its *Andrena fuscipes* host.

Andrena fuscipes (f), Kelling Heath and its parasite *Nomada rufipes*, Stanta
Images: *Nick Owens*

We know very little about how bees and other insects disperse, how far they can travel or what makes them decide to go. It is probably mated female bees that disperse soon after hatching. The Yellow-legged Mining-bee *Andrena flavipes* has colonised the whole county since the year 2000 and its population is moving northwards nationally. Its parasite, the Painted Nomad Bee *Nomada fucata*, seems to be catching it up a few years after its host arrives at each site. A couple of years ago Grey-backed Mining-bees *Andrena vaga* (which use sallow pollen) arrived on the south coast of England from France, and last autumn Ivy Bees *Colletes hederae* arrived at Weybourne and Sheringham, perhaps from outside the county (see *Natterjack* 128 p.6 & 108 p. 1-3). We are now very familiar with the Tree Bumblebee *Bombus hypnorum* which was first seen in Norfolk in 2009 and is now very common. This bumblebee still appears not to have a cuckoo bumblebee attacking it, and it has already reached Scotland. These species all came from expanding populations and their food plants are widespread.

We do not know whether a species like *Andrena fuscipes* can disperse between the remaining patches of suitable habitat (heather heathland). We also still have incomplete information about the distribution of this bee and Norfolk's 180+ other bee species, though knowledge has greatly increased in recent years. In order to be sure of conserving species such as *Andrena fuscipes* we need to provide them with large areas of habitat (to reduce inbreeding) and habitat stepping stones close enough to allow the populations to disperse between them. Fortunately the Norfolk Wildlife Trust is actively engaged in enlarging some of its heathland reserves, and improved management is happening on many of Norfolk's heathlands after urgent reviews in the 1990s.

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An early Spring?

Francis Farrow

Silver Birch catkin

Was 2015 an early spring? From my own observations it was similar to what we had come to expect of the winter - where cold wintry days were interspersed with relatively mild ones, a start/stop winter and in North Norfolk it was a very similar start to spring.

I spotted a Buff-tailed Bumblebee out gathering pollen from Gorse on February 9th, an early date indeed. I also saw my first Adder on February 25th and for an exposed coastal site such as Beeston Common this was again considered an early date. On the other hand the Common Frogs did not return to spawn in the pond until March 1st, whereas in recent years it has been around a week earlier except after the long winter of 2012/13 when they didn't spawn until 13th March. The Common Toad tends to follow the frogs after two weeks or so but they only started to put in an appearance in the pond from March 23rd. Likewise the Small Tortoiseshell (March 6th) and Chiffchaff calling (March 20th) were both later this year than 2014 when the dates were March 3rd and March 9th respectively.

Overall long-term studies tell us there is a trend to an earlier Spring but on small individual sites like Beeston Common local conditions can have a moderating effect.

Starling mumuration in Norwich City Centre: where has it come from?

David White

In the last few years, noisy groups of adolescent Starlings have become a feature around the Forum in Norwich City centre. Every evening from mid-summer onwards, 100-200 birds have collected together on the tower of St Peter Mancroft Church where their chattering regularly draws the attention of passers-by. The birds would leave well before dusk and so this was clearly a pre-roost gathering, but I was uncertain where the roost was located.

Numbers seemed to increase in the late autumn in 2014 and by November there were perhaps 350 birds present around the church on most afternoons. This Starling flock was clearly not the only one in the city centre and, with increasing numbers of birds present, it soon became clear where they were congregating. By early January 2015 the citizens of Norwich were being treated to nightly spectacles of over 1000 birds performing their aerial dance over St Stephens Street. Appearing at exactly the same time each night, the wheeling, turning and swooping flock was visible over a wide area with good viewing points at the junction of Westlegate and Red Lion Street, and from cars negotiating the St Stephen's Street roundabout in rush hour. Just after the sun set, the Starlings settled into their communal roost on rooftops between Surrey Street and St Stephens.

Perhaps surprisingly, it was not until the 29th of January that the spectacle was described in the local press and NBIS posted links to video footage on their Facebook page.

How unusual is this event? The Norfolk Bird Atlas (Taylor & Marchant, 2011) states that Starlings tend to be "less conspicuously urban in winter" and it appears that this is the first time – at least for some years - that a congregation of starlings of this magnitude has occurred in the city centre. So where have they come from? Has the local starling population significantly increased, or it is that an existing roost has relocated? Traditionally in winter, Starling numbers in Norfolk are boosted by birds arriving from the continent but the Atlas notes that far fewer having been arriving in recent years. The increase in young Starlings around the Forum in late summer could indicate that numbers of birds with in the city are genuinely increasing but, if this is the case, the reasons why are unclear. It will be interesting to see if the mumurations are a one-off or will continue in future years.

Whilst not the largest murmuration in Norfolk, the city centre Starling flock has to be one of the easiest to see. I have enjoyed watching the birds, but it has been equally fascinating watching the reactions of shoppers and commuters. A Starling mumuration appears to be one of our wildlife spectacles that literally stops people in their tracks.

Three Owls

Tony Howes

Way back in the mists of time, when I was a small boy, I had my first encounter with an owl. Our garden at Wymondham backed on to a grass meadow where cattle grazed during the summer months. This particular day there were no cattle, only a beautiful white bird flying over the grass. I remember clearly being awestruck by this experience and the feeling has not diminished over the years, whenever I see a Barn Owl I feel that same thrill.

Nowadays I go in search of birds with photographic equipment, and the owl family are always rather special for me, they have an almost mystical aura and I feel a quickening of the pulse whenever I see one.

Just over the last month or so I have had the good fortune and pleasure of being able to photograph three members of the family. Barn Owls in this part of the world seem to be doing O.K. any suitable habitat seems to have them.

I came across one on the Halvergate marshes, typically hunting over rough grassland for voles. At the same place the Short-eared Owl had its portrait taken, they hunt in much the same way as the Barn Owl, but these beautiful, charismatic birds are only with us during the autumn and winter months, they return north for the breeding season.

Barn Owl in hunting mode

Short-eared Owl in full flight

Last, but not least in the 'hat trick' is the Little Owl, they look aggressive little blighters with their hooded yellow eyes, full of character and personality. This cheeky chappie was photographed at the entrance to a hollow oak branch which had blown off two years ago in a gale. A friend and I sawed out a four foot length with the hole in, nailed roofing felt on the ends and hoisted it back up the tree, it's held in place by strong wire. We were pleased that the Little Owls have taken to their reconstructed house.

Images: *Tony Howes*

Little Owl re-homed

Short-eared Owls

Hans Watson

Many bird-watchers will readily acknowledge that they have an affection for owls, and I am certainly one of those bird-watchers. Observing even the most common species of owl presents quite a challenge, mainly because many are only active during the hours of darkness. It has therefore been a special treat for those of us in the "owl fan club", to have had so many Short-eared Owls to watch during the winter of 2014/2015. It has been one of the best winters for seeing these handsome owls that I can remember, and on occasions several could be seen at the same time. I was told that one estimate put numbers well into double figures for the area between Gt Yarmouth and Reedham. On several occasions at Burnham Overy, I had the pleasure of watching Short-eared Owls and Barn Owls hunting at the same time, although the Barn Owls wisely kept well away from their larger relatives. Short-eared Owls have a rather well deserved feisty reputation, and readily chase other predators away from areas where they are hunting. Watching two Short-eared Owls having one of these disputes reveals a very surprising degree of flying agility, not apparent when they are seen in normal hunting flight.

Short-eared Owl in flight - 'ears' not seen

The 'ears' referred to in the name of these birds, are not, of course the actual ears, but ornamental feather tufts on the top of the head. I had been watching these lovely birds for years, before I saw the 'ear' tufts, and used to joke that they should be called Earless Owls, rather than Short-eared Owls. The reason that I had not noticed the 'ears' , was because I had only seen the birds in flight. It seems that the 'ears' only become apparent when the bird is perched, and even then they are sometimes hard to spot.

Short-eared Owl at rest - 'ears' showing

White Pheasants

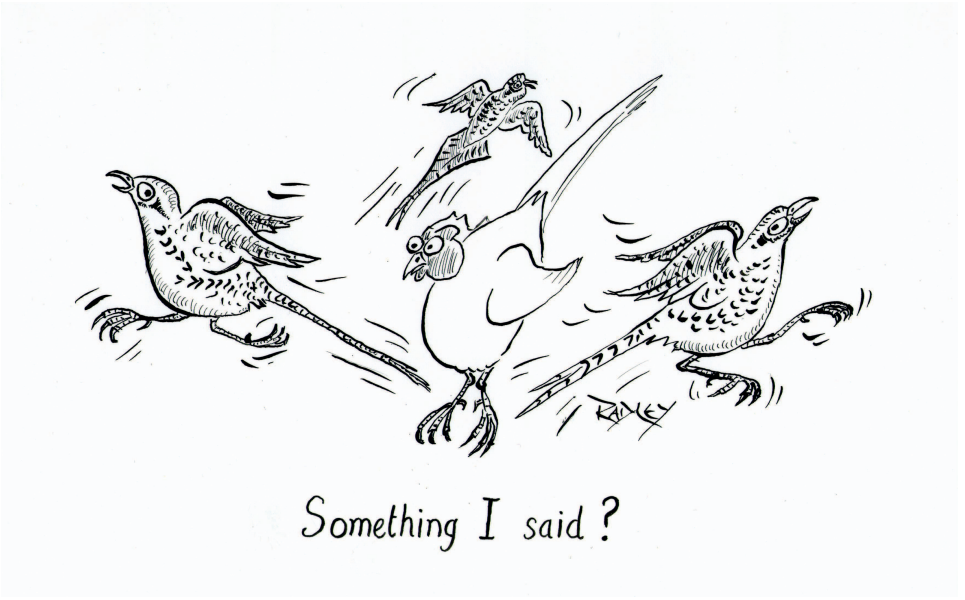
Kevin Radley

Tony Howes' article on Common Pheasant *(Phasianus colchicus)* colour variants in Natterjack 128 brought to mind a conversation I had recently with a work colleague who has been in the shooting scene since a boy and now runs his own shoots. Although I may not agree with everything he gets up to, his knowledge of keepering and his 'sport' is unquestionable.

I mentioned to him that I too had seen two white pheasants on my travels just before the New Year, a cock and a hen. He informed me that in the past some game breeders had the knowledge (some still do) to produce a few of these white birds each season to use as 'markers'.

The normal camouflage colouration of the pheasant, particularly in hens, makes locating birds difficult on shoot days, but with a tendency to flock when newly released from their holding pens, one white bird amongst them stands out against the drab background colours of the winter countryside, giving away the location to the keeper and waiting guns.

The white birds were spared an untimely death by lead shot as it was 'not the done thing' to shoot them but apparently they tended not to have a long life as their more natural predators also found them easy to find due to their colouration (or lack of it). For this reason, the practice was not a great success and so is not in common use today.



A Fabulous Day

Elizabeth Dack

I went to Cley in early March. On the day the Sun came out, there was hardly any wind and it was a beautiful blue sky. I started to feel excited as I heard the sound I knew to be Bearded Tits. I hadn't seen any for months! Suddenly they all came out of the reeds. They were so close I managed to get lots of cracking shots. I said to my friend if we go home now I would not feel disappointed, however, we went onto the beach and we were welcomed by a Meadow Pipit. Just when you feel it can't get any better, a flock of 18 Snow Buntings appeared!! I thought they had left our shores and I had missed them this last year. Their colours were a rich blend of oranges, white and browns with just a few whiter ones.

We had a picnic lunch and made our way along the coast road to Burnham Overy where we spotted a very pale Common Buzzard up a tree. We parked and walked towards the sea and was again lucky. Although a way off I saw and photographed a Red Kite. What an end to a fabulous day.

Clockwise: Bearded Tit (male), Bearded Tit (female), Snow Bunting and Red Kite

Images: *Elizabeth Dack*

Some observations on Fallow Deer

David White

On the 21st December 2014, I watched a group of 7 Fallow Deer does in open farmland near Heath Lane north of Lenwade. The herd included a very pale individual and two very dark animals, with the other four animals being a more usual chestnut colour. I noted at the time that one of the chestnut-coloured animals had a pronounced limp. Later, on the 13th Jan 2015, driving down the Holt Road I happened to notice a group of fallow deer a little way in to the woodland at Horsford. On stopping, I saw the group was again of 7 females and with the same combination of colour forms as I had seen at Lenwade about a month earlier. Could this actually be the same group? After waiting for several minutes, the herd started to move and, sure enough, one animal was dragging its left rear leg.

Fallow Deer

Clearly this could have been a second herd and the similarities in the composition of the group just a coincidence, but Fallow Deer are known to be very mobile and have large home ranges. The distance between my two observations is only around 11km. However a quick trawl of readily accessible peer-reviewed journals indicates that average home ranges seem to be 2-5km^2 for female Fallow Deer (although larger ranges are suggested in the grey literature).

Checking my notebooks, I see that three of my (rather meagre) seven recent sightings of Fallow Deer have been in Horsford Woods in January, in 2010, 2013 and now 2015. This cluster of records could simply be because I drive that way quite regularly - and as I tend to look out for deer as I have seen them there before! But I wonder if some seasonal movement is involved? Perhaps the animals move from more open land after the autumn rut, to the comparative shelter of the plantations as the weather gets colder?

Strange Hare Behaviour

Tony Howes

While watching and photographing Brown Hares recently I was surprised at the behaviour of one individual, when I first spotted it from the car it was laying down in Autumn sown barley about three inches tall, even so it was not easy to see, so well did it merge into the general ground colour, and, as hares tend to do, was laying in a slight hollow.

After some time with no movement from the hare my attention was taken elsewhere by a Carrion Crow landing in the field, it began walking about looking for food. Slowly it moved in the direction of the hare. When it was within twenty feet or so the hare, with no warning, sprang out of its 'form' and ran towards the crow, the bird took to wing and flew a few yards with the mammal in hot pursuit following each twist and turn. Each time the crow landed the hare raced towards it, even jumping into the air with its front legs outstretched, similar to a cat reaching for a bird, this strange behaviour went on for several minutes, I had the strong impression that this was a game they were both playing.

After a while they both seemed to lose interest in their 'frolic's', the crow flew away, and the hare looped back to the exact place it had been laying. A very strange encounter, I have never seen, or read, anything like it before, Mother Nature always has new mysteries to solve, long may it be so.

Hare chasing Carrion Crow - Image:*Tony Howes*

The Norfolk Herbarium 'Gridding' Project

Jo Parmenter

Our Norfolk County Herbarium is housed at Norwich Castle Study Centre. For those not familiar with herbaria, plant specimens are attached to a sheet of paper, so as to show the various parts of each plant; leaves, flowers, roots, etc. to best effect. The sheets of paper also detail each plant's scientific name (as it was at the time of collection), together with the date and place of field collection, and sometimes notes on the habitat from which the specimen was collected. More recent specimens also have grid references. The sheets of paper are arranged into folders and the whole collection is typically arranged according to the rules of taxonomy.

The Kew website describes a herbarium as 'a collection of preserved plants stored, catalogued, and arranged systematically for study by professionals and amateurs from many walks of life', but this description does not do it justice: a herbarium has a very wide and varied number of possible uses (someone at the Smithsonian has come up with 72, and doubtless more will emerge with the passage of time). There are probably 20 or so truly fundamental reasons for maintaining national and county herbaria, but to my mind, some of the most important are to:

- discover or confirm the identity of a plant;
- provide material for making morphological measurements and data for revisions and monographs
- provide location data for planning field trips
- serve as a secure repository for type specimens
- provide material for DNA analysis
- record historical biodiversity and provide information on species which are now rare, scarce or extinct species
- provide information which may be used in comparative studies in plant distribution
- provide context and an evidence base for publications, including county floras
- provide material for teaching
- promote appreciation of botanical diversity by making specimens available for viewing by students, researchers, and the public.
- provide information on 'lost' sites or habitats which may be helpful in undertaking or prioritising habitat restoration work
- provide information on other species, e.g. invertebrates or diatoms inadvertently collected along with the plant
- provide information on the collectors themselves: who were they, where did they live and what motivated them: information which may be useful for researchers in other fields such as social historians

The County Herbarium contains an enormous amount of plant material: there are over 12,500 sheets for species collected from Norfolk alone. The Herbarium has until recently been relatively inaccessible to the public, however over the past 10 years or so, a series of dedicated volunteers and staff, notably Hatty Aldridge, Gillian Beckett, Chris Roberts, Colin Dunster, Bob Leaney and Tony Irwin, have been systematically working their way through the collection, checking identifications for some of the more taxonomically challenging specimens, re-mounting material where it has become unstable, and gradually collating all of the material held into a series of folders which ordered taxonomically, with each being are identified by the name of the species as it appears in the 2nd edition of Stace and Kent's List of Vascular Plants of the British Isles and its supplement. These are stored in the herbarium store room at Norwich Castle Study Centre, and may be viewed by appointment. Further volunteers have entered the data given on each herbarium sheet into a digital catalogue, with the long-term aim of creating a searchable digital resource; and thus the collections have been much improved as a reference resource and made more readily available.

Polystichum aculeatum collected in Dereham, from the Geldart collection. Undated, likely to have been mid-late 19th century

Image: *Hatty Aldridge*

The Norfolk Herbarium includes around 1600 specimens from the Geldart Collection, which was collected in the latter half of the 19th century from locations throughout the UK, together with a few specimens from further afield. Herbert Geldart (1831-1902) was a member of the Norfolk and Norwich Naturalist Society from its inception, and served as its President on a number of occasions during the late 19th century. Many of his papers, mostly on aspects of Norfolk botany are published in The Transactions of the Society. Geldart collected most of the specimens himself, although the collection also benefited by around 500 specimens when Geldart was bequeathed the herbarium of his friend Hampden Glasspoole (1825-1887), a botanist from Ormesby, in east Norfolk, who put together a herbarium of specimens which include a large number from Great Yarmouth and the eastern Norfolk Broads. Further material was provided to Geldart by other eminent botanists, including Sir William Hooker, Sir Joseph Hooker and Sir James Paget; and substantial numbers of specimens were also supplied by Arthur Bennett, Dr Frederick Long, Robert Wigham, Rev. James Brown, J.W. Ewing, Rev. W. Linton, F. Mackie and John Syme. The collection put together by Herbert Geldart was augmented after his death by his daughter Alice, who subsequently donated the collection to Norwich Castle Museum.

Other important collections within the Norfolk County Herbarium are summarised below (Table 1), and include the herbaria of Eric Swann, who, with C P Petch,

Table 1 Norfolk County Herbarium Collections

Collector	Date range of collection material	Number of specimens	Other
Edith Davie (1870s-c1939)	1874 - 1925	764	Mainly collected in East Norfolk and especially Flegg; a clergyman's daughter, many early specimens were obtained close to the churches and rectories her father visited.
Frederick Long (1840-1927)	1843-1930	2229	Practised as a doctor in Wells-next-the-Sea until 1899, when he retired to Norwich.
John Drew Salmon (1802–1859)	1808-1888	3464	Spent his early working life in Thetford, at which time he collected Breckland flora.
Herbert D. Geldart (1831–1902	1799 - 1913	7445	
Philip Rumbelow (1879–1954)	1830 - 1949	619	A Yarmouth naturalist, he collected most of the specimens himself
Hampden G Glasspoole (1825-1887)			A botanist from Ormesby, Norfolk who put together a herbarium of specimens from southern England and the environs of Great Yarmouth and the eastern Norfolk Broads.
Eric Swann (1904-1989)	1875-1989	5768	An amateur botanist, Swann worked as a bank clerk in King's Lynn.
William A. Nicholson (1858–1935)	1850-1926	128	Worked for Gurney's Bank in Norwich
Francis H Barclay (1870-1935)	1866-1916	636	Lived in Cromer for most of his life and was a member of a well-established Norfolk family
Alice Geldart (1862–1942)	1880s-1910s		Was interested in the history of botany and the biographies of famous national botanists and their Norfolk contemporaries
Frederick Robinson	1846-1930	868	Member of a Watton family of solicitors, he was an eminent Norfolk botanist. Collected most commonly in Norfolk (and especially Breckland) and discovered a number of plants around Watton that were new to Norfolk.

published the definitive 'Flora of Norfolk', which he wrote over a 20 year period and William Nicholson, who spent over thirty years writing and editing the 1914 'Flora of Norfolk'. Material collected by Kirby Trimmer, who published the earliest Flora of Norfolk in 1866, is also contained within the Herbarium.

As an ecologist and landscape archaeologist, the herbarium, for me, brings the past alive. I can read through lists of species collected at lost sites, such as Ormesby Common, a tract of wet mire and heathland, which is thought to have been located at the site of the present day waterworks, and visualise how it might have appeared to Hampden Glasspoole when he collected his specimens, which included Bog Pimpernel, Water Purslane, Marsh Gentian and *Carex trinervis*. Incidentally, Ormesby Common was the only known UK site for this last species, which typically grows in wet dune slacks, and without the specimens which reside in our museum, there would be no incontrovertible evidence for its presence in the country.

The collectors I find myself most intrigued by are the women: Alice Geldart and Edith Davie. I should point out that I am in no way a feminist. I was fortunate enough to grow up in the 1960s and 1970s, and, by the time I started work, gender was no longer an issue. For Alice and Edith, however, the world was very different. Neither of them married and perhaps this is because they never found the right person; although I think it more likely that it was by choice. Had they married and borne children, this would have significantly precluded plant collection. As women of independent means, they had a degree of control over how they wished to spend their lives which was unusual at that time.

Primula veris collected at Carleton Rode and Oby, by Miss E Davie in 1887
Image: *Hatty Aldridge*

Last autumn, in a fit of enthusiasm sparked by a throwaway remark by Bob Ellis, I embarked on a project to determine a grid reference for all of the locations from which herbarium specimens have been collected in East Norfolk, ably assisted by Hatty Aldridge and Bob Leaney.

My aspiration is to identify sites to the monad (1km x 1km square) level, but realistically, given that locations are often described only by the parish in which they fall, and, bearing in mind that the 1850s collector would not have had the same map resources which are available to us and could actually have been plant hunting across the boundary in the next parish without even realising it, identification to a tetrad or even hectad (10km square), is perhaps a more realistic goal. However, there are other little bits and pieces of evidence which can be used to pinpoint the location more reliably that one might first imagine.

Even seemingly casual remarks on the herbarium sheet can turn out to be useful. For example, Goldilocks Buttercup was collected by Mr S T Taylor from 'near Mr Barnard's' in Bracon Ash, in 1859. A little research revealed that at that date, Mr

Barnard resided at Mergate Hall, which turns out to be immediately to the south of the hamlet. 'Near Thorpe Asylum' proved more problematic, as the site of the asylum is bisected by a tetrad boundary, so I still have no idea whether the record was from TG20U or TG20Z.

By factoring in other variables, such as "What soil types does the species need?","What sort of habitats does the plant grow in", "Where might such habitats have been found in that locality at the time when the specimen was collected", and even "What do we know about the collector, and their typical haunts more information can be inferred as to the probable location of the plant. This is where it gets really interesting, as I have to cross reference what we know about the ecology of the plant with the local geology, geomorphology, soils and hydrology, and also the landscape/habitats present at the time it was recorded, in order to establish the most likely location of the record.

Thelypteris palustris, collected by Arthur Preston from Ranworth on Sept 16th 1879.
Image: *Hatty Aldridge*

Parliamentary Enclosure led to a complete restructuring of the Norfolk landscape. Vast tracts of common wetland and heathland were enclosed and drained or otherwise improved, thus changing the countryside beyond recognition. Nearly 85% of the area of the unimproved commons was lost over a hundred year period between 1796 and 1891. When assigning grid references to the early herbarium specimens, it is therefore important to be wary of making erroneous assumptions about sites. For example, pre and immediately post enclosure, there was a lot more semi-natural habitat in the county than there is today, and if you, for example, have a rare bog sedge which is today only found at Smallburgh Fen, it is dangerous to assume that old records of that species would also have come from Smallburgh Fen. For pre1850s records (the wet common in this area was enclosed in the 1820s, but would have proven difficult to effectively drain), the plant could conceivably have been collected from anywhere between Smallburgh Fen and Wayford Bridge.

I am finding St Faith's Bog, which once supported all three species of *Drosera*, particularly challenging. It is variously assigned to either Newton St Faith or Felthorpe by 19th century recorders, and collecting of bog and mire plant species was mainly carried out in the 1830s and early 1840s, which may suggest that the site was lost soon after, presumably to enclosure and land drainage. Felthorpe was enclosed at a relatively early date, in 1779, which tends to suggest that the bog was on the Newton St Faith side of the parish boundary. I believe that it would have been located on the poorly drained stagnogley podzols of the Felthorpe Association and in all likelihood around the headwaters of the Spixworth Beck. Much of this area has of course been drained for forestry and agricultural use. If anyone has any theories on its location, I would be very pleased to hear from you. I can be contacted on jo.parmenter@tlp.uk.com or 07710 252468.

HAVE YOU SEEN ANYTHING?

Kevin Radley

Have you seen anything? Is a question I'm often asked on return from, or whilst wandering around the Ted Ellis Trust reserve at Wheatfen. A question that is a little ambiguous, not because I haven't seen anything, but what exactly does the inquisitor want to hear. For instance, if they are a bird person they want to know what unusual birds may have been spotted; if it's a sunny day in June it almost certainly means have I seen a Swallowtail or maybe it's a dragonfly person who wishes to know the whereabouts of any Norfolk Hawkers. Anything other than their main interest is often superfluous, so stereotyping people accordingly I try to give the appropriate reply. I don't always get it right but then their next question is usually more specific. Conversely, if someone of my acquaintance asks the same question of me it invariably just means: have I seen a Swallowtail – in any stage of its lifecycle – or an Otter.

So on a particularly fine morning in May as I head down the lane to the fen – the scents of Cow Parsley and may that line the wayside exaggerated by the deep intakes of breath that I take due to the exertions of cycling – I determine to record all the sights and sounds of my visit in a notebook and spout forth there-from to give a true and full answer to ***the*** question if asked today. I put my bike in the rack behind the Warden's Office and walk back across the empty car park toward the reserve. I have the place to myself.

As I walk past the house I hear the monotonous call of a Cuckoo from not too far away, a backdrop to the closer Chaffinches and Blackcap from within the garden. I also hear unusual trumpeting calls from somewhere over the fen. It takes me a few moments to realise I am listening to Common Cranes; not common to Wheatfen. Proceeding along the boardwalk next to Home Dyke their calls subside and are replaced by the chattering of a Reed Warbler and Sedge Warbler singing in stereo over on Home Marsh. A little blue damselfly takes wing from the overhanging vegetation as I round the corner of Penguin Dyke. I pause for a moment to listen to the descending song of a Willow Warbler and the bubbling call of a female Cuckoo in response to a male.

Common Valerian is growing quickly now along Eleven Bridges, with evidence of flower buds on some. A newly arrived Whitethroat, who favours this spot each year, scolds me as I continue along the pathway which oozes underfoot emitting that wonderful ripe 'boggy' odour while countless colourless damselfly tenerals make their maiden flight. I follow a Peacock butterfly and a male Hairy Dragonfly that both keep a few paces ahead of me and as I approach the corner to Smee Loke I see the tail end of a Grass Snake disappearing into the undergrowth, disturbing him with my too heavy footfall.

Yellow Flag irises are opening along Smee Loke adding splashes of colour to a sea of green. While gazing into the clear water below a little bridge, I spy the footprints of an Otter embedded in the silt and some shiny black Whirligig beetles, indeed whirling on the water's surface. I reach my favourite point to look for Swallowtail butterflies and stop. More flags are open, advertising their wares for any Swallowtails that may be about, but only bees are paying them any attention. A Peacock butterfly is nectaring on a Cuckoo Flower and on closer inspection I find the bright orange egg of an Orange-tip butterfly under the flower head of another. A specially selected Buckthorn is being attended by a Brimstone butterfly who bends her abdomen round to deposit eggs on newly emerged leaf buds.

The Cranes start off again, honking, from over the river at Strumpshaw whilst three Cuckoos depart silently from the old crack willow, flying line astern. High above, so that it is just a speck against the vastness of the blue, a male Marsh Harrier tries to attract the attention of a female, who flies at a lower level, with a high-pitched almost imperceptible (to me) whistle.

I head back, slightly disappointed that I have not seen a Swallowtail today, but reflect on all the things I have seen and heard or smelled or experienced at this lovely place. Returning across the gravel car park, David the Warden is sitting outside his office in the sunshine: "Well, have you seen anything?" he asks. I start to reach for the little black notebook stuffed in my back pocket but instinctively decipher the question and reply "Nah" in a despondent tone. "Never mind, have a cup of tea," he returns sympathetically. Now that's something I always like to hear.

The appeal of rarity

Tony Leech

Should I be embarrassed about my fascination with rarity? I am, just a bit. I can't hide the thrill I get when I find something unusual – or at least something I haven't seen before. My first (ever) Clouded Yellow at Watermill Broad in 2013 or the chance encounter with a Green-flowered Helleborine in the Gresham's Woods a few years ago. (If ever there is a more insignificant orchid I really don't want to see it!). Shouldn't I simply revel in being immersed in a wild place or entranced by a common flower or butterfly? Yes, that too.

I am not alone. Ask someone whether they are a birdwatcher and they will often reply, "Yes – but I am not a twitcher." Twitchers will travel anywhere to add a rare bird to their list, often to the detriment of both bank balance and relationships. But if the rare bird comes to you (as a Hawfinch did to our garden a few years ago) what a thrill! As a youngster I was a list-maker (a male thing I'm told – that's a relief). Adding a new plant etc. to the list was always exciting and if it had one or more stars to its name so much the better. The stars came from my first proper field guide to flowers, the *Collin's Pocket Guide to Wild Flowers* by McClintock and Fitter. One star meant only locally common; two meant scarce and three was for real rarities – even the Green-flowered Helleborine only manages two.

The reasons for rarity are numerous. Peter Marren, in his very readable book *Britain's Rare Flowers* suggested that that some species were born rare, some achieved rarity and some had rarity trust up on them. There are good ecological reasons for being 'born rare', for example populations of top predators cannot be stable unless their biomass is twenty or more times less than that of their prey, and so on down the food chain. Since top predators, for example Barn Owls and Otters, must be large to catch animal prey, their numbers have to be very low. One way of succeeding through natural selection is to be a specialist, to be very good at doing something that potentially competing species find more difficult. The downside of this strategy is that the organism may become totally dependent on another single species, and if this is not common, neither will it be.

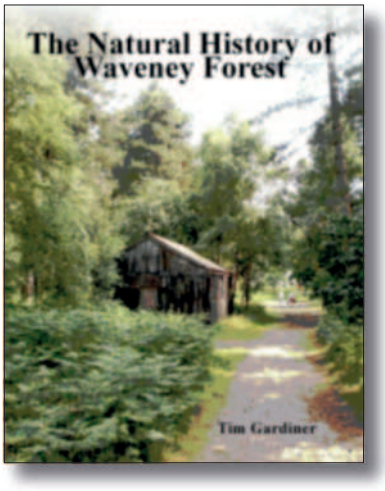
Evolution is a continuing process and benefits to some, for example, a more aggressive form of a parasite, will reduce numbers of others. Sometimes species can experience reduced fertility for no obvious reason, such as Twinflower *Linnaea borealis* in Scotland. These 'achieve rarity' in Marren's terms but most rare species have 'rarity thrust upon them', directly or indirectly, by man. Often this is through habitat loss but pollution and competition from introduced species play their part. This may be one reason for celebrating rarity – the realisation that things are not as bad as they could be; cold comfort indeed.

When I analyse my own feelings about rarity I realise that the thrill is more in the finding than the seeing. Being taken to see a rare fungus has nowhere near the

appeal of finding, and recognising, something less rare on my own. After working out what I have, I make for the Norfolk Fungus Database to see if I have a 'first' for Norfolk. If I have, it just means I was in the right place at the right time, so what? I still need to tell someone! I suspect that our fascination with the rare arises from a fundamental human trait that has aided survival, the ability to recognise the unusual and then to work out whether it offers an opportunity or a threat.

The Natural History of Waveney Forest

by Tim Gardiner



A new book documents the wildlife of Waveney Forest in east Norfolk near Great Yarmouth. The Forest is a large area of coniferous woodland, interspersed with remnant heathland and bog. The Forest has been the subject of much interest recently due to proposals for large-scale gravel extraction. The threat of quarrying has attracted a huge amount of opposition and renewed efforts to document the wildlife found in the Forest. Survey work has revealed that the Forest and the surrounding marshland and reedbed provide habitat for many legally protected species such as the Norfolk Hawker dragonfly and Water Vole. The open heathland is a rare habitat in east Norfolk, as is the birch carr and *Sphagnum* bog. Due to its value being widely recognised it appears that the Forest is safe from quarrying, although future climate change and unmanaged scrub encroachment are serious issues for the remaining heathland and bog. Recent felling of a large area of conifers has given insects and plants of open areas a new lease of life after several decades surviving under the dense shade of the planted pines. Nightjars nest in the felled areas and Turtle Doves were heard in 2014.

The book (ISBN-13: 9780956469250), published by Forrest Text, is available from the Natural History Bookstore:

http://www.nhbs.com/title/204056/the-natural-history-of-wave-forest

price £19.99, or from Amazon. The book can also be purchased at a reduced rate from the author by sending a cheque (made payable to Mr T.A. Gardiner) for £15 (p&p included) to 45 Maltings Wharf, Manningtree, Essex, CO11 1XE. Any queries please email Tim at: timgardiner134@btinternet.com

Flora and Fauna of Norfolk - Miscellaneous Observations

compiled by E.A. Ellis

Transactions of the Norfolk and Norwich Naturalists' Society,
(Vol. XVI, Part II, 1945 p. 172-177)

MEDICINAL LEECHES - On September 26th, 1945, Mr. R. P. Libby and I visited Derby Fen, Grimston, where shallow water was lying in a boggy part supporting a growth of bladderworts, sundews, sphagnum, etc. On wading through the shallows, we disturbed a number of leeches, which became violently agitated and began swimming about; two of them attached themselves to my gum boots and were found to be *Hirudo medicinalis* L., Now a rare animal of moorland pools in this country. The fen is regularly grazed by horses and sheep and no doubt the leeches get an occasional feed from them when they go down to drink.

E.A.E.

IMMIGRANT DRAGONFLY—Specimens of the yellow-winged dragonfly *Sympetrum flaveolum* L. were taken by Mr. J. A. Riley at Barton Broad (with *S.* s*anguineum* and *S. striolatum)* on August 3rd and 'at Alderfen Broad (with *S striolatum)* on August 19th, 1945. Previously only on example of this species had been recorded "off the Norfolk Coast" in 1912, although the insect is an occasional immigrant in fair numbers in southern England. Mr. A. E. Ellis made the following observations on *S. flaveolum* at Alderfen in late August : " *Sympetrum flaveolum,* though closely resembling *S. sanguineum* in appearance, except for the orange or yellow patch at the base of the hind wings, has more the habit of *S. dance* in flight, and is fairly easy to recognise on the wing. According to my observations at Alderfen, it prefers the *Juncus subnodulosus* fen away from trees, and does not wander far. All the individuals I saw were on a small area of fen on the northwest side of the broad. *S. flaveolum* likes sunning itself, especially on patches of rushes which have been beaten down, but does not seem to share with *S. sanguineum* and *S. striolatum* the habit of perching on trees. These last two species frequently fly up into the alders, and are fond of basking on bare twigs, dead branches, fences, gates and bare ground, but I did not observe *S. flaveolum* doing this."

The next issue of ***'The Norfolk Natterjack'*** will be August 2015.

Please send
all articles / notes and photographic material
to the editor as soon as possible by
July 1st 2015 to the following address:

Francis Farrow, 'Heathlands', 6 Havelock Road, Sheringham, Norfolk, NR26 8QD. Email: francis.farrow@btinternet.com

All photographs / images are very welcome, especially to accompany an article or document a record, occasionally however, because of space limitations, preference may have to be given to Norfolk-based images, or to those subjects depicting interesting or unusual behaviour, or are less commonly (or rarely) seen in print.

Membership subscriptions

The N&NNS membership year runs from 1st April to 31st March. During this time members will receive four copies of the quarterly *Natterjack* newsletter, and annual copies of the Transactions of the Society, and the Norfolk Bird & Mammal Report. A full summer programme of excursions and a winter programme of talks are also organised annually.

Membership renewals are due on ***1st April each year*** and should be sent to the treasurer:

- David Richmond, 42 Richmond Rise, Reepham, Norfolk, NR10 4LS.

New memberships should also be sent to:

- David Richmond at the above address.

Current rates are £20 for individual, family and group memberships
(£30 for individuals living overseas).
Cheques payable to: ***Norfolk & Norwich Naturalists' Society.***

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