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Norfolk & Norwich Naturalists' Society

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Cover image: Purple Viper's Bugloss (Chris Durdin) - *See page 1*

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Toad-in-the-hole....

My thanks to all contributors for the varied collection of articles - new plants, new birds, familiar favourites, excursion reports and even a tick! I would like to draw members attention to two important events. Firstly, the AGM is approaching (March 13th) and a copy of the Annual Report is printed in this edition. Once the business is over we will be treated to a a talk on *'Norfolk's Deep History Coast'* by Dr. David Waterhouse. The next important announcement is the *'Norfolk in 150'* project (page 16). This is part of the Society's celebration of 150 years of researching Norfolk's wildlife and introduces the species that will feature in a publication and possibly an exhibition of 150 notable or worthy Norfolk candidates. ***FF***

Purple Viper's Bugloss in Thorpe St Andrew

Chris Durdin

On 25 June 2017, I found a single flowering plant of Purple Viper's Bugloss *Echium plantagineum* on the side of Ring Road in Thorpe St Andrew, Norwich, within sight of the Sainbury's supermarket on Pound Lane.

The identification – as I cycled past it – was instinctive from its colour and jizz. It's a flower I know well from southern Europe, and I've seen it in South Africa. It's also naturalised in parts of Australia and the USA. The name Paterson's Curse is often used as it can be poisonous to livestock, especially horses.

I returned with a camera to take photos and to double-check the identification, given that it's unusual for Norfolk. The flower photo close-ups (opposite) show hairs on the sepals "only on veins and margins" (Fitter, Fitter & Blamey) compared with the very hairy sepals on Viper's Bugloss *Echium vulgare*. The two protruding stamens can be seen (cf. 4-5 on *E. vulgare*) here and there. The underside of the leaf (below) showed side veins (only the midrib is prominent on *E. vulgare*).

Images: *Chris Durdin*

But these details are barely necessary for anyone that knows the two species. From the photos I think it is obviously Purple Viper's Bugloss, not just the colour but as it lacks the robust, upright spikes of Viper's Bugloss, familiar from the Brecks and elsewhere.

The distribution of Purple Viper's Bugloss shown in flower books includes the extreme southwest of England, though it's suggested that even there it may be an archaeophyte – introduced in ancient times. In more recent years there seems to be a scatter of records across a lot of southern England, including in neighbouring Suffolk, according to floras and online maps.

In Norfolk, however, it's highly unusual. Purple Viper's Bugloss is not mentioned in Gillian Beckett and Alec Bull's *A Flora of Norfolk*, published in 1999, which raised my hopes that it could be a first record for the county.

I emailed Bob Ellis, vascular plant recorder for East Norfolk. He wrote: "There have been a couple of recent records of Purple Viper's-bugloss in arable margins which have been sown with 'wild flower' or 'conservation' seed mixes," though whether the species is intended or a contaminant is unknown. He was not aware of Purple Viper's Bugloss in gardens, but an internet search quickly reveals that seed can be bought, so that source cannot be ruled out. Mr Ellis added: "It's probably the first record that isn't a deliberate introduction (or the direct consequence of one) and yes, a very interesting find."

The flower I found was growing was on a bare, sandy area on the verge where the road had recently been closed for roadworks. This raises the possibility that the seed came in with soil, or dropped off a passing vehicle. Growing with it were several plants of Lesser Swine Cress *Coronopus didymus*, a more widespread non-native of disturbed ground.

The story does not have a happy ending. As reported in the Eastern Daily Press, a week later the area had been cut or strimmed and the Purple Viper's Bugloss destroyed.

Purple Viper's Bugloss
Image : *Chris Durdin*

IVY BROOMRAPE IN NORFOLK

Alec Bull

Roger Jones's piece regarding hosts of Common Broomrape *Orobnche minor* agg (Natterjack 139 page 1) and especially with reference to possible Ivy Broomrape (*O. hederae*), reminds me that the latter occurs in Norfolk at the present time, although not acknowledged by the East Norfolk v.c recorder.

There have been four Floras of Norfolk, Kirby Trimmer (1866), Nicholson (1914), Petch and Swann (1968) and Beckett and Bull (1999), none of which mentions *O. hederae*. but the Atlas of the British and Irish Flora (Dines, Pearman and Preston, 2000 has a single hectad dot for TG00 mapped as alien, introduced.

I was unable to detect a second Norfolk dot for the species in the Atlas so cannot comment on the second 'elderly' record mentioned by Mr. Jones.

The record in TG00, which strangely did not appear in the last Flora of Norfolk, was actually originally grown in the ivy clad bottom of the garden hedge at Welborne by the late Reg Evans, where he lived for many years after retirement back to Norfolk, from seed he had collected from, I believe, a site in Gloucestershire. The seed having been sown, germinated and thrived for many years beside Reg's garden (and could feasibly still be there if the garden has not been drastically altered.) In any case, it was there long enough to be classed as naturalised.

Ivy Broomrape Image: *Rachel Richmond*

Moving on to the unaccepted roadside bank near Reepham found in 2014 by Rachel Richmond and reported to the vice county recorder with accompanying photograph on at least two occasions from a shaded area with Ivy as the ground flora. In the first season it was found there were 46 flowering spikes, and it has reappeared at the appointed season each year since though in 2017 only half a dozen spikes were found at the usual time due to drought, but a few more came up after it finally rained.

Mr Jones mentions unrecorded hosts for Common Broomrape, so I consulted Stace who states that *Orobanche minor* var. *minor* "can be found on a wide range of Dicotyledons including most that are specific for other species of the genus" which presumably means that it could

Close-up of flower showing the yellow tip of the style of *O. hederae*

Image: *Rachel Richmond*

be found on Ivy but the corolla and style of var. *minor* is usually purple whilst *O. hederae* is yellowish with purple streaks and with a yellow style.

Orobanche minor also has a var. *flava* in which the whole plant is yellow with a very short and dense inflorescecens and has only been found on *Hypochoeris* (Cats-ear) and related yellow composites round Newport docks in Monmouthshire. How long the plant has been on the bank near Reepham is a matter for conjecture. The number of flowering spikes seen when it was first spotted suggested that it had, already been established for some while, possibly introduced into a local garden with an ornamental Ivy from which wind blown seed found a suitable niche in which to set up territory.

A Tick on a Polecat

Carl Chapman

In early May 2017 Tony Eadson brought me a freshly dead Polecat (*Mustela putorius*) he had found at the side of the A140 south of Roughton. The animal was a large male and after examination was confirmed as showing features of a pure Polecat rather than those of a Polecat/Ferret hybrid.

Whilst examining the cadaver an engorged tick crawled off the animal. I took the opportunity to photograph the insect given I presumed (wrongly) it would possibly be a first for Norfolk.

After a little research I discovered it was *Ixodes hexagonus,* the main tick species found on Polecats and otherwise known as the Hedgehog Parasite. A species which is described as a nest dwelling hedgehog specialist. It is also found on foxes, mustelids (including badgers), dogs and cats.

Tick: *Ixodes hexagonus*
Image: *Carl Chapman*

Ref:"Ixodid Ticks: Family Ixodidae". http://influentialpoints.com

Mixed Fortunes

Hans Watson

According to the *State of Nature 2016* report that was launched by Sir David Attenborough in September 2016, the United Kingdom is now one of the most nature-depleted countries in the world, with more than one in seven species facing extinction, and *more than half* of species in decline. With such a shocking and depressing piece of news, it is a cause for celebration that the Stone Curlew is increasing in numbers and doing rather well. The big improvement in the Stone Curlews breeding numbers, is doubtless the result of the sympathetic actions of farmers in the areas where Stone Curlews breed. These farmers deserve full praise and credit for this success story. Sadly, they get meagre credit for this in the *State of Nature 2016* report, instead farmers and modern farming practice are given most of the blame for the current sorry state of affairs.

Another wader that, like the Stone Curlew is amber-listed, is the Common Snipe. The fortunes of this species is far less encouraging, and breeding numbers in Norfolk are now pitifully low, and I no longer hear that lovely drumming sound in spring. I also no longer hear the calls of Little Ringed Plover at sites in the Yare Valley where they used to nest. Little Ringed Plover is green-listed, and apparently stable in breeding numbers nationally, but has declined in my part of Norfolk over the last 20 years. Some naturalists believe that global warming has affected the breeding range of some waders such as Snipe, and is also responsible for the arrival of new species from the south such as Black-winged Stilts, which had a successful nesting season in Norfolk in 2017, and it is hoped, will continue to breed in future years.

Stone Curlew

Image: *Hans Watson*

Images: *Hans Watson*

Common Snipe

Little Ringed Plover

Black-winged Stilt

Norfolk Ramblings

Tony Howes

Over the last couple of months the weather has been very changeable, windy, rainy, gloomy, a little frost now and again, and even a dash or two of sunshine. But so far here in Norfolk severe wintry conditions have avoided us. In a way I feel rather disappointed, I love to see a fall of snow, a beautiful hoar frost is also a gorgeous sight, it just puts another dimension on our winter countryside, but there is still plenty of time.

I had a couple of outings to Titchwell to photograph waders during November, it's always very good there. On a falling tide the shell beds are a great attraction, and the birds are there in their hundreds, it's easy to see a dozen or more species in a few hours. One of the most charming is the diminutive Sanderling, these little waders seem to be super charged, running up and down the beach, little black legs just a blur, continuously picking up small food items from the tide line. Oystercatchers and Knots are often seen having 'forty winks', standing about waiting for the first course to go down, before tucking in again.

Sanderling

Oystercatchers and Knot

Images:
Tony Howes

Nearer home, Pink-footed Geese have been numerous, vast numbers crossing the sky in V shaped battalions, a harvested beet field at Buckenham has been a great attraction. These beautiful, charismatic little geese have built their numbers up greatly in recent years.


Pink-footed Geese

Up the road a short way at Strumpshaw, the Starling roost has brought many people out in the late afternoon to see this amazing natural wonder. Thousands of birds, closely packed, all wheeling as one as they circle the reed-beds before dropping in, a huge black funnel of birds falling like rain as they settle for the night.

The Fen hide is always a pleasant place to spend an hour or two, Marsh Harriers, Water Rails, and Chinese


Water Rail


Chinese Water Deer

Water Deer have all had their portraits taken recently, and there is always a chance of a Kingfisher, Bearded-tit, or an Otter.

Images: *Tony Howes*

Talpa europea, the European mole, as seen by a reformed *Homo sapiens* trapper-predator (Part 2).

John Vincent.

Part 2 follows on from Part 1 which was presented in the November 'Natterjack' no. 139 and this time looks at moles particularly in the Edingthorpe church graveyard area and also adds some conservation thoughts.

Edingthorpe church graveyard

The graveyard is rectangular, some 80m East - West by 60m North - South and approximately 0.5 ha in extent. It is bounded by arable agricultural land to N and E, grazing land to S and W, but the grazing land is edged by a hard-earth well used drive/path in the S (and only put down to pasture a year or two ago from arable) and by a compacted mown-grass car park to the W. *Talpa europea* activity is 100% coverage within the graveyard. How is it possible to maintain individual territories in such conditions? There is certainly no room for young moles driven out of their mothers' territories - they must all leave the graveyard, period.

Atkinson quotes a single *T. europea*'s territory in rich lowland pasture to be of the order of 300-400 sq. m., say 20m by 20m square. His own study in Oxfordshire gave a figure of 1,500 sq. m., say 40m x 40m square, for which he estimated a total summed length of tunnel of 1,130m. Cloud analysis for such systems is now well developed but securing the necessary basic data intelligently enough is categorised as a nightmare. Literature informs that female *T. europea* build an integrated network of tunnels c.f. the males' long straight tunnels with branches off. D.W. Macdonald *et.al.* seem to be making progress along the right lines.

Meanwhile a word on the overall situation from a regular user of the graveyard (a funeral director), the custodian of the isolating arable agricultural land (a farmer), and by chance another farmer who advises me on my biodigester.

·Funeral Director. Mr Christopher Cork.
When one reaches a certain age, one takes a more wary attitude toward interviewing a funeral director, but that by the way.

Mechanical diggers taking 2m x 1m x 2m deep bites out of a graveyard at speed must, I would have thought, spew out live, mutilated, or dead moles from such crowded conditions. Not so, he insisted, the little fellows were alert to the challenge and he had never witnessed one thrown out.

The custodian Farmer. Mr Andrew Withers.
Keen to point out that farmers took action against moles only when they encroached en masse. He felt that all-encompassing enmity was more in the province of gardeners. Moles forced back into hedgerows can fan out and

cause serious problems by uprooting seedling sugar beet. The build-up of an intensive mole population in the graveyard was probably down to a general loosening of the soil by constant grave digging, he felt, making tunnelling easier. He raised an interesting query re the Eurasian Badger (*Meles meles*) which is noticeably expanding its activities in the Edingthorpe area. Is it a significant predator on moles? It is certainly well equipped to be so, and earth worms are a staple of its diet so they are liable to meet when foraging, but the literature does not pinpoint it.

The chance Farmer. Mr Andrew Furr.
He informed what farmers did post-2006 when strychnine was banned as a mole poison Europe-wide. They called-in professional mole catchers – a much more costly, much less effective, forced alternative. Gassing with phosphine is another, more costly and beset with difficulties. His main concern was the damage to cutting blades on his machinery from stones thrown-up in the molehills. He also drew attention to mass movement of *T. europea* to a new area when the food supply ran out on the old.

Atkinson's figure of density of *T. europea* in a favourable grazing-land site of 10 moles/ha. appears to be erroneous. Taking a maximum territory size per mole of 400 sq. m., this should be a mole density of 25 moles/ha. Whatever, the mole population in Edingthorpe church graveyard appears to soldier on century after century at a much higher density.

Is a graveyard a super-rich site for moles then? Macabre thoughts flit through the mind, but 2m is a long way down (*T. europea* are reckoned to tunnel down to a maximum 1.5m). Availability of mole-edible food from that source is most likely to be indirect, moving down or up through the soil, due to dependency on coffin decay delay. Another unsavoury thought – what happens to moles dying at the end of their natural life (or earlier because of disease, territorial dispute, shortage of food, whatever)?

It is known that territories vacated for whatever reason are rapidly taken over by ever-present aspirants to ownership, but literature on cannibalism is negligible.

Edingthorpe church graveyard (and others like it) is, let's face it, a conundrum worthy of further experienced scholastic investigation.

Talpa europea conservation.

Basically, the case against *T. europea* is (due to molehills):

- from pasture users and green keepers, for significant costs;
- from gardeners, for nuisance/unsightliness.

The former could and should be met by compensation; the latter ignored.

Be clear about this – *T. europea* is by preference a vermivore, extended by necessity into an insectivore, with the occasional opportunistic dip into carnivorism. It is not a herbivore cf. the Rabbit (*Oryctolagus cuniculus*) or an omnivore cf. the badger. Its impact on farmer's and horticulturist's crops is entirely secondary, via molehills and shallow surface runs. *T. europea* spends most of its active time searching for food in its tunnel network or making more tunnels to up its chances of success. It must keep eating regularly – a break of 2 days or more and it is dead. Simple as that.

A mole is a living Pandora's box of nasties (as are almost all wild mammals), from macro and micro parasites to being a potential host to organisms for the transmission of commercially serious disease (fortunately minimised by its underground lifestyle).

There is also a parallel with rabbit control to be considered and the possibility of development and subsequent introduction of a killer disease vis-à-vis myxomatosis. A potential mole population exterminator in the form of a secondary mole-food exterminator targeting the Earthworm, *Lumbricus terrestris,* the New Zealand Flatworm, is already running rampant in parts of Scotland.

We cannot modify such a simple demanding fundamental lifestyle as *T. europea*'s, but we can and should make a concerted effort to educate *Homo sapiens* towards tolerance and acceptance rather than waging war on such a puny undeserving fellow mammal for doing little more harm than the trans-location of spoil (inevitable) from its going about Its arduous daily business, which also contains several positives to boot, instance the beneficial effect its tunnelling/run-making has on the soil matrix via intermixing, drainage, aeration and texture; and a major secondary effect on crop protection by its assiduous insectivorous and other invertebrate foraging/feeding.

Recently, pre-the banning of strychnine. Atkinson guestimates a figure of 1 million moles killed by *H. sapiens* per annum in mainland Britain. Can anyone, with a clear conscience, accept such nebulous slaughter?

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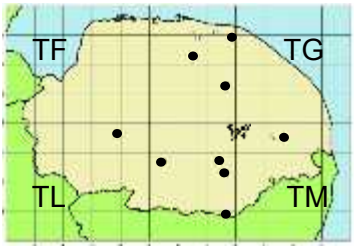
Acknowledgements

My grateful thanks to Mrs. Wendy Jones (my ever-patient transposer) who together with my son, Simon, did a selectively generalised troll of the internet for up-to-date information on *T. europea.*

Excursion Reports



● 2017-18 Field Meeting location
St. Andrew's Hall Eaton
○ Workshop Centre

Fungi at Felbrigg

Saturday 21st October 2017

Late October is prime fungus time and on the 21st of that month NNNS members joined with the Norfolk Fungus Study Group to record fungi in the grounds of Felbrigg Hall, a National Trust property south of Cromer. The 25-strong gathering comprised relative beginners and relative experts; the former spotted the fungi and the latter attempted to identify them – sometimes agreeing and sometimes disagreeing, much to the amusement of the rest. As usual, some specimens were collected for detailed examination and when the final list was collated by Stephen Pinnington it contained 143 species, a record for the Group.

Top: **Parrot Waxcap** - *Gliophorus psittacinus*
Bottom: **Scarlet Waxcap** - *Hygrocybe coccinea*
Images: *Mark Joy*

Mary Ghullam had suggested we concentrate on the northern part of the Great Wood where little recording had been done but after five hours we had barely reached that part of the estate. Perhaps next year? The big distraction was the grazed meadow in front of the Hall, much studied but rich in grassland fungi. We noted nine species of waxcap, plus one variety, and added *Paecilomyces marquandii* to the long site list. This parasitic microfungus turns the white gills of its host, Snowy Waxcap *Hygrocybe virginea*, violet. Four species of spindle fungus were found including the scarce Ivory Funnel *Ramariopsis kunzei*, also new for the site. A sharp-eyed forayer spotted Scarlet Caterpillar Clubs *Cordyceps militaris* barely two centimetres high in the grass which indicated buried moth pupae on which they are parasitic – another first for Felbrigg.

Top: **Scarlet Caterpillar Club** - *Cordyceps militaris*
Bottom: ***Laxitextum bicolor*** - new to Norfolk

Images: *Mark Joy*

The meadow is infamous for its Magic Mushrooms *Psilocybe semilanceata* which were new for some people - but not others! Later, in the woods, we encountered a specimen of Blueleg Brownie *Psilocybe cyanescens* a non-native species with similar hallucinogenic properties.

A slow walk up the western arm of the Victory V ride added a large number of woodland fungi to the list, mostly widespread species. Near the apex of the V we came across a beech stump bearing what I dismissed as a rather brown array of Hairy Curtain Crust *Stereum hirsutum*. Anne Crotty, however, realised that it was not this species and later identified it as *Laxitextum bicolor,* a new fungus for Norfolk but one which seems to be increasing nationally. At the end of the day we had covered less than two kilometres but were 'fungussed out'.

Tony Leech

Beginners' Moss Meeting: Swaffham Heath

29th October 2017

A dozen people, a mixture of beginners and more experienced members of the Norfolk and Suffolk Bryology Group, met up at Drymere in the parish of Beachamwell in West Norfolk to explore the bryophytes in the forestry plantations. After the regular health and safety briefing, handouts were distributed to the newcomers, explaining briefly and pictorially both the differences between mosses and liverworts and the main divisions within the two groups- pleurocarps and acrocarps for mosses and leafy and thalloid for liverworts. While the main aim of the day was to introduce and illustrate a wide range of different types of bryophytes to beginners, the opportunity for recording could not be missed. The area chosen was a mixture of primarily conifer plantations with some broadleaved trees along grassy rides and tracks. This allowed many of the commoner bryophytes to be seen.

First pleurocarps and acrocarps were compared. The former are mat producing, weaving through vegetation and producing capsules along their main stems, such as the ubiquitous Common Feather-moss, *Kindbergia praelonga.*

Acrocarps, on the other hand, like the epiphytic Bristle-mosses, have upright stems, often cushion-forming, with capsules usually emerging from the top of the stem. At first the acrocarps along the track were very small, such as Silver Bryum, *Bryum argenteum* and Lesser Bird's-claw Beard-moss, *Barbula convoluta,* but on reaching the oaks along the rides, larger epiphytes could be examined. Such features as leaf shapes, visible leaf nerves (costas) and presence of hair points were discussed. Wood Bristle-moss, *Orthotrichum affine* was compared with *Orthotrichum diaphanum*, White-tipped Bristle-moss. The presence of another Orthotrichum – *O. pulchellum*, Elegant Bristle-moss, provided the opportunity look at the structure of moss capsules, comparing the neat small capsules of the latter, with their dark tipped and basely spotted calyptra with the earlier seen Bird's-claw Beard-moss, *Barbula unguiculata,* displaying its long narrow capsules and twisted peristome teeth. The fruiting acrocarp Common Pottia, *Tortula truncata*, on the other hand, had no peristome in the mouth of its goblet-shaped empty capsules.

Elegant Bristle-moss Image: *Richard Fisk*

After an alfresco lunch, the damp grassy rides threw up a set of common pleurocarps. These included the familiar to lawn growers, Springy Turf-moss, *Rhytidiadelphus squarrosus,* with its bent back, squarrose leaves and the aptly named Spear-moss, *Calliergonella cuspidata,* which appears to have no visible leaf nerve in the field. Another 'nerveless' pleurocarp, *Hypnum cupressiforme*, growing along the branch of an oak, lived up to its name of Cypress Plait-moss. This can be a variable species, but here was conveniently following the text book! On the same branch Lateral Cryphaea, *Cryphaea heteromalla*, allowed discussion of spotting features. This moss clings tightly to the bark, but then grows out at right angles to the branch with its fruiting stems. This means a quick glance along a branch can usually suggest its presence. Twenty years ago this species was rare in Norfolk, but although still not very common, it is an unusual day out 'mossing' not to find at least one patch somewhere!

Well fewer than half the numbers of species of liverworts compared with those of mosses grow in Britain and, indeed, Norfolk. So it was not surprising that only six different species were seen at the site. These, however, did span both types of liverwort. First to be recorded was Dilated Scalewort, *Frullania dilatata,* a leafy liverwort with neat small ranked leaves with helmet-shaped lobules beneath. It is often forms large dark purple patches on broad-leaved trees, which enables spotting at a distance. Bifid Crestwort, *Lophocolea bidentata*, in the grass edges along the track and Variable-leaved Crestwort, *Lophocolea heterophylla*, on

rotting wood, bore comparison of their respective leaves, the latter much less bidentate and often smelling like old-fashioned ping pong balls! None of the more familiar skin-like thalloid liverworts species were found on the soil but two species of epiphytic Veilwort with their strap-like branches were present. Forked Veilwort, *Metzgeria furcata,* tends to be a darker green than the more gemmiferous Bluish Veilwort, *Metzgeria violacea.* The latter gets its name, not from its colour in the field, which is a yellowy green, but from its unique habit of turning blue when long dry.

A slight diversion on the way back to the car park allowed revision of features such as undulate/wavy leaves and toothing along leaf margins as an aid to identification of such species as Hart's-tongue Thyme-moss, *Plagiomnium undulatum,* and the earlier seen Catherine's Moss, *Atrichum undulatum.* As well as teeth, like Bank Haircap, *Polytrichastrum formosum, Atrichum* has plates of tissue (called lamellae) along its nerve, which are visible in the field through a lens.

Forked Veilwort with *Hypnum cupressiforme*

In all forty one species of bryophytes had been recorded: six liverworts – four leafy and two thalloid and thirty five mosses including eleven pleurocarps.

Mary Ghullam

Swaffham Drymere - beginners huddle around Mary

Images: *Julia Masson*

Norfolk in 150 Species

In 2019 the Norfolk & Norwich Naturalists' Society will have been in existence for 150 years. As part of the anniversary celebrations it is proposed to publish a book featuring 150 species that are special to Norfolk. This extends the concept of Norfolk's Notable 90, planned for the NWT 90th anniversary but never completed.

The NNNS Council has agreed that the book will be funded from the generous legacy left to the Society by the late Diane Robinson. It will be given to members and will also be on sale to non-members.

A target list of approximately 150 species has been selected. Some of these are well-known species which have a stronghold in the county or are of particular interest here; others, the majority, will be less well-known – and to many – entirely unknown. The general criterion has been that the species has a nationally important population in the county or that Norfolk is the best (in some cases the only) place where it can be seen. An attempt has been made to include as many groups of plants, animals and fungi as possible. A number of naturalists from the county (and beyond) are being asked to provide profiles of the selected species. The following list shows 148 species and although there are some species in reserve this is your chance to nominate a species that fills the general criteria. The list is not 'set in stone' so if we receive more than the required species to complete the 150 we can make substitutions if deemed worthy. Any new suggestions and why that species should be included in Norfolk's 150 please email Tony Leech (tonyleech3@gmail.com) by April 1st 2018.

Calling all photographers and illustrators

The publication will be full-colour and each species will be illustrated by one or more photographs. We appreciate that sourcing photos of some of the less well-known species will be a challenge and we will rely on the 'profilers' to do this. The better the quality (incl. resolution) of the image, the better its appearance on the page. It would be excellent if photographers were Norfolk naturalists but we may have to trawl further afield. If you have an image of one or more of the species that is not cropped and is of a high resolution then please let Hans Watson know (charles.watson13@btopenworld.com) by April 1st 2018. If you have a line drawing or painting that shows a species well then please also send to Hans as it is envisaged that some of the lesser known species may not have been photographed. Also set yourself a challenge to photograph/draw a lesser known species this summer as it will be possible to add or substitute an image as the project progresses. Publication is planned for early 2019. It is possible that there will be also a 'public' display of photographs/illustrations to accompany the launch.

No.	GROUP/FAMILY	SPECIES	No.	GROUP/FAMILY	SPECIES
1	bird	Barn Owl	39	diptera - hoverfly	Banded Golden Hoverfly *Callidera solrolae*
2	bird	Bearded Tit	40	diptera - hoverfly	Levels Duck-Hoverfly *Anasimyia interpuncta*
3	bird	Bewick's Swan	41	diptera - hoverfly	*Microdon devius*
4	bird	Bittern	42	diptera - hoverfly	Sea Club-Rush Hoverfly *Leiops vittatus*
5	bird	Bluethroat	43	hemiptera - aphid	Giant Oak Aphid *Stomaphis quercus*
6	bird	Collared Dove	44	hemiptera - aphid	Spiny Broom Aphid *Cavariella setosa*
7	bird	Crane	45	hemiptera - aphid	Thyme Aphid *Aphis serpylli*
8	bird	Egyptian Goose	46	hemiptera - leafhopper	*Doratura impudica* Large Dune Leafhopper
9	bird	Knot	47	hemiptera - leafhopper	*Metalimnus formosus*
10	bird	Marsh Harrier	48	hemiptera leafhopper	*Platymetopius undatus*
11	bird	Pink-footed Goose	49	hemiptera - water measurer	Lesser Water-measurer *Hydrometra gracilenta*
12	bird	Rook	50	heteroptera	Broad-and Leatherbug
13	bird	Shorelark	51	hymenoptera - ant	*Myrmica karavajevi*
14	bird	Stone Curlew (Norfolk Plover)	52	hymenoptera - bee	Large Scrapicus Mining Bee
15	bird	Yellow browed Warbler	53	hymenoptera - bee	Sea Aster Bee
16	fish	Barbot	54	hymenoptera - bee	Yellow-shouldered Nomad Bee
17	fish	Crucian carp	55	hymenoptera - ichneuman	*Trogus lapidator*
18	fish	Weever fish	56	hymenoptera wasp	Five-banded Weevil Wasp *Cerceris quinquefasciata*
19	fish	Zander	57	hymenoptera wasp	*Nysson interruptus*
20	amphibian	Natterjack Toad	58	hymenoptera - wasp	Fen Mason Wasp *Odynerus simillimus*
21	amphibian	Pool Frog	59	lepidoptera - butterfly	Chalkhill Blue
22	antlion	*Euroleon nostras*	60	lepidoptera - butterfly	Dark-green Fritillary
23	arachnida false scorpions	*Dactylochelifer latreillei*	61	lepidoptera butterfly	Silver-washed Fritillary
24	arachnida - spider	Fen Raft Spider *Dolomedes plantarius*	62	lepidoptera butterfly	Silver-studded Blue
25	arachnida - spider	*Marpissa radiata*	63	lepidoptera - butterfly	Swallowtail
26	coleoptera -	*Galerucella lineolata*	64	lepidoptera - butterfly	White Admiral
27	coleoptera -	*Hydroporus globiusculus*	65	lepidoptera - butterfly	Purple Emperor
28	coleoptera -	*Ceutorhynchus quercedi*	66	mollusc	Depressed River Mussel *Pseudanodonta complanata*
29	coleoptera -	*Bledius fimbes*	67	mollusc	Little Whirlpool Ramshorn Snail
30	coleoptera -	*Diastictus vulneratus*	68	mollusc	Narrow-Mouthed Whorl Snail *Vertigo angustior*
31	coleoptera -	*Agabus striolatus*	69	mollusc	Shining Ram's-horn *Segmentina nitida*
32	coleoptera -	*Psylliodes sophiae*	70	moth	Bedstraw hawk moth
33	crustacean	*Daphnia magna* (Large Waterflea)	71	moth	*Coleophora hydrolapathella*
34	crustacean	White-clawed crayfish	72	moth	*Coleophora tricolor*
35	diptera - flies	*Dolichopus latricola*	73	moth	Dotted Footman
36	diptera - flies	*Hybomitra muehlfeldi* (Tabanidae)	74	moth	Fenn's Wainscot
37	diptera - flies	*Machimus arthriticus* (Brook Robberfly)	75	moth	Grey Carpet
38	diptera - flies	*Odontomyia angulata* (Stratiomyidae)	76	moth	Lunar underwing

No.	GROUP/FAMILY	SPECIES	No.	GROUP/FAMILY	SPECIES
77	moth	Norfolk Owlet	113	bryophyte	*Timmia megapolitana*
78	moth	Pigmy Footman	114	fungus	*Porpoma ericl*
79	moth	*Pseudapostega auritella*	115	fungus	Sandy Stilt-ball
80	moth	Scarce Pug	116	fungus	Tiny Earthstar
81	moth	Small Dotted Footman	117	fungus	*Ustilago grandis*
82	myriapoda - millipede	*Polyxenus lagurus*	118	lichen	*Catoplaca ruderum*
83	myriapoda - millipede	*Unciger foetidus*	119	lichen	*Catoplaca suaedae*
84	odonata - dragonfly	Norfolk Hawker	120	lichen	*Cladonia rangifer*
85	odonata - dragonfly	Scarce Emerald Damselfly	124	lichen	*Lecania coenulescens*
86	orthoptera - bush-cricket	Bog Bush-cricket	125	vascular plant	Crested Buckler-fern *Dryopteris cristata and x uliginosa*
87	orthoptera - bush-cricket	Great Green Bush-cricket	126	vascular plant	Fen Orchid *Liparis loeselii*
88	mammal	Coypu	127	vascular plant	Grey Hair-grass *Corynephorus canescens*
89	mammal - bat	Barbastelle	128	vascular plant	Intermediate Bladderwort *Utricularia intermedia subsp. intermedia*
90	mammal - bat	Nathusius' Pipistrelle	129	vascular plant	Matted Sea-lavender *Limonium bellidifolium*
91	mammal - bat	Natterers	130	vascular plant	Milk Parsley *Peucedanum palustre*
92	mammal	Chinese Water Deer	131	vascular plant	Night-flowering Catch-fly *Silene noctiflora*
93	mammal (extinct)	Early Hominid	132	vascular plant	*Oenanthe aquatica* (Fine-leaved Water dropwort)
94	mammal (extinct)	Runton Elaphant	133	vascular plant	Prickly Poppy *Papaver argemone*
95	mammal	Common Seal	134	vascular plant	Purple Broomrape *Orobanche purpurea*
96	mammal	Grey Seal	135	vascular plant	Purple-stem Cat's-tail *Phleum phleoides*
97	mammal (mythical)	Black Shuck	136	vascular plant	Rock Sea-lavender *Limonium binervosum* ssp. *anglicum*
98	mammal	Otter	137	vascular plant	Samphire (Glasswort)
99	marine	Common Lobster	138	vascular plant	*Silene conica* Sand Catchfly
100	marine	Edible Crab	139	vascular plant	Sharp-leaved pondweed *Potamogeton acutifolius*
101	marine	*Gatroclonium reflexum*	140	vascular plant	Shepherd's-needle *Scandix pecten-veneris*
102	marine	Little Cuttle	141	vascular plant	Shrubby Sea-blite
103	marine	*Palio nothus*	142	vascular plant	Smooth Rupturewort *Herniaria glabra*
104	marine	Pin-head Sea Squirts	143	vascular plant	Spanish Catch-fly *Silene otites*
105	marine	Purple Sponge	144	vascular plant	Spiked Speedwell
106	marine	Scarlet Sea Anemone	145	vascular plant	Stinking Chamomile *Anthemis cotula*
107	aquatic	Holly-leaved Naiad *Najas marina*	146	vascular plant	Sulphur Clover *Trifolium ochroleucon*
108	aquatic - stonewort	Intermediate Stonewort	147	vascular plant	Hoary Mullein *Verbascum pulverulentum*
109	aquatic - stonewort	Starry Stonewort *Nitellopsis obtusa*	148	vascular plant	Weasel's-snout *Misopates orontium*
110	bryophyte	Norfolk Flapwort	149		
111	bryophyte	*Physcomitrium eurystomum* Norfolk Bladder-moss	150		
112	bryophyte	*Sphaerocarpos michelii & S. texanus*			

TRANSACTIONS

If you have a paper/wildlife report/note suitable for 'Transactions' please be aware that the deadline for submission is the end of September 2018.

The next issue of ***'The Norfolk Natterjack'*** will be May 2018.

Please send
all articles / notes and photographic material
to the editor as soon as possible by

April 1st 2018 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.

New memberships and renewals can be made by credit card or 'PayPal' by visiting the Society's website at www.nnns.org.uk

Alternatively a cheque payable to
'Norfolk & Norwich Naturalist's Society' can be sent to:

Jim Froud, The Membership Secretary, Westward Ho, 4 Kingsley Road, Norwich NR1 3RB

Current rates are £20 for individual, family and group memberships
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Contents

Illustration:
Mole (Page 10) - Computer/clipart