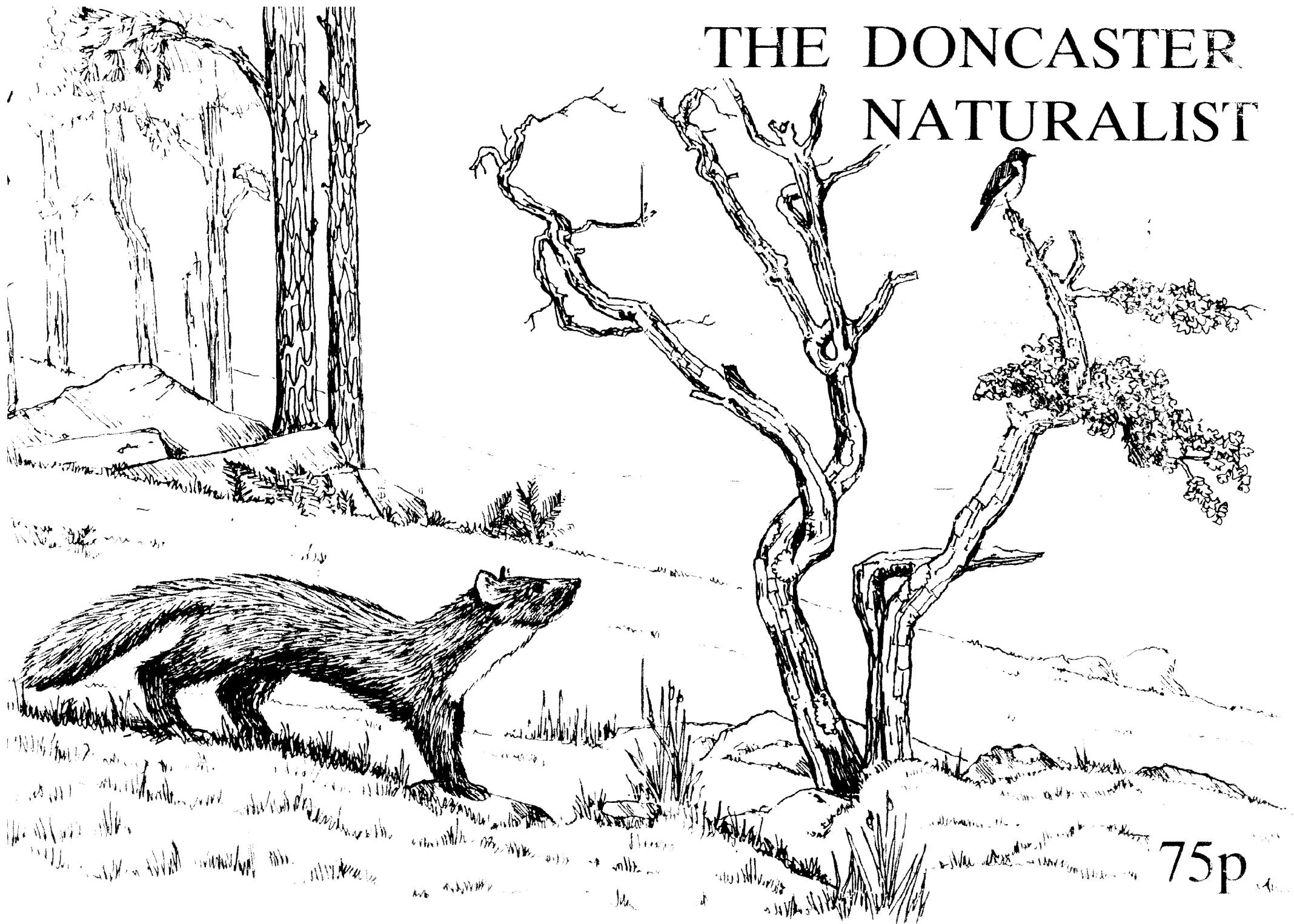


# THE DONCASTER NATURALIST



75p

EDITORIAL February 15th, 1983

Last October saw the publication of our first issue of the "Doncaster Naturalist". If we judge by the number of copies sold (there are five left out of a hundred printed), it was well received. This has encouraged the members of the Society to submit articles for a Spring Number; from these I have made a selection which I hope will provide good reading. Unfortunately it is not possible to include all the items sent to me, however those not printed in this issue will appear in the Autumn Journal. Any further contributions for the October publication should reach me before September 30th.

Accounts of natural history observations during the summer months - reports of Field Meetings - unusual records - could provide you with a reason for writing. Or why not write a letter to me with suggestions for future issues?

D.M.BRAMLEY. Editor  
29 Cantley Lane,  
Doncaster.

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## WHAT'S IN A WASPS' NEST ?

The population structure of a common wasp colony in Autumn

P. R. Cunningham and C. A. Howes

Although colonies of the common wasp Vespula vulgaris (L.) are known to survive into November, information on mid and late autumn nests is apparently sparse. In Spradbery's (1973) comprehensive review of the biology of social wasps, most of the figures and tables refer to the period from June, when colonies are in the early stages of development, to September, the onset of their social disintegration. It was interesting, therefore, to have the opportunity of studying a colony collected after this period.

At 14.00 hours on 8th October 1980, P.R.C. removed a mature colony of Vespula vulgaris from the rafters of a house roof in Bessacarr, Doncaster, (SE 6001). The nest was shaken into a large paper sack and brought to Doncaster Museum where the colony was killed, the nest dismantled and the occupants counted. Because of the nuisance value of nests in domestic property these are more likely to come to the notice of the general public, however, this habitat is utilised less frequently than underground sites.

Of 82 nests studied by Spradbery (loc.sit.) in Herefordshire, 77 per cent were subterranean, none were in house roofs, though 4 per cent were in sheds and outhouses and 3 per cent in cavity walls.

The total number of adult wasps present was 1240, being made up of 323 (26.2 % ) workers, 191 (15.4%)drones and 726 (58.4%) queens. For comparison adults in a colony collected by Spradbery (loc.sit.) on 25th September and therefore not as advanced in producing reproductive castes, consisted of as many as 60.8% workers, 32.4% drones and only 6.8% queens.

The nest consisted of nine combs. The numbers of cells, their types and occupants are listed in Table 1.

The number of eggs present was predictably low. Spradbery (loc.sit.) in monitoring egg production through the phases of colony development, quotes mean numbers of eggs as follows:- 36 in June, 464 in mid-July, reaching a peak of 1122 in late July, dropping to 821 in August and 739 in September. The 394 eggs present in the October nest shows a continued end of season

diminution in egg production. He also monitored worker/larva ratios during the same period. During the colonies' developmental phase a discrepancy of one worker to up to eight larvae is built up by the end of June. At this stage, all larvae develop into workers, enabling the worker force to replenish its losses and increase its numbers. Worker numbers reach parity with larvae numbers in mid August. In late July a proportion of pupae emerge as drones and in early September queens also begin to emerge. With reproductive castes being produced at the expense of worker recruitment the worker force again becomes outnumbered by the larvae. Spradbery shows that by late September the worker/larva ratio rises to between 1:2 and 1:3. The October nest indicates an increased imbalance, with one worker to 6.8 larvae, 25.3% of which were in queen cells and, therefore, not destined to join the worker force. (With the nest having been collected at a time of day when some workers would have been out foraging, the stated worker/larva ratio may be an over-estimate). In addition, Spradbery (loc.sit.) notes that diminishing recruitment of new workers results in the mean age of the workers rising. Problems of colony servicing are exacerbated by older workers being less efficient and with an increasing work load, dying earlier. The increasing number of queens in colonies during late summer and autumn (58.4% of the adults in the October nest), apparently induces fighting amongst the workers, an activity which begins to occupy much of what would be foraging time.

In temperate latitudes where social wasp colonies are annual, the social structure of the colonies collapses in the autumn. The workers, drones and 'founder' queens die and the young mated queens, which had increased to at least 726 individuals in the October nest, depart and hibernates, the survivors founding new colonies the following June.

### References

- Spradbery J.P. (1973) Wasps: an account of the biology and natural history of solitary and social wasps.  
Sidgwick and Jackson, London.

TABLE 1  
A census of cells and occupants in a colony of *Vespula vulgaris* in October

Comb	Empty Cells	Eggs	Larvae	Pupae*	Total Worker Cells	Total Queen Cells	Total
1	866	0	1	1	868		868
2	1,084	27	239	4	1,354		1,354
3	1,024	101	290	11	1,426		1,426
4	810	111	433(14)	38(11)	1,392	25	1,417
5	608(79)	48(8)	539(40)	36(21)	1,229	148	1,377
6	220(120)	12(5)	210(126)	17(78)	459	329	788
7	(44)	(58)	(151)	(59)		312	312
8	(12)	(26)	(95)	(200)		333	333
9	(40)		(8)			48	48
Sub-Total	4,612(295)	299(97)	1,712(434)	107(369)	6,728	1,195	7,923
Grand-Total	4,907	396	2,146	476	84.9	15.1	100.0
% of Total	62.0	4.9	27.1	6.0			

Figures in brackets = queen cells

\*Sealed cells containing mature larvae, pupae and calow adults

## THE DEVELOPMENT OF SCIENCE IN DONCASTER (continued)

P. Skidmore and L. Smith

Under the Stuarts botany increased in popularity and South Yorkshire played a significant role in the growth of this science and in the deliberations of the London Society of Apothecaries. In 1633 Thomas Johnson of Selby, a leading figure in this body, brought out his greatly enlarged and much improved edition of Gerard's "Herball", referred to by John Ray as the "Gerard Immaculatus". Johnson's practice was in Snow Hill, London, but he visited Selby periodically (as in 1626 for example), and it may have been on one of his visits in 1628 that he met and formed a life-long friendship with the Rev. Walter Stonehouse, Rector of Darfield. Stonehouse had procured this incumbency through Sir John Savile of Methley (1556-1630) and during his time there placed South Yorkshire firmly in the botanical textbooks through the wealth of data he passed to William How of Oxford. It appears that he also strongly influenced several people in the area to take up botany for around this time we find several notables in this field - Sir John Reresby of Thrybergh, Richard Heaton of Hooton Pagnell, Matthew Dods-worth of Badsworth and Gilbert Witham of Methley. In 1639, Stonehouse and Johnson made the first botanical expedition to Wales, accompanied by botanist Edward Morgan (c.1619-c.1677) as interpreter. During the following decade Richard Heaton carried out pioneer botanical studies in Ireland. Stonehouse and his friend Sir John Reresby had notable gardens, that of the former being well documented; in this he had the close advice of his friend John Tradescant the Younger (c.1608-1662).

The local nobility had their cultural circles and it is no coincidence that the botanists like their squires were ardent Royalists and high churchmen. Heaton belonged to the cultural circle of Sir John Hutton of Hooton Pagnell (d.1645) and it was through Hutton's brother-in-law Thomas Wentworth, Earl of Strafford (1539-1641), that Heaton's Irish commission materialised and his destiny was sealed. Stonehouse, on the other hand, was associated more with Sir John Jackson, son-in-law of Sir John Savile and descendant of the Darfield family. Whether the subsequently notorious Rev. Ezerel Tonge of Tickhill knew Stonehouse is not recorded but he was only eighteen when he left for London. We note, however, that Stonehouse's physician in Doncaster, Dr. Jervase Dixon had some knowledge of botany and submitted records to How, as did Stonehouse.

The fact that neither Stonehouse nor Heaton published their own botanical observations did not detract from the high esteem accorded them by their contemporaries, but it is possible that their greatest work may have been in the education of their congregations and patrons.

During Stuart times, then, botanical knowledge was very advanced in South Yorkshire but sadly the intelligentsia in this field were too associated with the Royalist cause, and their activities ended with the Civil War when Cromwell's aides lacked the will or the wit to distinguish baby from bathwater and untold damage was done to the growth of science during these years of strife. In 1641, due to the excesses of his old friend the Earl of Strafford, Heaton fled home from Ireland, only to find that the hated Earl's reputation had gone before him. With the fall of Yorkshire to the Roundheads, Heaton was forced into hiding, only surfacing again when Charles II was crowned. Johnson became a distinguished Royalist soldier, dying for the cause in 1644, followed in 1645 by Heaton's friend, Sir Richard Hutton. In 1648 Cromwell's men caught up with Stonehouse and threw him into gaol for his Royalist sympathies; on his release in 1653, he paid a visit to Darfield, was brokenhearted when he saw the wreck of his beautiful garden, and died in the south of England in 1655. Sir John Reresby also was fined for his sympathies but beat his persecutors to a merciful grave. Thus ended a most remarkable period in the botanical history of South Yorkshire.

Following the reinstatement of the Monarchy, science again began to progress rapidly, not least through the vehicle of the Royal Society to which King Charles II, himself a "fair chemist" gave his stamp of approval. The creation of this body had been deferred by the Cromwellian upheavals, though its founders had continued to meet in secrecy. The relevance of the Royal Society is perhaps best understood when one realises that its membership included not only great figures like Robert Boyle, Robert Hooke, Nehemiah Grew, Isaac Newton and John Ray, but also many who, like Sir Godfrey Copley of Sprotborough, were prominent patrons of the arts and sciences. Cultural circles meeting at the homes of men like Sir Godfrey now had access to the most up to date developments in science through the publications of the Royal Society to which at least their hosts belonged. Science was advancing on a very broad front and again the Doncaster area figures in the work of the Royal Society at this time. Sir Godfrey Copley offered strong incentive to outstanding work in the Royal

Society by awarding the coveted Copley Medal, and several leading exponents of the natural sciences visited the Doncaster area during the late 1600's. (i.e. John Ray, Martin Lister, Thomas Willisel, Thomas Lawson, etc.).

Two other major developments relevant to our story should be mentioned. The art of Cartography had been revolutionised by the work of Christopher Saxton of Leeds who, during Queen Elizabeth's reign, produced excellent maps, which are said to have been the first ones ever prepared after prior intensive survey. They certainly show a remarkable degree of precision. Also, major civil engineering works were being attempted locally, the largest being the drainage attempts on Hatfield Chace by Sir Cornelius Vermuyden in the 1620's. Many Dutch families came here to assist in this work and one of the most interesting results was the creation in 1657 of a Duck Decoy on Potteric Carr. This latter became nationally famous and was widely imitated. Duck Decoys became quite an important feature in many rural communities in lowland England, as they had long been in Holland.

The Society of Friends (Quakers) were quick off the mark in pursuing scientific studies and even today their contributions are considerable. The movement of course has strong ties with Balby through George Fox, and it is perhaps significant that one of the leading botanists of the late seventeenth century who visited Doncaster, Thomas Lawson, was a convert to the Quaker movement. The Established Church, of course had clergy with scientific leanings (like Stonehouse, etc.) but the most interesting local development relating to the church was the formation of St. George's Library in Doncaster in the early eighteenth century. A surprising range of secular works was available for loan to members, including publications of the Royal Society. The library was open to clergymen and graduates of the universities and records exist of the activities of this useful amenity.

## CHRONOLOGY OF SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENTS IN THE DONCASTER AREA

1558	St. Thomas' Hospital founded
1620's	Vermuyden's Scheme for drainage of Hatfield Chace
1630's	Early cultural circles at Thrybergh, (Sir John Reresby), Hickleton (Sir John Jackson) and Hooton Pagnell (Sir John Hutton)
1657-1770's	Doncaster Decoy on Potteric Carr

c1690-1705	Sprotborough Intellectual Circle (Sir Godfrey Copley)
1726-1773	St.George's Library, Doncaster
1730-1742	Benjamin Huntsman working in Doncaster
1759-1846	Period of Land Inclosure Awards in Doncaster area (Mostly 1760-1785)
1765-1768	Oil lighting in Doncaster streets established.
c1760-1765	Nether Hall Intellectual Society (Robert Copley)
1770's	Doncaster Agricultural Society (Secretary, James Stovin)
1771	Sailcloth and Sacking factory established in Doncaster
1780	Ackworth School opened
1785-1793	Edmund Cartwright's factories operating
1787-1831	Itinerant lecturers visiting Doncaster
c1790-c1812	William Beilby's Museum, Frenchgate, Doncaster
1792	Doncaster Literary Society
1792-1867	Doncaster Dispensary
1799-1816	Doncaster School of Industry (to teach girls from poor homes)
1800-1813	James Falconar's School
1800-1816	Mrs Morey's Girls' School (Botany, Astronomy etc)
1802-1826	Peter Inchbald's School (General Science etc.)
1803	Thomas Pasmore's Factory
c1812-1853	Hugh Reid's Museum, Frenchgate, Doncaster
1815-1868	National School (replacing School of Industry)
1816-1822	Mary Ann Wimberley's Girls' School, Spring Gardens
1821-1866	Subscription Library
1826-1866	Apprentices' and Mechanics' Library & Institute
1827-1861	Installation of Gas Lighting in Doncaster
1826-1832	Thomas Piggott's School
1826-1839	Misses Platts' Girls' School
1829	Yorkshire Institute for Deaf and Dumb Children established
1832	British School, Wood Street, opened
1834-1844	Lyceum, or Literary, Scientific and Natural History Society
? -1836	John White's Museum, South Parade
1837-1839	Society for Acquisition of Knowledge, Campsall
1837	Gas Lighting introduced at Thorne

1840's	Thorne Literary & Philosophical Society
1848	Arrival of Railway System in Doncaster
1848-1852	Phineas Stubbs' School at Edenfield House, then Hall Cross House
1850-1853	Doncaster Franklinian Society
1851-1861	First major period of population growth in Doncaster, related to establishment of Plant Works in 1853
1852-1861	John Stoker's Technical School
1853	St.James' Homeopathic Hospital opened
1853-1920's	G.N.Rly.Mechanics' Institute
1855	St.James' Railway School (Plant School) opened
1861-1896	George Hardy's School (not from 1879-86, when he was out of the area)
1867-1930	Doncaster General Infirmary & Dispensary Wood Street
1868-	St.George's National School
1863-1875	Doncaster Philosophical Society
1869	Yorkshire Naturalists' Union formed
1872-1877	Doncaster Free Library established
1872	George Younge's School (Chemistry, etc.)
1877	Gasworks built at Askern
1878-1921	Doncaster School of Art & Science established
1880	William Toase Jackson's School
1880	Doncaster Microscopical Society founded (changed name to Doncaster Scientific Society in 1890's, then to Doncaster Naturalists' Society in 1960)
1882-1895	Thrybergh Reservoir opened for local water supply
1890-1925	Gilchrist Lectures run by Doncaster Microscopical Society
1894	Main period of expansion in coalmining locally as new collieries were sunk and villages sprang up
1899	Doncaster Camera Club founded
1900	Electric Light and Power Station erected
1902	Doncaster Museum established at Guild Hall
1905	First electric tramway system in Doncaster
1910	Doncaster Engineering Society founded under presidency of H.T.Ivatt
1920's	Doncaster Museum moved to Beechfield
1920's	Water extracted from local Triassic sandstones commenced (First bore hole at Sandall Beat in 1921)
	Filkingtons Glass Works at Kirk Sandall opened

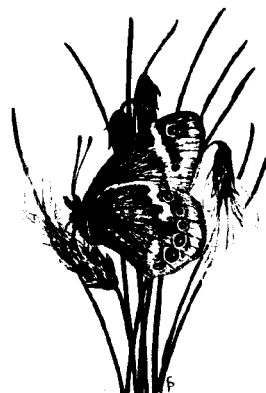
1930                   Doncaster Royal Infirmary, Thorne Road, opened  
 1934                   Doncaster Airport opened  
 1946                   International Harvesters opened  
 1955                   British Bemberg Ltd (Artificial Silk)  
                       bought out by I.C.I. and turned over  
                       to nylon production.  
                       Doncaster and District Ornithological Society  
                       founded in Mexborough.

## OUR HERITAGE (Part I)

P. Skidmore

The Manchester Ringlet

(*Coenonympha tullia s.davus*)



The Large Heath butterfly has three races in Britain, the rarest by far being davus, long known as the Manchester Ringlet from its discovery on the mosses near that city in 1795. Unlike its upland cousins of the high moors from Wales to the Highlands, davus is restricted to the lowland peat bogs of England - of all our natural habitats the most threatened. Formerly widespread through much of northern England, the Manchester Ringlet today is found in less than 10 sites in Britain, 3 of these near Doncaster (i.e. Thorne and Hatfield Moor and Epworth Turbary). Unfortunately its localities are all equally under threat so that this butterfly is staring national extinction in the face. Nor can we gain solace from abroad for its few remaining sites on the continent suffer similar pressures, so total extinction is a distinct possibility for this race of the Large Heath butterfly.

The local populations are perhaps of particular national importance being genetically the purest strain. The remaining British colonies in the Kent estuary and in Shropshire could have intermingled in historically recent times with other races from neighbouring uplands,

but this could not have been the case with our long-isolated local strain.

The caterpillar is thought to feed locally on cottongrass and the butterfly favours the wetter parts of the moors where danger from peat fires is least severe. In late June 1970, two days after a disastrous fire on Thorne Moor, I visited the site to find a scene of such total devastation as to rule out any thought of animal or plant survival. But then, amidst the charcoal landscape and glowing embers, I saw a patch of greenery marking a peat pool where the flames had swept across, singeing the higher plants but not affecting the lower ones. Fluttering over the singed cottongrass heads were several of these butterflies. Miraculously several such colonies had survived and a year or two later their populations were back to normal. George Hyde recalls that Hatfield Moors supported perhaps the largest populations in the country of this butterfly but in the late 1950's a fire of unprecedented severity was thought to have destroyed the entire population. However, in the last three or four years it has reappeared again on the last remaining piece of unworked bog and it has been slowly increasing in numbers.

Peat fires have perhaps always posed a controlling influence on the populations of the resident wildlife of the Moors, like the Manchester Ringlet but, as shown above, a high water table can provide the necessary refugia. There is even some evidence that peat cutting in these areas need not irreversibly affect their populations either. The practices currently adopted by Fisons and similar first elsewhere, where mechanisation enables every trace of peat to be removed over large areas simultaneously, and the land then turned over to agriculture, guarantee the total eradication of the entire peat bog flora and fauna.

\* \* \* \* \*

## DRAGONFLIES OF RUSHYMOOR AND SHIRLEY POOL

S. Foster

Rushy Moor/Shirley Pool is an area of privately owned woodland, marshland and open water, six miles north of Doncaster, and a mile east of the A 19 (SE 568122). In recent years the Institute of Terrestrial Ecology's Biological Records Centre have published distribution maps of British Dragonfly Records dating back to 1961. The earliest known odonatalogical records for Rushy Moor/Shirley Pool are those of S.L. Mosley dated 1888; subsequent records for the site include 14 species out of 38 currently considered to breed regularly in the British Isles. With this number of species the area ranks alongside some of the richest sites in Britain and compares well with Askham Bog (8 species recorded), considered a classic Yorkshire site.

Shirley Pool is the largest water body on the site, and has been maintained as a fish pond for some years. The pond is surrounded by reedbeds and rushes; access to fishing stages is mostly on the south bank, the north bank being almost unbroken reed-bed, willows and woodland. Mixed woods extend round the pond perimeter, and also NNW into a narrow strip access across Rushy Moor, the western edge of which merges into willow carr and boggy marsh. Adjacent water meadows and peaty marshland are criss-crossed by drains, ditches and dykes, isolating the site from surrounding cattle-grazed rough pasture, meadow and arable farmland. The site has remained relatively undisturbed since the turn of the century and supports a rich flora in a variety of habitats. Saw Sedge (Cladium mariscus) Greater Spearwort (Ranunculus lingua) and Marsh Fern (Thelypteris palustris) are notable marsh/fenland local rarities.

### Species List

Aeshnidae	Brachytron pratense	(Mull)
	Aeshna cyanea	(Mull)
	Aeshna grandis	(L)
	Aeshna juncea	(L)
	Aeshna mixta	Latr.

Libellulidae	Libellula fulva	(Mull)
	Libellula quadrimaculata	(L)
	Sympetrum danae	(Sulzer)
	Sympetrum striolatum	(Charp)
Lestidae	Lestes sponsa	(Hanse)
Coenagrionidae	Coenagrion puella	(L)
	Enallagma cyathigerum	(Charp)
	Ischnura elegans	(Vander Linden)
	Pyrrhosoma numpula	(Sulzer)

### Brachytron pratense (Mull)

Uncommon in the British Isles but long established at Shirley Pool. Reported as being there in 1912 (Naturalist 24) and various records for the period 1970-1975. The Nature Conservancy Council regard this as a threatened British species.

### Aeshna cyanea (Mull)

Southern distribution in the British Isles with scattered records in the North. This species was once considered common in Yorkshire (Porritt, G.T. 1907) but recent Yorkshire records show this dragonfly to be the least common of the 3 Aeshna species breeding in Yorkshire. Although recorded from the surrounding district, the first Shirley Pool record seems to be September 1970 (Author).

### Aeshna grandis (L)

Common in the Midlands and the eastern half of England, this species seems to be more common in Yorkshire now than at the turn of the century (Porritt, G.T. 1907). Aeshna grandis is the dominant Aeshna at Rushy Moor/Shirley Pool, appearing in most records for the site.

### Aeshna juncea (L)

Widespread in the British Isles, locally common. H.H. Corbett recorded A. juncea in the Doncaster district in 1917 (Naturalist 1918:97). The dragonfly is common on Thorne Moor, but only appears to have been recorded in recent years from Rushy Moor/Shirley Pool. (August 1970, Author).

Aeshna mixta (Latr)

A Mediterranean species which breeds in the South of England and habitually migrates over considerable distances. A single specimen was taken at Shirley Pool by J.H. Flint in October 1971 (Naturalist:921) - the sole Yorkshire record and without doubt a migrant.

Libellula fulva (Mull)

A rare species with a discontinuous distribution over south and eastern England. G.T. Porritt (1907) records S.L. Mosley as having seen several specimens at Askern in 1888. H.H. Corbett re-discovered the species at Shirley Pool in June 1909 (Naturalist:270).

Libellula quadrimaculata (L)

Widespread in the British Isles. Reported from Shirley Pool in 1912 (Naturalist:24) and regularly since. This dragonfly is rarely seen in large numbers, adults dispersing after emergence. Mass migrations of this species are known to occur in Europe.

Sympetrum danae (Sulzer)

Widespread, locally common. Recorded in the Doncaster area by H.H. Corbett in 1917 (Naturalist: 1918:97). Subsequent records for Rushmoor/Shirley Pool are thin on the ground (September 1970; September 1971; Author). This species is often found in large numbers.

Sympetrum striolatum (Charp)

Widespread south of the Scottish Lowlands, common. Recorded from the Doncaster area (Porritt G.T. 1907, Corbett H.H. 1918) and latterly from Rushmoor/Shirley Pool (Skidmore P. 1970, unpublished; September 1971 and regularly since - Author).

Lestes sponsa (Hanse)

Widespread, generally common. Recorded from the Doncaster area (Corbett H.H. 1918) and in most subsequent records for the site.

Coenagrion puella (L)

Widespread, common. Recorded at Shirley Pool in 1912 (Naturalist: 24) and in most subsequent records for the site. Present in large numbers.

Enallagma cyathigerum (Charp)

Widespread, common. Recorded from the Askern area (Porritt G.T. 1897 Naturalist:116), Doncaster area (Corbett H.H. 1918 Naturalist:97), and in most subsequent records for the site. Present in large numbers.

Ischnura elegans (Vander Linden)

Widespread, common. Recorded at Shirley Pool in 1912 (Naturalist:24) and in most subsequent records for the site. Present in large numbers.

Pyrrosoma nymphula (Sulzer)

Widespread, locally common. Recorded at Shirley Pool in 1912 (Naturalist:24) and in most subsequent records for the site.

Acknowledgements

I am grateful to C. Howes and P. Skidmore for records (unpublished) and assistance in the preparation of this paper.

References

## 1. General

- Cawthorne D. (1976) The Odonata of the Sheffield Area  
Sorby Record No.14.  
Sorby Nat. Hist. Soc., Sheffield.
- Corbet P.S. (1962) A Biology of Dragonflies, Witherby, London
- Corbet P.S.  
Longfield C.  
Moore N.W. (1960) Dragonflies. Collins, London
- Fraser F.C. (1956) Handbooks for the Identification of  
British Insects Vol. I (10) Odonata-Royal Ent.  
Society, London.
- Hammond G.O. (1977) The Dragonflies of Gt. Britain and N. Ireland,  
Curwen, London
- Longfield C. (1949) The Dragonflies of the British Isles,  
Warne, London.

## 2. Records

- Corbett H.H. (1909) Libellula fulva Mull. Re-discovered in  
its old station near Askern - Naturalist:97
- " " (1918) Yorkshire Entomology in 1917. Edited B. Morley.  
Naturalist: 97.
- Flint J.H. (1971) The Dragonfly Aeshna mixta Latr. at Shirley  
Pool. Naturalist: 54.
- Fitter A. &  
Smith C. (1979) A Wood in Ascam.  
William Sessions Ltd., York.

- Porritt G.T. (1897) Preliminary List of the Neuroptera & Trichoptera of Yorkshire. (Naturalist: 115-126)
- " " (1907) Fauna of Yorkshire  
Victoria County History of Yorkshire, Vol.1
- " " (1912) Neuroptera and Trichoptera.  
Naturalist: 24.

## PLANTS OF THE PERMANENT WAY

Ian MacDonald

Railways are a distinct habitat type which have so far received little study due to difficulty of access. This survey covers part of the East Coast Main Line, the area being from a point one mile south of Doncaster station to a point 10 miles north of Doncaster, not including the station itself.

The embankments of the railway provide a home for a wide variety of plants. They are generally well drained, giving ideal conditions in areas which otherwise may be too wet to support a large number of species. These 'reserves' are decreasing due to line closures, for example those which were implemented by Dr. Beeching. Abandoned lines are soon grown over with tall shrubs and trees such as Hawthorn. This cuts out plants which cannot tolerate heavy shade, and invasive plants such as Rosebay soon take over where previously small light-loving plants grew.

Where material is dug out for embankments the excavations often fill with water. These new ponds are colonised with aquatic plants and the edges provide ideal conditions for marsh plants. Railways also provide a refuge for plants which lose their habitats through methods of farming which involve loss of hedgerows, and include mechanised cleaning of ditches.

On the track itself, due to the higher speed of traffic, more ballast is being used to strengthen the track bed. Whereas formerly plants could grow through the ballast from the ash beneath, the ballast is now so deep that they have greater difficulty.

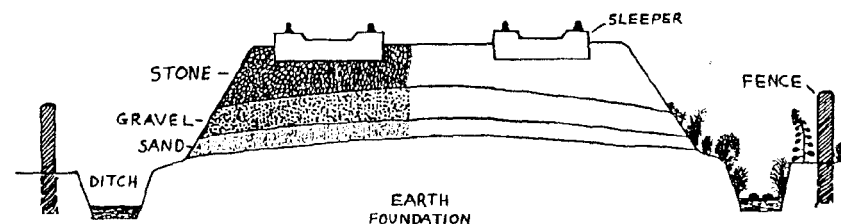
### Construction of an Embankment

The construction of an embankment is known as the Formation. The base consists of earth, either dug out nearby or brought from neighbouring cuttings. On top of this is placed a 6 in. layer of sand, which is raised in the centre to form a camber so that water can run away to the ditches more easily. On top of the sand is a 9 in. layer of gravel, and above this a 15 in. layer of stone. Previously the stone used was blast furnace slag, a by-product of the steel foundries at Scunthorpe. The stone used nowadays is especially quarried for ballast; it comes from Leicestershire and is known as Markfieldite (A micro-diorite which is an igneous rock falling between granite and basalt).

### Management of the Track

Trees and large shrubs are kept from being too invasive by felling and clearing. The main reason for this is to stop them obscuring signals and crossings so that the train drivers get a clear view.

Once a year, a special 'weed killing' train is used to keep down plants growing on the permanent way, but despite this some plants manage to survive. The effect of the weedkiller is monitored, and if necessary a different type is used.



FORMATION OF EMBANKMENT

I MCDONALD

### Seed Dispersal on the Track

Seeds that rely on wind for dispersal can easily be blown up and down the line in the draught caused by passing trains. As the line covered by this survey is nearly North-South, and the prevailing wind is from the West, it can be seen that trains play a great part in seed dispersal, not only on to other parts of the track, but also on to the surrounding areas of ground.

Another way in which seeds can be carried along is when they stick to the grease on buffers and other fittings on rolling stock. Friction between buffers and vibration cause small pieces of grease to fall off, carrying seeds with them, thus transporting them many miles from their parent plants. Rain action on rolling stock must also wash off some seeds. One day at work, I noticed some seeds of Agrimony sticking to my coat; this is another way in which seeds may be carried. By means of hooked bristles they attach themselves to animal fur or human clothing, and fall off later.

### Variety of Plant Species which occur on the Line

Plants have sometimes been introduced unintentionally from gardens alongside the line, and in some cases the remnants of gardens can be seen at crossings where the Keeper's Cottage has long since disappeared. These old gardens sometimes supply a source of rhubarb for passing railwaymen! Sometimes the seeds are introduced from other parts of the country as in the stone mentioned before which comes from Leicestershire.

In past years I have seen tomato plants growing in the track bed. These would probably have arrived there, thanks to human carriers. Tomato seeds which have been eaten pass through the body, and are then flushed from the train toilets directly on to the track. British Rail have not yet got around to installing toilet-refuse tanks on coaches such as those fitted to aircraft. This may be a novel way of dispersing seeds, but it is not very pleasant for those who work on the track.

The following is not a complete list of all the plants which I have observed along the line; rather, a selection of the more unusual.

\* \* \* \* \*

Achillea ptarmica	Sheezewort	P	Native	Common in damp places
Agrimonia eupatoria	Common Agrimony	P	"	Hedgebanks, roadsides etc.
Angelica sylvestris	Angelica	P	"	Fens, woods, damp meadows
Armoracia rusticana	Horseradish	P	Intro.	Waste places, stream banks, etc.
Asparagus officinalis	Asparagus	A	"	Waste places, sand dunes etc.
Campanula rotundifolia	Harebell	P	Native	Heath and dry grassy places
Centaurea scabiosa	Greater Knapweed	P	"	Dry grassland, hedgebanks etc.
Chaenorrhinum minus	Small toadflax	A	"	Common along railway and waste places
Colutea arborescens	Bladder senna	Sh	Intro.	Naturalised (from Mediterranean)
Conium maculatum	Hemlock	Bi.	Native	Damp places, woods, near water
Daucus carota	Wild Carrot	Bi.	"	Grassy places (likes limestone)
Dipsacus fullonum	Teasel	Bi.	"	Stream banks, rough pasture
Epipactis helleborine	Broad-leaved Helleborine	P	"	Woods, hedgebanks, etc.
Erigeron acer	Blue Fleabane	A or Bi.	"	Local
Eupatorium cannabinum	Hemp Agrimony	P	"	Dry grassland, especially calcareous
Fragaria vesca	Wild Strawberry	P	"	Marshes, damp woods
Hieracium pilosella	Mouse-ear Hawkweed	P	"	Scrub on base-rich soil
Humulus lupulus	Hop	P	"	Different habitats countrywide
Inula conyza	Ploughman's Spikenard	Bi. to P.	"	Hedges and thickets
Knautia arvensis	Field scabious	P	"	Dry limestone areas
Lathyrus latifolius	Everlasting Pea	P	Intro.	Dry grassy places
Linaria purpurea	Purple Toadflax	P	"	Naturalised in waste places
Linaria repens	Pale Toadflax	P	Native	Naturalised old walls and waste places
Lysimachia vulgaris	Yellow loosestrife	P	"	Dry stony places (calcareous)
Lythrum salicaria	Purple loosestrife	P	"	Fens and beside rivers, lakes
				Reed swamp, fens etc.

Medicago sativa	Lucerne, Alfalfa	P	Intro	Naturalised on waste ground
Melilotus officinalis	Common Melilot	Bi.	Intro.	Fields, waste places (mainly S)
Odontites verna	Red Bartsia	A	Native	Cultivated fields
Oenothera biennis	Evening Primrose	Bi.	Intro.	Waste places
Pastinaca sativa	Wild Parsnip	Bi.	Native	Roadside grassy waste places
Pulicaria dysenterica	Fleabane	P	Native	Marshes, ditches etc.
Reseda lutea	Wild Mignonette	Bi.	"	Disturbed ground etc.
Reseda luteola	Weld	or Bi.	"	Disturbed ground etc.
Rosa arvensis	Field Rose	Sh.	"	Hedges - more common in south
Rubus caesius	Dewberry	Sh.	"	Scrub, mainly on basic soil
Sanguisorba officinalis	Great Burnet	P	"	Damp Grassland
Saponaria officinalis	Soapwort	P	?	Waysides, usually near houses
Sedum album	White stonecrop	P	Intro.?	Walls and rocks
Sedum reflexum		P	Intro.	Old walls, rocks
Sedum telephium	Orpine, Livelong	P	Native	Woods and hedgebanks
Sisymbrium altissimum	Tall Rocket	A	Intro	Waste places
Tanacetum vulgare	Tansy	P	Native	Roadsides etc.
Trifolium arvense	Haresfoot Clover	A	"	Sandy fields and dry pasture
Verbascum nigrum	Dark Mullein	Bi.	"	Waysides - common in south

## TO THOSE WHO COME AFTER

P. Skidmore

Our society has just participated in another Public Inquiry but the forthcoming ministerial decision will probably prove irrelevant.

Following a County Council refusal for planning permission to quarry sand and gravel from beneath some 200 acres of Hatfield Moors, on grounds of the ecological importance of the site, Hatfield Aggregates appealed against the refusal and promised to restore 72 acres to peat bog after the extraction. Fisons would provide peat and turf from the heart of the last remaining unworked part of the moor to "seed" the scheme, but even the firm's ecological consultant, R.D. Helliwell could not say whether a bog or a fen would result.

At the inquiry irrefutable proof of the national importance of Hatfield Moor was presented by our society along with the Royal Society for the Protection of Birds, the Yorkshire Naturalists' Trust, the South Yorkshire County Council and the Nature Conservancy Council. Amongst the many points of evidence given were the following:-

Hatfield Moor and Thorne Moor are the two largest remaining fragments of lowland peat bog in England.

Both sites support many nationally rare plants and animals, some occur in no other places in the British Isles.

Hatfield Moor includes habitat types not found on Thorne Moor, including many areas of mature woodland. It is one of only three areas in Britain, apart from the Scottish Highlands, in which Scots Pine is thought to be native (the other two being the East Anglian Brecklands and the Surrey Greensand heaths). The insect fauna of the native poplars on Hatfield Moor is said to be the richest in northern England.

Hatfield Moor is the only lowland breeding locality in England for the Mountain Linnet or Twite, and supports nationally significant populations of the rapidly decreasing Nightjar and Nightingale.

The land drains emanating from Hatfield Moor support some of the richest pondweed communities in the country.

The Molluscan fauna of Hatfield Moor is staggering, comprising about one third of the entire British species. For shieldbugs it is the richest place in northern England.

In the face of all this evidence, Fisons stated unequivocally their intention to completely clear Hatfield Moor of peat and vegetation and to sell the land for agriculture, irrespective of the outcome of the Inquiry.

So, whether the Hatfield Aggregates are allowed to quarry or not, Fisons intend to destroy and erase this priceless heritage from our very doorstep.

Why do we involve ourselves in these hopeless causes? Why should the landowners not do precisely what they please with their property? If, as in this case, it means wiping out nationally important populations of rare birds, plants and butterflies, why bother? We can after all watch Flight of the Condor on the telly, or save up for that holiday in Barra, Bermuda or Borneo.

Through all our years of conservation battles our guiding principle has been, in the words of King George VI -

"The Countryside and Wildlife of today are not ours to do with as we please, we must account for them to those who come after".

Will "those who come after" hold us guiltless if we stand idly by whilst their rightful inheritance is destroyed?

A major objective of this journal will be to show that Doncaster's fauna and flora is not as flat and featureless as our landscape appears to the uninitiated eye. We live in a wonderful district, rich in wildlife and with perhaps more than our fair share of plants and animals which are rare or even close to extinction nationally. But this realisation places upon us a burden of responsibility for, if our wildlife means anything to us, we must pass on our inheritance to our successors, enhanced even, if we hope to make a better world.

\* \* \* \* \*

## BEFORE AND AFTER

G. Chapman

If you were to ask me "was that a stoat or a weasel that ran across the path?" or, "is that a kestrel or a sparrow-hawk hovering in the sky?" to be honest about it my answer would have to be an inspired guess or a straight "don't know".

To be quite truthful there was a time when it did not matter - a walk in the countryside was just a simple matter of going from here to there. The time I refer to is what I like to think of as b.c. - before Clegg.

The beginnings of such puzzlement and wonder date back a few years when, innocently, my wife and I went to a natural history course given by a certain Michael Clegg who was then keeper of something or other at Doncaster Museum - since those days Mr. Clegg has moved on quite a pace and has, outside his normal occupation, deservedly made a niche for himself in radio and television.

I remember being impressed in the early days of initiation by Mr. Clegg's great interest in brown mice and in particular a colony that he had under observation at Spurn Point - until then the only reaction to mice that I had come across was of office girls jumping on chairs at the sight of one and chief clerks attempting to 'see them off' with their size nines.

About this time I was also introduced to the delights of regurgitated owl pellets and the evacuation of animal bowels - fondly referred to as droppings. Oh! what wonders to behold but, nevertheless, most fascinating sources of information - until then completely unknown to me. Another equally unknown world was also opened up during this period - the skinning of tiny mammals such as voles and shrews and the subsequent stuffing of them - taxidermically speaking that is.

You are aware by now that I am not exactly God's gift to the naturalist world. Indeed it may not have gained a deal from me at all but I have certainly benefited from my acquaintance with it - or shall I say from all the speakers and members of the Society who have opened up new horizons. Whether on holiday, out rambling, gardening or just going

backwards and forwards to work the scene around me has taken on new dimensions over recent years and, I hope, will do in the years to come.

As I was saying, a stroll in the countryside used to take me just from here to there - not any longer. Nowadays, the high-ways and byways beckon me on until the old legs tell me it is time to turn back.

George Chapman - December 1982

## KEEP AN EYE ON THOSE WEEDS !

D. M. Bramley

When you are gardening don't be in too much of a hurry to throw all your weeds on the compost heap - you may have a rarity flourishing on your cabbage patch or your herbaceous border.

Occasionally strange plants turn up unexpectedly, as one did in the garden of Mr. and Mrs. Keeble, members of the Doncaster Naturalists, in Thorne Road in July 1980. Doncaster Museum Natural History Department was informed, and a specialist went along to identify the strange weed, which turned out to be Thorow-wax (*Bupleurum rotundifolium*). This plant belongs to the family Umbelliferae which also contains such common wild flowers as Hogweed (*Heracleum sphondylium*), Cow Parsley (*Anthriscus sylvestris*) and Angelica (*Angelica sylvestris*). It received its English name of Thorow-wax from the form of its growth - the stem seeming to grow (or wax) through the leaves.

In one Flora, I found the following note on its nature and distribution:-

"A cornfield weed apparently indigenous to the Mediterranean region but now widely spread over Europe and Western Asia, and introduced into North America. It occurs in

cornfields in chalky soils in East and South-east England, but not in Scotland or Ireland".

Bentham and Hooker 1937 edition.

There are some old records of Thorow-wax in west and south Yorkshire, some of which are listed below:-

- 1805 - First known record J.D. Dalton at Ripon
- 1828 - Recorded in the Rotherham District (L. Langley) Lees Flora of Yorkshire.
- 1840 - Cornfields at Campsall (Lancaster in Baines)
- 1840 - Banks of the Went near Ferrybridge (Baines)
- 1848 - Adwick area, recorded in an article in the 'Phytologist' p. 445- p.448 "Records of Rare Plants occurring in the neighbourhood".
- 1888 - Cornfields near Maltby (G.E. Smith)
- 1968 - Garden in Carr House Road, Doncaster, specimen in Herbarium, Doncaster Museum
- 1980 - Garden of Mr. and Mrs. Keeble, Thorne Road, Doncaster, report in the Doncaster Evening Post
- 1982 - In the garden of Mrs. Wood, Suffolk Road, Woodlands.

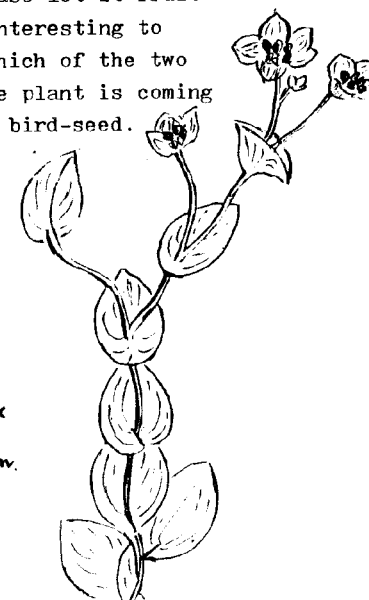
In Clapham, Tutin and Warburg, Excursion Flora, 1975 edition, all five species of *Bupleurum* listed are described as rare or local. There are two of these species which are very similar - *Bupleurum rotundifolium* L. and *Bupleurum subovatum*.

The difference between the two seems to hinge on whether the fruit is or is not covered with tubercles! So if you find Thorow-wax growing in your garden, please let it fruit and contact the Museum. It would be interesting to examine a fruited specimen to ensure which of the two species we are finding. As to where the plant is coming from? One suggestion is from imported bird-seed.

D. M. Bramley.

Thanks to C.A. Howes, Doncaster Museum,  
(for records)

Thorow-wax  
*Bupleurum*  
*rotundifolium*.



REPORT OF THE JOINT MEETING OF THE DONCASTER NATURALISTS' SOCIETY AND THE  
YORKSHIRE CONCHOLOGICAL SOCIETY TO SPROTBOURGH ON SATURDAY,  
11 SEPTEMBER 1982

## MOLLUSCAN REPORT

Adrian Norris, Leeds City Museum

The visit to the Nature Reserve at Sprotborough resulted in 34 species of mollusc being recorded from within the reserve and a further 4 species from the surrounding area. This compared very favourably with a visit made by the late Mrs E.M. Morehouse on 25th May, 1946, when only 14 species were noted. Only one species of freshwater mollusc was noted by E.M. Morehouse, and that was Lymnaea (Radix) peregra (Muller) 1774; we found 6 species, including one Physa cf acuta Draparnaud 1805, which is an introduction from the continent of Europe, and as such is still rather local in its distribution.

The heavy pollution of the rivers and ponds in the Doncaster district may have been the reason for the poor record of freshwater molluscs noted by E.M. Morehouse. In recent years the evidence suggests that the situation is improving. In particular the River Don is much improved, but a good deal more improvement is needed before the flora and fauna can return to its pre-industrial state.

The land species do not show the effects of pollution as readily as the freshwater molluscs, and therefore the difference in the number of species found by E.M. Morehouse and ourselves is not so easily accounted for. A few species would have been unknown to E.M. Morehouse, but this would not make any significant difference, therefore, collector failure cannot be ruled out.

The most interesting species found were Physa cf. acuta, which I have referred to above, Zenobiella (Zenobiella) subrufescens (Miller 1822) an old woodland species now rare in Yorkshire, and Boettgerilla pallens Simroth 1912, a slug first recorded in Britain in 1972, in the English Lake district, now spreading throughout the country due to the activities of gardeners and horticulturalists. The Physa was absent in the River Don, whilst Zenobiella and Boettgerilla pallens was found in Pot Ridings Wood, part of the Yorkshire Naturalists Trust Nature Reserve, N.G.R. SE/44/529003.

### LIST OF SPECIES FOUND

Notes. Species marked with an asterisk (\*) noted by Mrs E.M. Morehouse in 1946

Species marked with a (+) found outside the Nature Reserve mainly in the area of limestone quarries on the east bank of the River Don.

### FRESHWATER MOLLUSCA

- Potamopyrgus jenkinsi (E.A. Smith 1889) Found both in the flash and the R. Don
- Physa cf. acuta Draparnaud 1805 Abundant in the R. Don
- Lymnaea (Galba) truncatula (Muller 1774) Very common in the flash, and on wet mud
- Lymnaea (Galba) palustris (Muller 1774) Very common in the flash
- \* Lymnaea (Radix) peregra (Muller 1774) Very common both in the flash and the R. Don
- Anisus (Disculifer) vortex (Linnaeus 1758) Common in the flash

### TERRESTRIAL MOLLUSCA

- \* Carychium minimum (Muller 1774) Fairly common under leaves and old logs etc.
- Succinea (Succinea) putris (Linnaeus 1758) Fairly common in the flash
- Cochlicopa lubrica (Muller 1774) Common under stones, old wood etc.
- \*+ Lauria (Lauria) oylindracea (Da Costa 1778) Found only in the quarry
- Ena (Ena) obscura (Muller 1774) Several found in Pot Ridings Wood
- \* Discus (Discus) rotundatus (Muller 1774) Very common
- \* Arion (Arion) rufus (Linnaeus 1758) Very common
- Arion (Carinarion) circumscripatus (Johnson 1828) Fairly common in Pot Ridings Wood
- Arion (Kobeltia) distinctus (Mabille 1868) Fairly common under stones and wood
- Arion (Kobeltia) intermedius (Normand 1852) Fairly common
- Vittrina (Vittrina) pellucida (Muller 1774) Very common
- Vitrea (Crystallus) crystallina (Muller 1774) Common under stones and old wood
- Aegopinella pura (Alder 1830) Scarce, found only in Pot Ridings Wood
- Aegopinella nitidula (Draparnaud 1805) Very common under rotting wood
- \* Oxychilus (Oxychilus) cellarius (Muller 1774) Very common
- \* Oxychilus (Ortizius) alliarius (Miller 1822) Very common
- \* Oxychilus (Ortizius) helveticus (Blum 1881) Scarce, found only in Pot Ridings Wood
- Zonitoides (Zonitoides) nitidus (Muller 1774) Common in the flash
- Milax (Milax) budapestensis (Hazay 1881) Several found in Pot Ridings Wood

Boettgerilla pallens (Simroth 1912)	Several found under stones and logs in Pot Ridings Wood
*Limax (Limax) maximus (Linnaeus 1758)	Several found in Pot Ridings Wood
Deroceras (Deroceras) laeve (Muller 1774)	Very common on mud in the flash
*Deroceras (Agriolimax) reticulatum (Muller 1774)	Very common
*Euconulus (Euconulus) fulvus (Muller 1774)	Fairly common under stones and old wood
Clausilia (Clausilia) bidentata (Strom 1765)	Scarce, found only in Pot Ridings Wood
+Candidula intersecta (Poiret 1801)	Found only in the area of the quarries on the east bank of the River Don
Monacha (Monacha) cantiana (Montagu 1803)	Fairly common
Zenobiella (Zenobiella) subrufescens (Miller 1822)	Rare, only one specimen found in Pot Ridings Wood
*Trichia (Trichia) hispida (Linnaeus 1758)	Fairly common
+Arianta arbustorum (Linnaeus 1758)	Found only in the area of the limestone quarries
*Cepaea nemoralis (Linnaeus 1758)	Fairly common
*+Helix (Cornu) aspersa (Muller 1774)	Found only in the area of the limestone quarries

#### ADDITIONAL SPECIES

A further 5 species have been recorded from Sprotborough by B.C.Eversham and M.A.Moss in the years 1980 and 1981

- Arion (Mesarion) subfuscus (Draparnaud 1805)
- Arion (Carinarion) silvaticus (Lohmander 1937)
- Deroceras (Malino) caruanae (Pollonera 1891)
- Cochlodina (Cochlodina) laminata (Montagu 1803)
- Trichia (Trichia) striolata (C.Pfeiffer 1828)

#### LIST OF SLUG SPECIES FOUND IN THE GARDEN OF MR COLIN HOWES OF DONCASTER MUSEUM

- NGR/SK/43/557998 Near New Edlington Doncaster. 11th September 1982
- Arion (Mesarion) subfuscus (Draparnaud 1805)
- Arion (Kobeltia) distinctus (Mabile 1868)
- Milax (Milax) budapestensis (Hazey 1881)
- Deroceras (Agriolimax) reticulatum (Muller 1774)
- Deroceras (Malino) caruanae (Pollonera 1891)

## GERBILS IN YORKSHIRE

C. A. Howes

In 1954 the mongolian gerbil or clawed jirid (Meriones unguiculatus), a native of the Gobi Desert and adjacent arid steppeland regions of the U.S.S.R. and the People's Republic of China, was found to live and breed well under laboratory conditions. Since then, not only has it become extensively used as a laboratory experimental animal, a thriving pet trade has developed and populations are widely kept in schools.

Being potentially destructive of grain crops and as possible carriers of bubonic plague and rabies, it has been suggested (Gulotta, 1971) that the naturalisation of the species poses risks to agriculture and human health.

The naturalisation of mongolian gerbils in the Isle of Wight since 1973 has demonstrated the possibility of feral populations becoming established in the British Isles (Lever, 1977). It is, therefore, worth monitoring all instances where liberated or escaped animals have been found in the wild. The following are Yorkshire records received to date.

1. A single animal was seen during March 1971 on stacks of drying peat blocks on Thorne Moors (SE 71) and another was seen on 4th April 1971, again on drying peat blocks on adjacent Swinefleet (Goole) Moors (SE 71) (pers.comm. J.McGarry and Howes, 1973). Unless purposely released, the presence of gerbils on these lowland peat moors is puzzling as urban areas from where specimens could have escaped, are some distance away. There have been no subsequent reports by either peat or workers or visiting naturalists.
2. During 1972 and 1973, at Armthorpe Comprehensive School (SE 60) gerbils kept in the biology department frequently escaped from insecure cages whilst being handled by school children. Periodically escapees, which survived successfully in storerooms, beneath floors and in grain bins, were trapped and killed to avoid the introduction of infection or parasites from the 'wild' into laboratory populations. Unfortunately,

records were not kept of numbers involved, or whether there was any indication of breeding whilst at liberty. Trapped specimens were reported to be well nourished and in good condition. Escapees were also seen under school outbuildings where they survived the winter of 1972-73.

In 1975, more animals escaped whilst the biology department was being transferred to other premises on the school campus and specimens were frequently seen around outbuildings and sheds used to house livestock. Since 1975 the classroom stocks have been securely caged and close monitoring of numbers has shown that none have escaped. However, specimens thought to have survived from the 1975 escape were still at large in the school grounds, notably frequenting a pipe leading under one of the outbuildings. The last authenticated sighting was in May 1977.

3. On two occasions during the afternoon of 19th August 1975 (a hot day) three gerbils were seen frequenting a hole amongst roots on an oak tree in Chellow Dene, Bradford (SE 13). Being near a housing estate it is likely that they were escaped or deliberately released pets (Pers.comm. C.Thoday).
4. During 1977 a domestic cat caught a specimen alive and unharmed at Pannal Ash, Harrogate (SE ). The animal, which was not claimed by neighbours, was subsequently kept as a pet for two years (pers.comm. Mrs.J.G.Ratcliffe).
5. In late July 1980 an adult gerbil was found in the rough grass verge bordering Springwell Lane Tip, Balby, Doncaster (SE 560004). The site is adjacent to housing estates and it is possible that the animal may have been abandoned by or escaped from local children 'fostering' it during the school vacation (pers.comm. J.Harrison).

I would like to thank Mr. B. Smith, head of biology, and Mr. P. Broadbent, animal husbandman at Armthorpe Comprehensive School, Mrs. J.G. Ratcliffe and Messrs. J. Harrison, J. McGarry and C. Thoday for their records.

#### References

- Gulotta, E.J. (1971) Mammal species, No. 3 Meriones unguiculatus. J. American Soc. Mammalogists 1-5
- Howes, C.A. (1973) Mammals in Yorkshire Naturalists' Union Report for 1972. Naturalist Supplement 4-7.

#### VISITING NATURE RESERVES

If you ~~are~~ interested in visiting different habitats either within easy reach of Doncaster or when you are on holiday, you will find "A Nature Reserves Handbook" very useful. This is a new publication by the Royal Society for Nature Conservation, and is available to members of County Trusts, e.g. The Yorkshire Naturalists' Trust.

Most of the Reserves listed can be visited if you have proof of current Membership of a Trust, which must be produced if you are asked by a Warden; some Reserves need a special permit and addresses are given so that application may be made for them. Altogether 363 Reserves are listed and described, with grid reference for locating each area. Arranged by counties, it is a simple matter to pick out somewhere of interest to visit when on holiday. The descriptions indicate the type of area in which the Reserve is situated - marsh, bog, limestone, grassland etc. and also the special "goodies" of the Reserve. Naturally, the general rules about Reserves will operate - no picking, collecting or introducing flowers or plants, animals, birds, insects, etc. which in any case responsible naturalists would not do.

Not all Nature Reserves are mentioned in this book, but it is the first time that this sort of co-operation between the R.S.N.C. and the County Trusts has taken place. The Trusts themselves have chosen which Reserves are included, and they welcome comments and observations from members who visit them.

If you are visiting North Wales you could see Spring Squill (Scilla verna) at Cors Goch, Llanbedrgoch on Anglesey, or try your luck at bird-spotting at Cemlyn, Llarhwydrys on the North coast of Anglesey, where a large number of Common, Arctic and Sandwich Terns nest on islands in a brackish water pool. In and around the Reserve they claim a very good list of winter wildfowl visitors as well as resident species.

On the other hand a visit to Scotland could include St. Abb's Head near Eyemouth, Berwickshire, where the rocky cliffs are famous for breeding seabirds, which include 10,000 guillemots, 500 razorbills, and 5,000 kittiwakes. With luck you could see the Botanical rarities at Loch Fleet near Golspie, Sutherland - that is if you can afford the petrol to get there!

Nearer home, I am sure you would enjoy a visit to Burton Gravel Pits (near Lincoln) to see the wildfowl and swamp plants in and around 5 gravel pits belonging to the Lincolnshire Trust. There are marked trails, but wellies are needed!

"A Nature Reserves Handbook" Published 1982 by R.S.N.C.  
Price £4.50. Obtainable from County Trusts and only available to members of such Trusts.

#### DONCASTER NATURALISTS' SOCIETY EVENTS, 1983

(Unless otherwise stated all indoor meetings are held at D.M.I.H.E., Waterdale, 7.15 - 9 p.m.).

February 16th	President's Address "Exploits among the Mountain Tops" Don Bramley
March 2nd	Blacktoft Revisited - Andrew Grieve R.S.F.B. (Warden at Blacktoft Sands Nature Reserve)
March 6th	Mountain Hare Walk - Details later
March 16th	Short Papers by Members
March 30th	A.G.M. and Spring Exhibition

For further details of meetings contact: C.A.Howes,  
Museum and Art Gallery,  
Chequer Road,  
Doncaster.

#### Summer Field Meetings

Details of these will be available at the A.G.M.  
Please make known any requests for expeditions to -  
Mr.C.A.Howes, or other members of the Committee.

#### Acknowledgements

Once again - thanks due to all who have co-operated to produce this issue. (In particular, David Gagg, and of course authors of papers).

Editor.