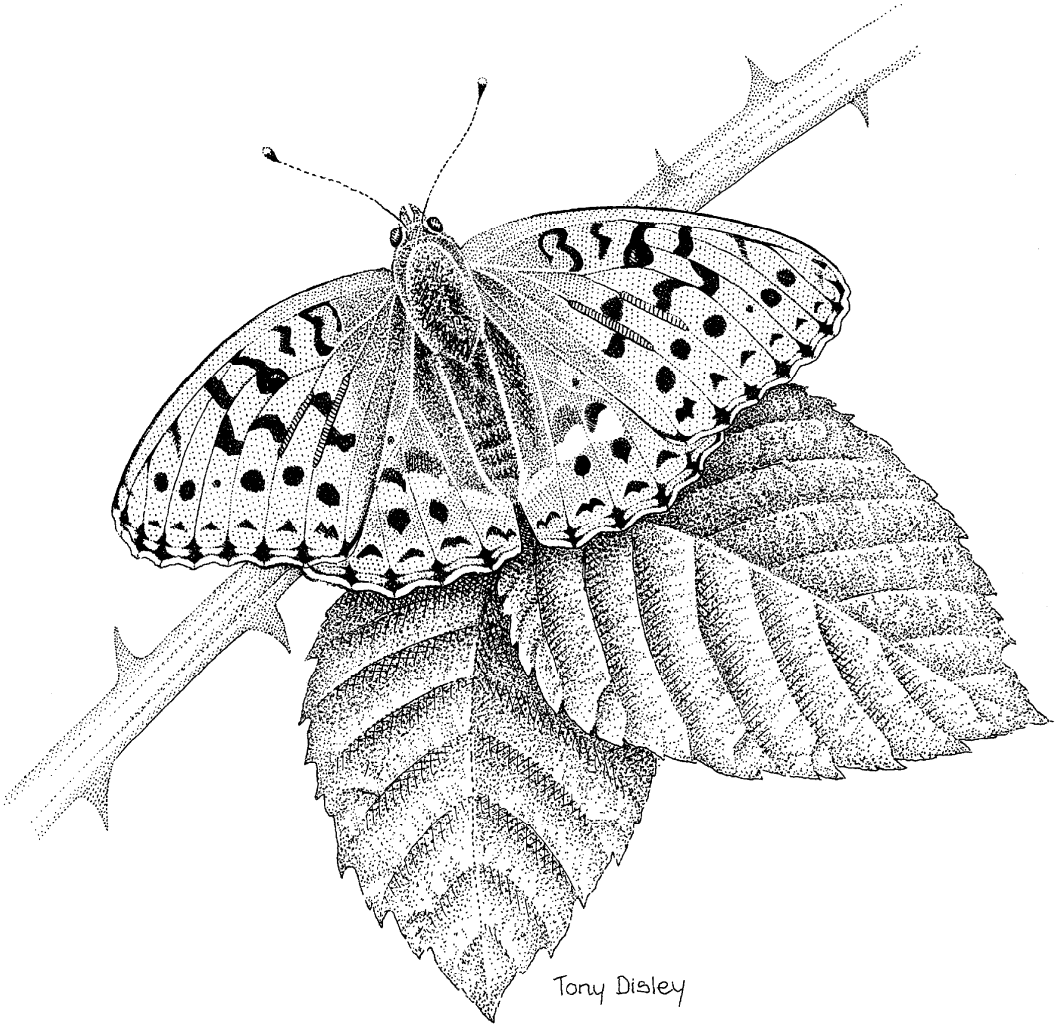
Lancashire & Cheshire Fauna Society

GENERAL REPORT 2004



Edited by Frank Walsh and Dave Bickerton

Lancashire & Cheshire Fauna Society

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Introduction

Frank Walsh

In earlier years, the Lancashire & Cheshire Fauna Society routinely produced an annual Bird Report, and a General Report that contained a wide variety of contributions about other faunal groups that occur in Lancashire and Cheshire. The mainstay of this report was a formal list of recorders, who provided regular updates on changes to the fauna of our region. However, this system slowly fell into disuse as recorders dropped out and were not replaced, resulting in decreasing numbers of contributions. The general report eventually ceased being published annually and the last one was issued in 1996.

However, one of the aims of the L&CFS is stated as **'the recording in published form of other** (i.e. non-avian) **faunal observations in the counties of Lancashire, Merseyside and Cheshire'.** Malcolm Greenhalgh, one of the contributors to this report, has pointed out that years ago the Lancashire Naturalists' Trust (now Lancashire Wildlife Trust) published a journal called *Nature in Lancashire* in which serious items concerning our flora and fauna were published. Before that, there was the North West Naturalist while in the early 1990s Steve Garland published the short-lived *Lancashire Wildlife Journal*. The magazine of the LWT, *Lapwing*, does not cover the same ground as these defunct journals. Furthermore, it has become rare for national journals, such as *Bird Study*, to accept papers of a local nature. It, therefore, appears that there is a vacant niche that one of the aims of our Society suggests we should try to fill.

I hope that the present report will prove to be of interest to the membership. There is already the offer of an important paper for another report and suggestions for other contributions. With the agreement of the Officers of the Society and the 2004 AGM I hope to produce another General report in early 2006. However, this will only be possible if members are prepared to submit suitable items on the non-avian fauna, as well as their important contributions to the annual Bird Report.

Views on the contents and layout of the present report, and ideas and contributions for the next report will be gratefully received and should be sent to the Chairman. Further information about the L&CFS can be obtained from the Society's web-site: www.lacfs.org.uk

Officers of the Lancashire and Cheshire Fauna Society, 2003 –2004

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Cetaceans in Lancashire, Merseyside, Cheshire and south Cumbria: a summary of live sightings and strandings from Wirral to Morecambe Bay.

S.J. Hayhow

Introduction

Whales, dolphins and porpoises are mammals that are specially adapted to life in the sea. Together they are known as cetaceans. Like all mammals cetaceans breath air, are warm blooded and give birth to live young which are suckled with the mothers' milk. Cetaceans are divided into two orders: Mysticeti (baleen whales) and Odontoceti (toothed whales).

Twenty-five species have been recorded around British coasts (Evans, 1990) and so they make up one quarter of all British mammal species. Almost half have been found along the coast between the Wirral and Walney Island, on the north side of Morecambe Bay.

This paper summarises published records of live sightings and strandings, including a complete listing of stranding data from the Natural History Museum (R. Sabin pers. comm.) and available recent records both live and dead. The geographical coverage includes the modern counties of Cheshire, Merseyside, Lancashire and Cumbria (Morecambe Bay only). This corresponds to Watsonian vice-counties VCs 58,59,60 and 69.

The aim is to set a baseline for future research. Coordinated watches and a greater number of observers, both land and ship-based, and more scientific study of the Irish Sea mean that records in this millennium are likely to be much more comprehensive.

SYSTEMATIC LIST OF CETACEANS RECORDED IN CHESHIRE, MERSEYSIDE, LANCASHIRE AND SOUTH CUMBRIA (MORECAMBE BAY ONLY)

BALEEN WHALES

Fin Whale ***Balaenoptera physalus***

2 records

A dead specimen was washed ashore at Seaforth, Merseyside (SJ3297) on 16 July 1985. It had possibly been killed by a ship. The length was 16.15m and a flipper and baleen were preserved in Liverpool Museum (NHM/NML/M.Largen).

An immature female was found dead at Heysham Harbour, Lancs (SD4161) on 27 November 2000. A post mortem carried out showed several factors pointing to a live stranding (R. Deaville pers. comm.). The body weight was 8 tons, according to the crane reading, and the length from tip of upper jaw to tail notch was 11.1m. It was buried on Salt Ayre Tip, Lancaster.

Minke Whale ***Balaenoptera acutorostrata***

7 records

This is the commonest of the baleen whales in the Irish Sea. They are not numerous and only recorded sporadically, although better coverage may prove them to be annual visitors. Strandings, involving one per decade, are shown in Table 1.

Table 1. Minke Whale Strandings

County	Locality	Grid ref.	Date	Recorder/Source	Sex	L(m)	Comments
M	Crosby beach	SD2903	26/5/48	NHM/NML/ LCFC Rep No28	-	8.38	dead
M	Hilbre Island	SJ1987	2/3/54	NHM	-	1.34	-
M	Ainsdale beach	SD2-1-	4/7/54	NHM/NML/ R. Wagstaff/ LCFC Rep No.31	F	9.75	dead
L	Fleetwood, Rossall Pt	SD 3-4 -	30/8/65	NHM/Fleetwood Chronicle	-	6.1	skull in Fleetwood Museum
L	Bispham	SD3025	31/7/71	NHM/M.Jones/ H.Shorrock/ NML LCFC Rep.1973	M	5.26	imm. Stranded live; shot
L	Carnforth, Crag Bank	SD482705	1/8/88	NHM	-	5.18	decayed
C	Widnes, Hale Bank	SJ4880	7/8/98	Media	-	6.0	stranding

With extensive media coverage, the whale in the last stranding incident acquired the name 'Widnes Willy'. Its repeated beaching over several days brought efforts to free him by the RSPCA, Whale Rescue, Cheshire Police divers, the Cheshire Fire Brigade and wildlife officers watched by an audience of up to 600.

Sei Whale *Balaenoptera borealis*

2 records

An immature swam into the mouth of the River Lune at Sunderland Point, Lancs on 5 September 1980. Sadly, the 7.21m long whale died but the skeleton was preserved and displayed at Lancaster University (Prof. W.T.W. Potts pers. comm.).

The second, an 8 – 10 year old female, was seen swimming up the River Lune but became stranded and died at Pilling Sands on 29 September 2001 (R Stringer, M Jones, S.J.Hayhow *et al*). The previous day a report of two whales off Walney Island may have involved this individual. The other continued south past Blackpool. (N. Hammond pers. comm.). The following day the carcass had been moved by the tides to 1 km. off Cockersands. No full autopsy was possible but a team from the Natural History Museum took back samples of skin, blubber and muscle tissue for DNA analysis. The thickness and consistency of the blubber suggested that the animal had not fed for some time. Following storms the animal again moved, this time 26 km north 24 hours later off Ulverston. By the 9th it had been washed further up the Leven to Greenodd Sands. The skeleton was salvaged eventually by the Royal Scottish Museum.

Rorqual sp. *Balaenoptera sp.*

One record

An unidentified 7.5m rorqual was found dead at Wallasey, Wirral on 12 May 1930 (NHM).

Humpback Whale *Megaptera novaeangliae*

2 records

On 17 July 1863 a 9.5m long whale was observed by fishermen stranded on a sandbank at Speke, Merseyside. It later died and the "carcass was purchased by Mr. Brock of Clement Street, Vauxhall Road, who most liberally presented the skeleton to the [Liverpool] Museum, where it was carefully mounted by Mr. Henry Reynolds, the Museum Taxidermist" (Moore, 1889).

The second record was of three seen "leaping and playing" in the lower part of Heysham lake, a quarter of a mile offshore, in late August or September 1938 by Dr. F.W. Hogarth of Morecambe (Ellison, 1959).

Baleen Whale sp. *Mysticete sp.*

One record

The decayed tail and head of an unknown baleen whale, at least 7m long, was found at Aldingham, Cumbria on 29 Aug 1990 (NHM).

TOOTHED WHALES

Common Dolphin *Delphinus delphis*

Uncommon visitor

Despite the English name this species is infrequently recorded off North-west England but may be increasing in numbers in the southern Irish Sea (Northridge, 1990). When they are seen they may be in larger numbers than other cetaceans as they congregate in large schools. They have also increased further north in the Firth of Clyde but appear to be scarce in the central Irish Sea (Evans et al, 1986). Sheldrick (1976) suggests a northward shift in feeding areas due to changes in prey distribution. On 12 October 1957 Prof. J.D. Craggs *et al* watched a school of between 20 and 30 making their way up the River Dee in the Swash, the deep-water channel west of Hilbre Island. They were blowing and occasionally leaping clear of the water. About this time herring shoals reappeared in the Dee after an absence of many years (Ellison, 1959). Strandings of this species are listed in Table 2.

Table 2. Common Dolphin Strandings

County	Locality	Grid ref.	Date	Recorder/Source	Sex L(m)	Comments
M	New Brighton		13/2/1879	Liverpool Biol. Soc.		tail cut off by steamship screw; mounted for Liverpool Museum
M	West Kirby		17/2/1893			two dead
L	Heysham Harbour,		1944 or 45	N.F. Ellison/ LCFC Rep.		two dead

County	Locality	Grid ref.	Date	Recorder/Source	Sex L(m)	Comments
	S. Wall.			No.27/NML		
C	Parkgate, R.Dee		2/4/50	NHM	2.0	
M	Hilbre Island		13/2/54	Prof.J.D. Craggs		decayed
L	Blackpool, Squires Gate	SD33 –	2/10/63	N.F. Ellison/ M.Jones/ LCFC Rep.No.34		dead
L	Bolton-le-Sands, Redbank	SD3600	6/12/75	NHM	M 2.13	
Cu	Grange-over-Sands		14/7/80	NHM	2.13	

Bottle-nosed Dolphin *Tursiops truncatus*

Regular visitor

This is the most frequently seen dolphin off North-west England with records in most years and a peak in August and September. There is a resident population in the Irish Sea in Cardigan Bay but population trends are not well known. A decline in West Wales in the 1950s and 1960s seemed to accompany an increase off North-west England. Such local changes in numbers make overall population changes difficult to detect with confidence. Stomachs of this species, from North Wales, examined by Moore (1889) contained garfish, gadoids and conger eel. Morris *et al* (1989) suggest that dolphins in Cardigan Bay feed mainly on pelagic fish such as mackerel, herring, bass and mullet. Recent regular observations off southern Scotland have picked up significant northward movements in January (N. Hammond pers. comm.) Table 3 lists strandings of this species.

Table 3. Bottle-nosed Dolphin Strandings

County	Locality	Grid ref.	Date	Recorder/Source	Sex L(m)	Comments
L	Fleetwood (2.5 miles N.W. of Wyre Light)		8/8/17	NHM/Harmer/ NML	3.25	
Cu	Walney Island	SD3-6-	15/8/17	Naturalist1917/ NML		
M	Leasowe		20/8/18	Dr. J.A. Chubb/ T.A. Coward	2.57	
Cu	Barrow (opp. N. point of Walney Island)		23/5/24	NHM	F 3.12	contained a foetus
Cu	Barrow (opp. N. point of Walney Island)		23/5/24	NHM	3.02	
M	Birkdale	SD3214	23/9/42	Hardy/NML	2.67	
Cu	Walney Island		13/8/52	NHM	M 1.83	
M	Hilbre Island		15/9/53	NHM	F 2.57	
M	Seaforth	SD3297	15/6/54	E. Hardy/NML/ Liverpool Daily		

County	Locality	Grid ref.	Date	Recorder/Source	Sex	L(m)	Comments
				Post 21/6/54			
L	Heysham		7/6/56	NHM		3.66	
L	Silverdale	SD4674	9/9/56	N.F. Ellison/NML	F	2.18	
L	Silverdale, Jenny Brown's Point		6/1/57	M. Jones			corpse washed up
C	Parkgate		27.1.57	H. Shorrock		2.65	
Cu	Walney Island, Hawes Point		24/3/57	NHM		3.66	
Cu	Walney Island		22/11/57	NHM		1.27	decayed
Cu	Walney island		22/11/57	NHM		1.55	decayed
M	West Kirby		31/1/58	NHM/N.F. Ellison	M	3.35	decayed
L	West Arnside		29/6/61	NHM	M	3.2	
L	Ainsdale		12/9/61	NHM		3.38	
Cu	Newbiggin		29/3/63	NHM			
M	Ainsdale beach		9/8/63	NHM		3.28	
M	Southport		6/10/63	NHM		3.35	
L	Heysham		29/7/64	NHM		1.63	
M	Ainsdale beach		8/9/64	NHM		1.47	
L	Morecambe Bay (1 mile N. of Hest Bank)		22/8/65	NHM	M	3.58	
L	Middleton Sands		31/8/65	NHM		1.4	
L	Morecambe		22/9/65	NHM	F	3.28	
M	Formby	SD2907	26/10/67	NHM		3.35	
L	Heysham	SD4161	14/4/69	NHM		2.36	

White-beaked Dolphin *Lagenorhynchus albirostris*

3 records

On 29 December 1862 one was discovered stranded at Little Hilbre by the Inspector of Buoys, Mr. Barnett, who had noticed others a few days previously. An attempt to move and save it was unsuccessful as it died eight hours later. It was a male and identification from the skull was confirmed by Dr. Gray at the British Museum. The length from snout to cleft of tail was 2.7m and a full description and measurements are given in Moore (1889). A 2.8m specimen was washed up dead on the shore at St. Annes-on-Sea, Lancs. (SD3129) on 23 October 1911. It was reported by Dr. H.J. Moon, whose description suggests it was "almost certainly" of this species (Coward). More recently a 2.55m. specimen in good condition was found at West Kirby, Merseyside on 28 June 1989 (NHM).

Killer Whale *Orcinus orca*

3 records

Hammond and Lockyer (1988) report this species as occasional in the Irish Sea, mostly in more southerly areas. The earliest record was on 22 March 1876 when a live 8m. cetacean was captured by a couple of Parkgate fishermen at West Kirby, Merseyside. “It still retained some strength, lashing its tail in an alarming manner, and with sufficient violence to break in pieces the iron anchor belonging to the boat”. It was despatched and cut up to extract the oil. A flipper of this male was procured for Liverpool Museum confirming its identification but the bones were lost during the process of maceration (Moore, 1889).

Dr. F.W. Hogarth reported that this species “is seen fairly regularly at the mouth of the Lune” (Ellison, 1959) but the only record to substantiate this statement was an undated report of a fisherman describing a 10m. cetacean with “piebald” colouration jumping 1.5m. out of the water. In 2001 a dead 5.9m. specimen was washed up on a sandbank in the River Mersey near Speke. It was emaciated and in poor condition and probably died due to old age.

Risso’s Dolphin *Grampus griseus*

8 records

One 3.5m. long was found dead at Widnes on 10 December 1939. Dr. F.W. Hogarth watched three from the end of Morecambe Central Pier in 1946. There are three reliable records from the north end of Hilbre Island: five on 14 April 1967 (Prof. J.D. Craggs *et al*), three Risso’s with one Common Dolphin on 21 April 1974 (J.C. Gittens *et al*) attracted by a surface shoal of fish, and one with a Bottle-nosed Dolphin on 3 May 1975 (J.C. Gittens *et al*).

More recently this species was reported off Blackpool with five on 28 July 1985, six on 9 August 1987 and three on 23 June 1991 (M. Jones pers. comm.).

Long-finned Pilot Whale *Globicephala melas*

Two records

Northridge (1990) describes this species as ‘not common in the Irish Sea’ but numbers have increased in the North East Atlantic over recent decades (Evans,1987).

Both records were in 1988. One was found dead half a mile offshore at Hoylake, Merseyside on 5 June. It was a 4.5m long female and an autopsy was carried out by Dr John Baker. On 10 August, six were watched entering the Mersey on the ebbing tide. They were feeding avidly and were watched for over 30 minutes down to 200m. They reached New Brighton before heading back out to sea, although came close to stranding on Mockbeggar Wharf/East Hoyle Bank (S. White *et al*).

Harbour Porpoise *Phocoena phocoena*

Common resident

The Harbour Porpoise is the smallest and most frequently seen cetacean along the coast of North-west England. There are regular records each year and in all months. They rarely exceed 2 metres in length and breed from May to August, with newly-born young being found dead along our coastline. There are no estimates of population size in the Irish Sea and no distinct peak in sightings. Northridge (1990) reports a peak in March but records suggest a later peak in the period June to October, more typical of other British coasts. Coward (1910) includes a shrimper’s

account of a "great shoal extending for fully three miles off the NW lightship" and local fishermen reported "dozens" or "hundreds" just offshore to Ellison (1959). There is no doubt that current numbers must be well down on those for the early twentieth century. Occasional individuals used to stray up rivers, to Latchford Weir, Warrington and Eastham on the Mersey and Chester on the Dee. Strandings are too numerous to list but may be analysed in a later paper and, of these, a number have had autopsies carried out.

Bottle-nosed Whale *Hyperoodon ampullatus*

Scarce visitor

Coward (1910) gives details of ten strandings in the Mersey and Dee prior to 1910. Later strandings are listed in Table 4.

Table 4. Bottle-nosed Whale Strandings (from 1910)

County	Locality	Grid ref.	Date	Recorder/Source	Sex L(m)	Comments
M	Dee Estuary		10/12	T. Coward		
M	Ainsdale	SD2-1-	23/10/42	N.F.Ellison/ NML/LCFC Rep.No.26	M 7	dead; may have collided with ship; skeleton in Liverpool Museum
Cu	Newbiggin		18/10/46	NHM	F 7.62	
C	Runcorn		15/9/53	NHM	6.4	stranding; shot
C	Runcorn		15/9/53	NHM	7.77	stranding; shot

There are no published live sightings, although December 1976 and December 2002 have seen marked southerly movements off southern Scotland. July 2003 saw another movement, well spread out and all moving north, including singles off Blackpool and just into Morecambe Bay Therefore, the lack of records may be down to lack of observer coverage but it is anticipated that there will be further records in our waters in the near future. Additional unpublished records are held by the Solway Shark Watch and Sea Mammal Survey. (N. Hammond pers. comm.).

Dolphin sp. *Delphinus/Tursiops/Lagenorhynchus*

3 records

One live stranded at Crosby Beach (SJ312986) on 21 March 1987. It was 1.52m. long. One dead was reported at Haverigg, Cumbria on 24 September 1988. It was 1.83m. long. Another was at Bootle on 3 February 1990. This was a ten year old 2.29m. female.

Toothed Whale sp. *Odontocete sp.*

5 records

Unidentified toothed whales are listed in Table 5.

Table 5. Unidentified Odontoceti Strandings

County	Locality	Grid ref.	Date	Recorder/Source	Sex L(M)	Comments
M	Blundellsands		13/9/13	NHM	1.07	
Cu	Walney Island		13/2/14	NHM	1.27	

County	Locality	Grid ref.	Date	Recorder/Source	Sex L(M)	Comments
L	Heysham	SD4161	31/8/67	NHM	2.13	
M	Bootle, Gutterby		23/10/81	NHM	6.8	
M	Liverpool area	SJ6079	25/10/81	NHM	0.76	

Cetacean sp.

Two records

There are two further records of unidentified stranded cetaceans: one at Hightown on the Alt Estuary on 22 December 1913 (1.52m) and one at Formby Point on 16 July 1964 (2.44m).

Conclusion

The conservation of cetaceans presents some extremely intractable problems. Our current level of knowledge of the status and abundance of cetaceans around our coast, and indeed the threats they face, makes it very difficult to develop conservation strategies (Papastavrou, 1991). A danger is that paucity of management information might be used as an excuse to do nothing. A further complication is that cetaceans migrate, making their conservation an international issue.

What is needed is more systematic collecting of data by a network of observers, along the coast and at sea, using modern electronic communication to help monitor and track movements. Such a network is being established in the region (N. Hammond pers. comm.) but any casual records of live animals or strandings are still very valuable to help build up the big picture.

The lack of reliable information on population status of cetaceans and the effects of pollution, environmental changes or fisheries on marine mammals in general may well serve to obscure other important human impacts on marine mammals in the Irish Sea. Concern has been expressed at the high PCB levels in the blubber of Harbour Porpoises and Bottle-nosed Dolphins. However, at present the significance of such a find, even on reproduction, is unclear. Perhaps the greatest conservation problem with regard to cetaceans in the Irish Sea is our ignorance.

Accurate identification at sea is not easy but most contact comes through strandings. In the fourteenth century whales were declared ‘fishes royal’ and this gave the sovereign rights to all cetaceans stranded or caught around British coasts. Strandings were initially required to be reported to the Crown but from 1913 this duty was taken over by the British Museum, now the Natural History Museum, (Sheldrick, 1976; Corbet & Southern, 1977).

What to do if you see live or dead cetaceans

Live Stranding:

Rescue	British Divers’ Marine Life Rescue hotline on:	01825 765 546
	R.S.P.C.A. on:	08705 555 999
		(both 24 hours a day)

Dead Stranding:

National	Natural History Museum on:	020 7942 5155
Lancashire	Fleetwood Museum on:	01253 876621

Merseyside/Cheshire		
	Liverpool Museum on:	0151 478 4399
Post mortems	Institute of Zoology on:	020 7449 6691

Live sighting:

Lancs.	Fleetwood Museum on:	01253 876621
Merseyside	Liverpool Museum on:	0151 478 4399
Cheshire:	RECORD on:	01244 383569
Solway Shark Watch & Sea Mammal Survey on:		016973 20440

Key to acronyms:

NHM = Natural History Museum, London

NML = National Museums, Liverpool

LCFC = Lancs. & Cheshire Fauna Committee

RSPCA = Royal Society for the Prevention of Cruelty to Animals

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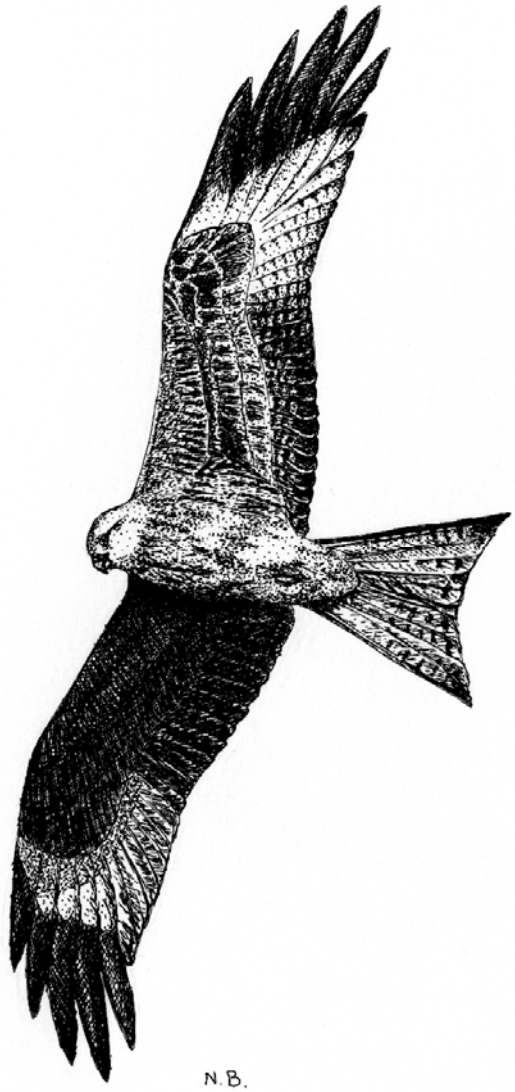
Early records of Polecat, Red Kites and Grass Snakes from North Merseyside

Malcolm E. Greenhalgh

It has long been assumed that the Polecat *Mustela putorius*, like the Red Kite *Milvus milvus,* was once common and widespread throughout our region but that both were exterminated by the mid 18th century because of persecution. However, whilst Mitchell (1887) gives a few records of Kite from the uplands of Lancashire, there are no similar records of Polecat in Ellison (1959) though he does list the species for Lancashire and Cheshire. More recently, Cross (2001) did not include Polecat in his list of mammals of Lancashire and North Merseyside, ascribing any possible records to Polecat Ferrets *Mustela furo*. In an attempt to find a good dated record for Polecat, I have been searching possible sources from the 16th-18th centuries. So far, I have found only one, together with several records of Red Kites and Grass Snakes *Natrix natrix* from South Lancashire/North Merseyside.



The Diaries of Nicholas Blundell (reprinted by The Record Society of Lancashire & Cheshire) cover the years 1712-1728 and include some notes from 1711. Most of the records come from the Blundell's estates at Crosby and Ince Blundell in what is now North Merseyside. From 29 April 1711, Blundell reported: 'John Bannister took a Fulmert with his hands'. (Fulmert = Foulmart = Polecat). This, I believe, gives a good dated record of the species from our region. I think it likely that the only reason this Polecat is included in the diary is because it was caught by hand and not killed in a trap or by shooting.

It is a great pity that Blundell gave only a little information on this and other now very rare or extinct species on his estates. For instance, on 15 December 1712, he reported: 'I had a cow cast its Calf, I Lay'd it to shoot Kits at the Long Garden Wall'; while on 21 January 1713 he noted that: 'Betty Swift sent me a Mare to lay to shoot Kits…'.

Kites must have been common early in the 18th century for Blundell to have laid out the corpses of large animals to attract them so that he could shoot them. Yet, he records only one being shot. The day after he put out Betty Swift's dead mare: 'Robert Thompson shot a Kite through the Long Garden Wall'.

Today Grass Snakes are probably extinct in south Lancashire and North Merseyside. Early in the 18th century, they appear to have been abundant. However, a note is needed before quoting instances from the Blundell diary. In those days, snakes were vipers, adders, or long worms. The fact that Blundell's 'adders' were Grass Snakes is clear from their size and where they were often caught:

9 July 1725: 'Thomas Newton killed an Adder which was fully 3 Foot & three Inshes long'.

Adders *Vipera berus* never grow to that length; Grass Snakes do.

22 June 1721: 'Some of my Servants and Thomas Syers, etc: Killed 50 Adders most of them in some old Hay as was lately put out of the Hay-Loft and lay behind the Stables, several of them were of the largest Size'. Grass Snakes are famous for entering fermenting compost and muck heaps, seeking warm places to lay their eggs. Adders never do this, being viviparous.

Blundell's only other reference to Grass Snakes comes from 14 June 1712: 'Robert Tompson (he who killed the Kite?) killed about 15 Adders or Long Worms'.

In 1952, The Record Society of Lancashire & Cheshire published the Prescot Churchwarden's Accounts 1523-1607 and these include bounties paid for the heads of 'vermin'.

In 1591 the Churchwardens: 'Pay'd John Olyverson for ix (nine) crowe heades and ij (two) kytes and one pye (Magpie) head, vjd (sixpence). Payd James Taylor ix (nine) crowe heades, a pye hed and a kyte head and a hedghodg, vijd (sevenpence)'.

In 1594 the record shows how Hedgehogs *Erinaceus europaeus* were then considered vermin with a bounty up to twice that of the Kite: 'Item, paid to Mathew Stemson for vij (seven) urchins (Hedgehogs), xx (twenty) crowe heades, iij (three) mouldes (Moles), iij malpes (Bullfinch), ijs.id (two shillings and a penny). Item, paid to Mathew Ellum for vij urchins, xiiijd (fourteen pence). Item, paid to Peter Suttons boy for iiij mouldes and fowre crowe heades, iijd. Item, paid to Edmund Tunstall for v urchins, ixd. Item, paid to William Johnson for iij urchin heades, vd. Item, paid to Ellize Gleast for ix urchin heades, xvjd (sixteen pence)…… Item, paid to George Smith for j kyte head, jd'.

It is clear now from contemporary records that the Red Kite was once as common here as has been assumed but without the records. My search for these earlier records continues.

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(Editorial Note: according to Langley & Yalden (1977) the Polecat was still present in all British counties in 1850. It was still present in Lancashire in 1880, though these records may well have referred to more northerly parts of our area., but by 1915 the Polecat was extinct throughout England, except to the extreme north-west of Lakeland.

According to Brown, (1976) Kites were common to the end of 18th century but eradicated from England by the 1870s. It should also be born in mind that both the Buzzard and Kestrel were at times known as Kite in Ireland and Shropshire respectively (Greenoak 1979), and it has been brought to my attention that Kit has also been a name used for Buzzard.

Despite the likelihood that Kites were common in our area in earlier times, it is extremely valuable to have confirmed, dated early records as given here. Any such records will be gratefully received for publication in the next General Report.

Though Smith (1950) gave no records of Grass Snake for Vice-Counties 59 & 60 (Lancashire and North Merseyside), Beebee & Griffiths (2000) map pre-1970 records for N.Merseyside, as well as East Lancashire and Over Wyre.

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Marine Turtles in Lancashire, Merseyside and Cheshire

S.J.Hayhow

It is well known that marine turtles travel great distances but their navigation feats and movements are poorly understood despite the great threats they are under on their breeding grounds. This paper summarises all known marine turtle records for Lancashire and Cheshire with an encouragement to seawatchers and marine observers to look out for and report any sightings.

Loggerhead Turtle *Caretta caretta L.*

3 records

A 217lbs. male was found alive in the Lune Estuary in October 1927. This was the first ever record for Britain. The specimen is now in the Natural History Museum (Coward, 1927; Ellison, 1959).

A live specimen in the Hilbre Swash on 19th May 1960 was basking on the surface. This was the first record for Cheshire (Ellison, 1948-53).

The only other record to date is a 38cm specimen found alive at Knott End in November 2001. It was rescued by staff from Blackpool Sea Life Centre, named 'Shelley', and rehabilitated at Weymouth Sea Life Centre for release back to the wild (L. Eatough, L. Robertson pers. comm.). A report and photograph were published in the Blackpool Evening Gazette on 1st December 2001. A number of other turtles, all reported as Loggerheads, although Green cannot be eliminated with most field records, turned up in the Irish Sea at this time (N. Hammond pers. comm.).

Leatherback Turtle *Dermochelys coriacea (L.)*

4 records (in coastal waters)

On 26th September 1948 the first local record was made by skipper W.H. Jones and the crew of the fishing boat 'Ivy' of Hoylake, although they were unsure of the identity. That evening they described it to the chairman of the local R.N.L.I. and made sketches of its appearance. These were sent to the Natural History Museum by N.F. Ellison and its identification confirmed (Ellison, 1948-53).

A badly decomposed specimen, but with an intact carapace, was washed up at Birkdale in August 1994 (P. Rooney *et al*) and was buried at Altcar Rifle Ranges. On 3rd October 1997 a partially decomposed Leatherback was reported to the author at Fleetwood Museum. It was measured at 180cm. The carapace was cast and various skeletal remains, including the skull and some flipper bones, were preserved and are now in Fleetwood Museum.

Another, this time live, was reported in Lune Deep, the channel between Fleetwood and Barrow on 2nd August 2003 (N. Hammond, pers. comm.). Sadly, what was presumably this individual, was washed up dead, apparently damaged by a propeller, at Middleton Sands in mid-August (S. Hargreaves, J. Carter pers. comm.). A photo was published in the Lancaster Visitor but the carcass was soon washed away.

Although rare, this species may well be turning up more regularly than we realise in the Irish Sea and perhaps annually. One had been caught dead, bleeding from injuries, in fishing nets 8 miles west of Selker Buoy (54° 15´N, 3° 44´W). (S. Newsham pers. comm.). Two were seen by a survey vessel in the Irish Sea, between the Isle of Man and Sellafield, in late summer 1997 (C. McCarthy pers. comm.) and more recently one was seen swimming around rig DP6 in the Morecambe Bay gas field on 6th September 2002 (P. Marsh, pers. comm.).

Green Turtle *Chelonia mydas*

1 record

On Christmas Day 2001 a dead turtle was found at Knott End (SD357493) by Mr T. McNally. It measured 47cm and was reported to the Natural History Museum. They asked the author to accept it and to keep it frozen until it could be collected for autopsy. This confirmed the identification as Green Turtle, only the sixth ever stranded in British waters since records began in 1748. Sadly, the autopsy also showed it had ingested plastic and rubber from a balloon (R. Deaville pers. comm.).

Turtles face many threats but balloon races, resulting in balloons landing in the sea, are of particular concern because larger marine animals may eat them in mistake for jellyfish. The carapace is preserved in Fleetwood Museum.

What to do if you see live or dead strandings

Live sightings and strandings should be reported to the British Marine Turtle Stranding Network. This is an informal network comprising Marine Environmental Monitoring, Marine Turtle Research Group (University of Exeter), Natural History Museum, SAC Veterinary Science Division and Scottish National Heritage.

The contact is currently: Rod Penrose Tel: 01348 875000

e-mail: rodpenrose@cix.co.uk

and locally to the author at Fleetwood Museum Tel: 01253 876621

e-mail: simon.hayhow@mus.lancscc.gov.uk

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The Fylde Natterjack Toad colony

John Buckley, Maurice Jones & Frank Walsh

The Natterjack Toad *Bufo calamita* is a relatively uncommon species in Britain whose range declined markedly during the 20th century. At present its main populations are found in NW England and SW Scotland, where it is found on coastal dune systems, but it is also on heathland and the upper margins of coastal salt marshes (Beebee & Buckley 2001). Despite the importance of the N. Merseyside and Cumbrian coast for breeding Natterjack, there is no record of it occurring naturally on the once extensive dunes of the Fylde. However, it is possible that it did so undetected, prior to the extensive housing developments built in the late 19th and early 20th century, especially in the St Annes area. It was only in the 1930s that J. R. Charnley, a well-known local naturalist, reported the occurrence of a breeding population of Natterjacks on the Fylde. He found a colony on the upper salt marsh at Cockerham, a habitat less frequently used than sand dunes in the North West. Unfortunately, we have been unable to locate the journal in which the report was made, and it did not reach the publications of the Lancashire & Cheshire Fauna Committee (now Society). It seems that Smith (1951) was also unaware of this report, though he did map a colony site for the period 1925-1950 in the area of Carnforth, which seems to have been an error. This may be a misplaced reference to Charnley's record.

In 1962 Maurice Jones found a dead Natterjack at Cockerham and later what he thought was an unknown colony. The circumstances of this discovery are best given in Maurice's own words. 'On the 30 September 1962 I was bird-watching on the coast road which at the time crossed the salt marshes south of the River Cocker at Cockerham. My companion John Morgan and I were very surprised when we came across a dead Natterjack Toad, sadly run over by traffic on the road. The nearest colonies known to me at the time were at Ainsdale and near Barrow.

On the evening of the 22 May 1969 David Hall and I visited Cockerham Moss. Having heard at least three Grasshopper Warblers singing at dusk, we moved on to the coast road at 22.30 hours. On parking, we immediately heard distant calling of the toads out on the marsh. In three pools we heard 6, 2 and a single toad calling and decided to return in daylight. This we did on 29 May, arriving at 20.00 hours. Natterjacks were calling when we arrived and later we heard many calling in response to taped recordings of their own calls. We surveyed four larger and several very small pools amongst the zone of Sea Rush *Juncus maritimus*.

The following year disaster struck the colony. The farmer who owned the land suffered a fire in his Dutch barn and decided that the largest pool, approximately 18m by 3m, with a depth of 0.5m, was the ideal site to dump what remained of it! A year later (1971), after obtaining permission to clear out the pool from the farmer, a small group of us, under the auspices of the Lancashire Trust for Nature Conservation, set to work.. Two lorry loads of charred timbers, ash, corrugated sheets and rolls of barbed wire were removed to a site at Glasson Dock. Prior to this clearance work we had seen three Natterjacks and heard six others calling on the 7 May 1971.

After this period I made only two visits. On the 15 April 1979 I heard two Natterjacks calling and on 7 August 1983 Richard Hall and I located 10 young toads in the *Juncus* marsh.'

The Nature Conservancy Council was informed of the discovery of this colony, which was on a pre-existing SSSI, and the discovery was also briefly reported by Shorrock (1973).

The Natterjack colony at Cockerham was well monitored before and after the building of a new sea wall, which presumably was the major cause of its extinction. Maximum counts of about

40 adults were made in the years prior to the building of the sea wall in 1981, thereafter the numbers declined. The process of extinction was effectively complete by 1988 when the last male was seen on site, although females lingered until 1990.

Tidal inundation was stopped by the construction of the sea wall and the land adjacent to the SSSI was then levelled and drained for farming, though the breeding pools remained relatively unchanged. Inundation by spring high tides is recognized as being important on upper saltmarsh Natterjack sites because it kills off predators in the pools and then the water in the ponds has time to become fresh again before the breeding season. Experimental inundation of the pools with seawater was tried for two years but it did not help the colony to survive.

In the late 1990s plans to reintroduce the Natterjack Toad to Cockerham began to take shape between English Nature, the Environment Agency and The Herpetological Conservation Trust. As it was not possible to restore tidal inundation to the site, it was decided to try to establish a colony based on a series of shallow, ephemeral ponds. Habitat improvement work, funded by the Environment Agency prior to the start of the reintroduction programme, included the construction and fencing of two new ponds, the improving of existing ponds, rush cutting and gorse clearance.

Experts agree that the Cockerham Natterjacks were probably more closely related to Cumbrian than Sefton coast animals, but it would still be good to test the DNA of any preserved specimens, should they exist. The obvious choice of donor site was Sandscale Haws, which supports a thriving colony, and fortunately the National Trust at Sandscale was pleased to help with the three year translocation project, which was licenced by English Nature.

The first translocation of spawn and tadpoles took place under licence at the end of April 2002. They were released into the shallows of the two new ponds and then the ponds were netted to keep off bird predators. Although the main emergence was missed, some toadlets were seen in July and August. It seems likely that at least a few hundred toadlets emerged from the pond and dispersed.

Early in 2003 the pools were pumped out to remove predators and allowed to refill naturally. A translocation of tadpoles was made to the two pools on 11 June, followed by more thorough monitoring. Again there was successful metamorphosis from both pools. The maximum daily count of toadlets was 25 and as they emerged and dispersed over several weeks it is likely that the full total was in the hundreds.

In 2004 the final translocation will be made and then it will be a case of waiting until animals from earlier years become mature. If all has gone well, males from 2002 could become mature in 2004 and females in 2005.

In 1967, following the scheduling for building of land near Ainsdale Lido, a well known area for Natterjacks, some of this species were taken and released on the Lytham St. Annes Local Nature Reserve. On 22 June 25 toads were released by P.Carah, while independently a further 57 specimens were released on 3 September by M. Jones (Ellison 1969). Subsequently Shorrock (1973) reported that no Natterjacks were recorded at the introduction site in 1968, but that in 1969 two males were heard calling by Arthur Watson, the reserve warden, and M. Jones. In 1970 three males were heard and one string of spawn located. This latter was taken by children but retrieved and replaced in the pool by Mr Watson. Unfortunately, there was no evidence of hatching and no further reports of Natterjacks were forthcoming.

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The Freshwater Fishes of Lancashire, Merseyside & Cheshire

Malcolm E. Greenhalgh

Introduction

Two reports by N.F. Ellison and J.C. Chubb (Ellison & Chubb 1962, 1963) are the foundation on which any later study of the fishes of the old counties of Lancashire and Cheshire must be based. Here, this foundation is referred to as 'Ellison & Chubb'.

The presence of a thriving community of freshwater fish species indicates a healthy freshwater environment. When Ellison & Chubb produced their reports the water condition of much of the Mersey system, the River Douglas and its main tributary the Yarrow, and the River Calder that flows into the Ribble below Whalley was very poor. In the last decades of the twentieth century a political will, driven by a more aware public plus angling and wildlife lobbies, put money into cleaning up decades of pollution. So today, at the beginning of the twenty-first century, it is possible to paint a far rosier picture of the region's freshwater fish fauna. It is to be hoped that, in another forty years or so, someone else will be able to describe further improvements.

Since Ellison & Chubb wrote the county boundaries were vandalised by politicians with no feeling for local history or natural history. This account describes the freshwater fish living in the 'old' Lancashire and Cheshire counties save for that part of Lancashire that lay 'across the sands' and that is now, correctly from a zoogeographical view, part of Cumbria. It thus includes present-day Lancashire, Cheshire, Merseyside and Greater Manchester.

I am grateful to Steve Whittam, Andy Blezard and the freshwater fishery staff of the Environment Agency for providing many records and reading through a first draft. Also to Charlie Liggett and Chris Tomlinson (Martin Mere WWT), Dominic Rigby (Mere Sands Wood LWT Reserve), Sue Bannister (Longton Brickcroft), the wardens of the Wigan and Pennington Flashes, John Wilson (Leighton Moss), Ron Broughton, Peter Greenhalgh, Geoff Haslam, Phil Wilson and members of Bowland GFA and Prince Albert AS who provided records. I would like also to thank the multitude of anglers throughout the region who showed me the contents of their keep-nets.

The origins of the Freshwater Fish of Lancashire and Cheshire

At the height of the last Ice Age it is almost certain that there were no fish living fish living in what is now our region. Following the great melt some 10,000 years ago, the rivers of eastern and south-eastern England were connected directly to rivers in mainland Europe until the time that Britain became an island, somewhere between 7000 and 9500 years ago (Yalden 1999). These eastern and southern rivers were thus colonised by freshwater fish swimming from the mainland. However, our rivers never had a connection with the post-glacial rivers of mainland Europe, and the only route available to colonising fish was via the sea. This route was open only to species capable of living in full strength seawater:

Category One: Catadromous species that enter freshwater to feed

Eel, sea-bass, thick-lipped mullet, common goby, flounder.

Category Two : Anadromous species that feed in the sea but spawn in freshwater

Sea lamprey, river lamprey (lampern), sturgeon, twaite shad, allis shad, Atlantic salmon, brown (sea) trout, powan, smelt, three-spined stickleback.

Category Three : Species that might have been able to tolerate living in seawater

Brook lamprey (some suggest that this is merely a freshwater form of the sea-going river lamprey), nine-spined stickleback (has been found in brackish water), miller's thumb (arctic seas have similar 'sculpins').

Other species now found in the region would be unable to live in and colonise from the sea. Most, if not all, of these species would have reached here aided by *Homo sapiens*.

Category Four : Species which we know were definitely introduced very recently

Sterlet, rainbow trout, speckled char, grass carp, ide, bitterling, goldfish, barbel, wels.

Category Five : Species that were almost certainly introduced but for which we have as yet no details as far as our region is concerned

Pike, grayling, carp, crucian carp, chub, dace, roach, rudd, minnow, bream, silver bream, gudgeon, tench, stone loach, perch, ruffe.

It has been suggested that some of the species in Category Five might have reached our region through 'river capture' at the end of the last Ice Age (this theory lacks evidence) or by eggs being transported on the feet of wildfowl (this may be possible in pike and perch). However, in mediaeval times abbeys and priories in the region were built by rivers and, because fish were not considered meat and could therefore be consumed on the over 130 'days of obligation' each year, fish were eagerly sought. The monks at Whalley Abbey even constructed an immense complex fish-farm on the Calder floodplain where they could rear fish (Greenhalgh, in prep) . They were also adept at transporting eggs and perhaps fry of some species, for instance carp, bream and tench. Monks took pike to Ireland (Buller 1971); almost certainly they brought pike to waters adjacent to the many religious houses in our region.

It is tempting for angling organisations and aquarists to introduce new exotic species: the sterlet, (a freshwater sturgeon) and wels (a giant carnivorous catfish) were introduced within the last decade. However, just as the introduction of foreign mammals, such as the grey squirrel *Sciurus carolinensis* and American mink *Mustella vison*, has resulted in ecological damage, so too might the introduction of other non-native fish species to the region, of even the transfer within the region or a fish from one water where it occurs to another where it does not. No introduction or transfer should be considered without consultation with the Environment Agency (EA).

The Species List

The order and nomenclature follows Greenhalgh (1999, 2001).

Sea Lamprey *Petromyzon marinus*

Ellison & Chubb recorded captures of this anadromous species from Morecambe Bay and Parkgate (Wirral) and note the Lancashire River Board's Report for 1957-8 detecting 'large numbers in many of the rivers....particularly in the Lune.' Pollution exterminated the sea lamprey

as a breeding species from the Mersey. In Lancashire it has been recorded spawning in the Ribble between Walton-le-Dale and Samlesbury (2000-2002) and below Hodderfoot (A. Blezard), and I caught two in the Lune above Skerton Bridge in July 1996. Recorded from the Wyre below Garstang in June 1970. I have no record from the Cheshire Dee.

Lampern (River Lamprey) *Lampetra fluviatilis*

Ellison & Chubb give two 20th century records from the Mersey at Warrington on 2 October 1909 and 7 December 1909 (three); otherwise they describe it as 'abundant in the unpolluted rivers of our region and there are numerous records from the Dee and elsewhere'. Like all lampreys, this species is easily overlooked. I have recent records from the Ribble (corpses at Mitton in 1981 and from Balderstone in 1995), from the Wyre at Garstang (2000) and in 2000-2001 from the Mersey at Woolston (EA).

Brook Lamprey *Lampetra planeri*

This small slender species, which is resident in freshwater the year round, is easily overlooked because it spends most of its life buried in silty gravel in the riverbed. Chubb & Ellison stated that it occurs in the following Cheshire rivers: Dee, Bollin, Dane, Aldersey Brook, Baguley Brook, Peover Eye, 'and other small streams'. To these I would add the Dane at Congleton and Swettenham. I have found it in the following Lancashire rivers: the Hodder at Bashall Eaves and Slaidburn, the Ribble at Grindleton, the Wyre below Abbeystead and the Lune below Kirkby Lonsdale. The Environment Agency has records from the Douglas at Squirrel Lane.

Sturgeon *Acipenser sturio*

Ellison & Chubb gave the following records from rivers and inshore waters of this increasingly rare vagrant: 1700 at Warrington; 1851 below Warrington; 1873 Morecambe Bay; 1891 River Mersey; 17 June 1891, River Dee at Queensferry; 1899 off Hilbre; 1902, two from the Dee; 1904, Morecambe; August 1908, Saltney, near Chester; 20 July 1914, Southport; August 1958, Morecambe lightship; July 1959, off Morecambe. I have unearthed one other record, of a fish netted from the Lune at Glasson Dock in 1903 (photograph in Port of Lancaster Smoke House, November 2002).

Sterlet *Acipenser ruthenus*

This is an eastern European species of sturgeon that spends its entire life in freshwater. Sterlets are sometimes kept by aquarists until they grow too large to accommodate in tanks or garden ponds. Some have recently been introduced into ponds in the Fylde. DEFRA regulations stipulate that a sterlet caught in Britain must be removed from the water.

Twaite Shad *Alosa fallax*

An anadromous species that has never been recorded in the freshwater of rivers in our region, despite Ellison & Chubb quoting it being caught 'sometimes in the Dee'. It has been reported very rarely from inshore waters (e.g. four off Formby on 6 June 1863) but there are no dated 20th or 21st century records.

Allis Shad *Alosa alosa*

I examined a specimen netted from the Ribble below Freckleton Naze in June 1976 by R. Ball. It had the characteristic single dark spot to the rear of the gill cover and a scale count down the side

of 81, beyond the range of the twaite shad's 58-70. A scarce species throughout the British Isles, though it is easily overlooked.

Eel *Anguilla anguilla*

A widespread and common species in rivers where the lower reaches are not excessively polluted. In recent years it has recolonised the Douglas and Yarrow following clean-up and now occurs in the Mersey system at Whittle Brook (Warrington), Sutton Brook, and the Weaver and Bollin systems (Cheshire). Females will travel overland to ponds and reservoirs and there grow to large size (e.g. two at Barnsfold Water weighed 3 and 4 1/2 kg in July 1989).

Pike *Esox lucius*

This species can be found in canals, mossland drains, reservoirs, meres and some rivers (e.g. deep pools of the Dee, Ribble and Lune). It has been reported from brackish water in the Lune estuary. Ellison & Chubb noted a 12" (30cm) fish from the docks at Manchester on 30 April 1968 which, they stated, was 'the first from the Manchester Ship Canal since opening in 1894'. Pike now occur in the Irwell between Bolton and Salford (P. Wilson). Interestingly, there is no record from Mere Sands Wood LWT Reserve (D. Rigby), suggesting that human introduction is essential for its presence in waters in the region.

Atlantic Salmon *Salmo salar*

Well-established populations occur in the Dee (2001 declared rod catch 616, though most caught upstream of the Welsh border), Lune and its tributaries (2001 catch 566), Ribble and Hodder (2001 catch 349), and Wyre (2001 catch 11). Much work is being carried out by angling conservation bodies and the Environment Agency into improving these populations. The formerly polluted Calder (Ribble system) now has a small run and in 2002 salmon were prospecting the cleaned Douglas/Yarrow system (Lancashire).

Early in the 19th century the Mersey was still a noted salmon river but by the 1880s the population had collapsed. One was found jammed in a lock of the Ship Canal in 1894, singletons were taken at Warrington in June 1908 and again on 9 April 1912. Ellison & Chubb also noted that in 1926 'a number of big salmon were found dead and dying on a sandbank near Fiddler's Ferry, Warrington'. Even when the river was at its most polluted the occasional salmon nosed its way into the Mersey: in 1962 one was caught in Gladstone Dock on 28 February and another in Brunswick Dock on 3 April. With the cleaning up of the Mersey Basin, salmon are attempting to return: three were caught in a trap at Warrington in 2001, 26 in 2002 (EA).

Brown Trout/Sea Trout *Salmo trutta*

A sea trout is simply a brown trout that has gone to sea to feed and grow before returning to spawn in the river. The following rivers have stocks of sea trout: Lune (second most productive sea trout river in England after the Tyne, with a 2001 declared catch of 1426), Wyre (small population), Ribble and Hodder (2001 catch 499), Dee (2001 catch 283). Sea trout have recolonised the Calder (Ribble) and Yarrow (Douglas) following the cleaning up of pollution.

Non-migratory brown trout occur in the same rivers; also in the Irwell (Greater.Manchester), Dane and other clean tributaries of the Weaver, and in the Bollin and Gowy (Cheshire). Large numbers of brown trout are stocked into some rivers every year. Brown trout occur naturally in some reservoirs, having been trapped there when the dam was built across a stream holding

brown trout (e.g. Stocks, Entwistle). Many reservoirs lacking a wild head of brown trout have been stocked.

Rainbow Trout *Oncorhynchus mykiss*

Native to North America, the rainbow trout has been stocked into many reservoirs, gravel-pits, sand-pits and purpose-built pools for angling and to produce fish for the table. It has, in the past, been introduced to some rivers either deliberately or through fish-farm escapes, but today such introductions are considered a form of pollution. Despite rumours, there is no good evidence that this species has bred in the wild in the region. If it has on occasion done so, there is certainly no viable breeding population and without new introductions every year the species would die out here.

Speckled Char/Brook Trout *Salvelinus fontinalis*

During the 1980s small numbers of this North American char were introduced to some stillwater trout fisheries to add variety to anglers' catches. I examined specimens from Parsonage Reservoir (Lancashire) and Pennine Trout Fishery (Greater Manchester) during the 1980s where it is no longer stocked nor now occurs. At the time of writing (2002) it may not occur in our region, other than in hatcheries.

Powan/Gwyniad *Coregonus lavaretus*

The gwyniad is a whitefish found in Llyn Tegid (Bala Lake) on the course of the Dee. Ellison & Chubb noted that, rarely, some leave the lake when the river is in flood and are caught downstream as far as Chester (e.g. in 1937 at Groves, Chester; 7 March 1954 at Meadows, Chester). I have no recent record.

Grayling *Thymallus thymallus*

In Cheshire, this species occurs in the Dee, Dane, Peover Eye, Bollin, Dean, Gowy and Birkin. During the past ten years its range in these streams has been extended through artificial stocking. Grayling also occur in the Ribble and Hodder (Lancashire). Up to the 1980s their downstream range was Hodderfoot, but since the clean-up of the Calder grayling have entered that tributary and colonised 'Big' Ribble downstream of the confluence. A 19th century attempt to stock grayling into the Wyre failed.

Smelt/Sparling *Osmerus eperlanus*

Although there was a fishery for this small anadromous fish up to the early 19th century in the lower Dee and Mersey (the Rev. Samuel Langley, Rector of Swettenham from 1649-57, described how, in the Mersey at Warrington, 'Ten or even twenty fish are caught at one haul of the seine'), it is now a rare visitor. It may be overlooked for Ellison & Chubb reported a 22.5cm smelt from the Battery Skier (Skear), Morecambe on 12 December 1968 and described the species as 'fairly common' there. In 1977 I found two smelts in the stomach of a sea trout caught in the Pinfold Channel (Ribble Estuary) and in June 2001 examined one washed up on the saltmarsh above Shard Bridge (Wyre Estuary).

Ellison & Chubb (1968) reviewed all the records of a lacustrine population of smelts that occurred in Rostherne Mere, the latest being one found dead on 31 March 1922. None has been found since, despite thorough investigation.

Carp *Cyprinus carpio*

Primarily a fish of eutrophic lowland lakes, in this region the carp occurs in waters as diverse as the pools in the collection at Martin Mere WWT and Wrightington fish ponds (Lancashire), Bosley Reservoir at Macclesfield, Whirley Mere at Henbury and Marbury Mere and in the pools created at Capesthorne and Tatton Halls (Cheshire) and in the Wigan flashes (Gtr. Manchester). In recent years many small ponds have been dug throughout the region to accommodate this very popular anglers' fish. Carp also occur in the Rivers Dane and Weaver, have been stocked into the Ship Canal at Salford Quays, and there is a tiny population in the Ribble around Salmesbury. Carp have also been stocked into many canals including the Bridgewater, Trent & Mersey and Shropshire Union.

Crucian Carp *Carassius carassius*

Ellison & Chubb describe the status of the crucian carp as, 'Almost a stranger to Cheshire waters ... In Lancs. this species is rare ... only in a few waters re-stocked by fishing-clubs'. Today it is far more widespread and, though some of the increase in range is because of recent introductions, some is probably a matter of the species being somewhat overlooked previously. I have found it in small weedy ponds at Blackrod and Wrightington (Lancashire), Abram (Wigan), Haydock (Merseyside) and Marton Heath (Cheshire). It also occurs in some canals: for instance, Leeds & Liverpool near Rufford, Lancaster near Catforth, Sankey Navigation near Newton-le-Willows and Bridgewater near Lymm. It occurs in the pools of Martin Mere WWT and at Mere Sands Wood LWT Reserve.

Goldfish *Carassius auratus*

Although goldfish are occasionally released into the wild, there is no thriving population in the region.

Grass Carp *Ctenopharyngodon idella*

An Asiatic cyprinid, the grass carp has been introduced to several waters since 1980, partly to clear weeds and partly for angling (e.g. Whalley Trout fishery/Pine Trees fishery at Whalley, Lancashire, and the Lancaster Canal). It is unlikely that they will ever breed in the wild here, so the species' continuing existence depends on continued stocking.

Chub *Leuciscus cephalus*

This is a common species in the Gowy, lower Dee, Dane and cleaner Weaver tributaries, Bollin and its tributary the Dean (Cheshire), Ribble and its tributaries (Hodder and, since clean-up, Calder, Lostock, Darwen and Yarrow) and the Wyre downstream of Garstang (Lancashire), and Glaze Brook (Gtr Manchester). It has been stocked in some canals (e.g. Sankey Navigation in the 1980s) and lakes (e.g. Worthington Reservoirs, Lancashire, in the 1970s) though it is unlikely that such introductions will result in self-sustaining breeding populations.

Ide *Leuciscus idus*

This species is not native to the British Isles, and has been introduced from mainland Europe. It is sometimes kept in garden ponds (a variety known as the golden orfe is popular) and has been stocked into several Cheshire stillwaters (EA).

Dace *Leuciscus leuciscus*

A river species with a similar distribution to the chub; it also occurs in the Lune downstream of Forge Weir. In many streams the populations collapsed in the 1980s and in some the species survives only because of stocking by the Environment Agency. The reasons are not clear. Predation by cormorants *Phalacrocorax carbo* and the effects on dace foods and reproductive success of the choking of riverbeds with blanket-weed (Cladophora) through increased phosphate levels in the river water, have been blamed. So too has the cleaning-up of organic pollution in rivers that fed the invertebrates on which dace feed. In 2002 the Environment Agency instigated a restocking and habitat improvement programme to improve stocks of dace and other similar declining species.

Roach *Rutilus rutilus*

One of the most widespread and abundant freshwater fish in the region, occurring in all canals, the middle and lower reaches of all clean rivers, mossland drains, and farm ponds, gravel pits, meres and some reservoirs.

Rudd *Scardinius erythrophthalmus*

This is primarily a stillwater fish, occurring in the Cheshire meres, farm dew-ponds, and fenlands such as Leighton Moss and Hawes Water. It has been stocked more recently into abandoned sandworkings (e.g. Westlow Mere at Congleton and Mere Sands Wood LWT Reserve), and in the pools in the waterfowl garden at Martin Mere WWT. Rudd can also be found in weedier stretches of canals (e.g. Rufford Branch of the Leeds & Liverpool and Tewitfield section of the Lancaster). It also occurs in small numbers in the lowland reaches of several streams such as the Dane and Weaver, and has been reported from the lower Ribble.

Bitterling *Rhodeus sericeus*

This small cyprinid is a native of central Europe and was brought to Britain by aquarists fascinated by its unique breeding behaviour, which depends on the presence of the freshwater mussel *Anodonta cygnea.* The female deposits her relatively few eggs into the mantle cavity of the mussel and there the male fertilises them and they develop. In the 1920s bitterling were released into canals and pools in the St Helens area of south Lancashire and then, in the 1940s and 1950s to small pools on the Wirral. These two areas are still the main centres of bitterling population in Britain. In 2001-2 the Environment Agency also recorded them from the River Wheelock (in the Dane-Weaver system) and in the River Gowy (Cheshire); bitterling also occur at Mere Sands Wood LWT Reserve.

Minnow *Phoxinus phoxinus*

This small fish occurs in all clean rivers in the region including the Dee, Dane, Bollin, Birkin and Gowy, the upper Irwell, the Ribble, Hodder and Douglas and their tributaries, and the Wyre and Lune.

Bream/Bronze Bream *Abramis brama*

Although the bream occurs in the slower, deeper reaches of rivers such as the Dane and Ribble, it is primarily a species of lowland stillwaters and canals. It is, for instance, a dominant species in many Cheshire meres and the larger mossland drains. It thrives in the near foetid pools in the

waterfowl garden of Martin Mere WWT, devouring bread and grain meant for the ducks. In 1989 it was stocked into the Ship Canal at Salford Quays.

Silver Bream *Blicca bjoerkna*

Ellison & Chubb gave no records of this species, which does occur in lowland meres and slow rivers in Cheshire and South Lancashire: e.g. Astle Pool, Chelford; Double Woods Pool, Mere; River Mere; Martin Mere WWT Reserve and Mere Sands Wood LWT Reserve. Care needs to be taken when identifying possible silver bream and young small bronze bream, know as 'skimmers' which are very common in some canals (e.g. Lancaster) and are quite silvery.

Barbel *Barbus barbus*

Ellison & Chubb gave no records for this species. Following subsequent introduction, today barbel occur in the River Dane around Holmes Chapel, the Bollin-Dean system (introduced about 1994) and in the Ribble between Preston (introduced illegally in the early 1970s) and Hodderfoot (there is a 2002 report of them occurring in the Hodder above Winkley Weir). The Environment Agency also has records from the Ribble as far upstream as Settle (North Yorkshire) and from the Yarrow and Savick Brook (Lancashire).

Gudgeon *Gobio gobio*

This small cyprinid occurs in clean, and some not so clean, rivers, park lakes, canals and mossland drains in the region from the Ribble southwards to the Dane and Weaver, including Prince's and Sefton Park lakes (Liverpool), the Leeds-Liverpool canal and Martin Mere WWT Reserve and waterfowl gardens. Like the dace, gudgeon stocks in the Ribble declined through the last quarter of the 20th century; in the 1970s day-catches of 10-20 were not unusual whereas today catching more than one is noteworthy.

Tench *Tinca tinca*

A species of eutrophic stillwaters and canals, the tench is commonly found in Cheshire's meres, some mining-subsidence flashes, lowland pools in the Fylde, the Leeds-Liverpool canal especially between Maghull and Scarisbrick, the Sankey Navigation, and the Bridgewater, Trent & Mersey and Shropshire Union canals. I have seen it 'bubbling' at Mere Sands Wood LWT Reserve, and it has been stocked at Martin Mere WWT Reserve and waterfowl gardens.

Stone Loach *Noemacheilus barbatula*

A species of clean gravel- and sand-bottomed streams that is often overlooked, for it tends to be nocturnal or crepuscular in its habits. It occurs in the Rivers Lune, Wyre, Ribble, Gowy, Bollin and the Dane-Weaver system and their feeder streams. I have no note of this species from the Dee.

[Spined Loach *Cobitis taenia*]

Ellison & Chubb quoted a record from Wayoh Reservoir, near Bolton on 12 June 1952 and questioned whether the species had been overlooked. I know of no other record and failed to catch one from Wayoh or neighbouring Jumbles and Entwistle Reservoirs in 1983-4. The Environment Agency confirms that there are no Cheshire/Merseyside records. This casts doubts on the Wayoh record and, though Alfred Hazelwood who identified it was unlikely to have made a mistake, the record should be placed in square brackets.

European Catfish/Wels *Siluris glanis*

This east European giant of a fish has been introduced widely, west to Spain. There have been rumours that it has been introduced to some British waters, including Lancashire. These rumours have been proved correct: the wels has been captured in pools in the Fylde (Environment Agency). Under DEFRA regulations, any wells caught in this country must be removed from the water.

Three-spined Stickleback *Gasterosteus aculeatus*

This well-known species is the most widespread fish in our region. It occurs in most freshwater habitats from dewponds, some reservoirs (since 2000 there has been a late summer population explosion in Parsonage Reservoir, Blackburn), the margins of meres and mining-subsidence flashes (it is common in the Wigan and Pennington Flashes), mossland drains, canals and rivers down to the tide. It appears to be capable of surviving in water so polluted that other fish species cannot survive. Ellison & Chubb recorded the species from a shrimping net in Liverpool Bay (1931), from West Kirby marine lake, and a tidal gutter at Hilbre; I have found it on the Ribble estuary in saltpans on the saltmarshes and from a pool by the sand-winning track across Horse Bank.

Nine- (Ten-) spined Stickleback *Pungitius pungitius*

Ellison & Chubb described this tiny fish as being widely distributed. However, it is not a common species, seeming to demand very shallow, weed-rich pond margins or ditches. This is a habitat that commonly dried up permanently during the summer droughts of the last quarter of the 20th century (I know of two ponds in the Fylde and three in the Leigh-Wigan area where this happened) or have been filled in by farmers or the builders of housing estates (I know of two close to Leigh where this has happened).

Nine-spined sticklebacks occur on some wetland reserves (e.g. Leighton Moss and Martin Mere WWT waterfowl gardens). It has been recorded in brackish water by the Dee and Ribble estuaries.

Miller's Thumb (Bullhead or Sculpin) *Cottus gobio*

This species requires clean, well-oxygenated water and, although it occurs in oligotrophic lakes further north in Britain, in this region it occurs only in streams with loose boulders under which it can hide by day and deposit its characteristic egg-mass. It is a common fish of the Lune, Ribble and Hodder, and Wyre (Lancashire), the Bollin and Dean, the Dane and Peover Eye and their tributaries, and the Gowy (Cheshire). It has recently been recorded from Rainford Brook (Sankey system) and Prescot Brook (Merseyside), the Yarrow (Lancashire) and upper Irwell (Greater Manchester).

Sea Bass *Dicentrarchus labrax*

This primarily marine fish does penetrate estuaries close to the limit of brackish-fresh water between May and October: Dee Estuary, Ribble to Warton, Wyre to Shard Bridge, Lune to Glasson Dock.

Perch *Perca fluviatilis*

With the roach, one of the best-known and most widespread of our freshwater fish, occurring in small dewponds, canals, large meres and some reservoirs, mossland drains and the lower reaches of rivers from the Ribble southwards.

Ruffe or Pope *Gymnocephalus cernuus*

Ellison & Chubbe described this species as 'uncommon'. However, it occurs in small numbers in most (if not all) canals, has been recorded from the slower reaches of the Ribble and Lune (Lancashire), Alt and Sutton Brook (Merseyside), Dee, Dane and Weaver (Cheshire), and from some reservoirs (e.g Bosley and Hurleston in Cheshire and Entwistle and Wayoh in Greater Manchester).

Thick-lipped Mullet *Chelon labrosus*

Like the sea bass, this is a marine species that penetrates all estuaries during the summer months. On the Mersey it can be seen in Liverpool and Birkenhead Docks, on the Lune below Skerton Bridge, and on the Ribble upstream to Savick Brook and the Douglas.

Common Goby *Pomatoschistus microps*

This is primarily an estuarine, brackish water species (it has been recorded from saltpans on Morecambe Bay and Ribble saltmarshes and from pools on mussel-beds of the Wyre Estuary); in 2000-2002 the Environment Agency recorded specimens from the canal at Weston (Cheshire) and from Whittle Brook (Warrington).

Flounder or Fluke *Platichthys flesus*

This primarily marine species penetrates true freshwater in the Dee as far as Farndon, the Mersey into the River Gowy, Rivacre Brook (Ellesmere Port), Weston Canal and Whittle Brook, the Ribble upstream of Salmesbury, the Wyre to Garstang and the Lune to Skerton weir. It is abundant in the brackish estuaries: e.g. salmon netsmen on the Ribble often catch over 100 per tide between Freckleton Naze and Lytham, while Ellison & Chubb described it as 'probably the most numerous resident of West Kirkby Marine Lake'.

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Recent Dragonfly Records: with particular reference to the Fylde.

Frank Walsh

The last 50 years have seen many changes in the status of dragonflies and damselflies (Odonata) in Britain. From 1945-1975 three species became nationally extinct and the ranges of many species declined sharply, mainly owing to the intensification of agriculture with its attendant drainage schemes and increasing pollution and eutrophication of fresh waters (Brooks 2001). More recently it appears that global warming is enabling a number of species to extend their ranges northwards into our region.

During the period 1975-1990 16 species of Odonata were recorded in Lancashire and North Merseyside, of these 11 species had been recorded on the Fylde. In addition the Yellow-winged Darter had occurred as a vagrant in the south of our area only before 1990 (Merritt *et al.* 1996).

Smith (1999) was able to report the occurrence of 20 species of Odonata from Lancashire and North Merseyside. Thus he added three species, Red-eyed Damselfly, Migrant Hawker and Black-tailed Skimmer, together with the Yellow-winged Darter which again appeared at several sites in our area during the great national influx of 1995. Between 1990 and 1999 the Fylde list had increased from 11 to 16 species.

In this account an attempt is made to update Smith's 1999 paper to the end of 2003, with particular reference to the Fylde. Only those species for which there is information additional to that given by Smith (1999) are covered.

Beautiful Demoiselle *Calopteryx virgo*

This species was not listed by Smith (1999). However, in 2003 one was seen in a St Annes garden on 16 July by P & M Shakeshaft, subsequently one was seen by P. Marsh at Middleton on 5 August. A male had earlier been seen just outside our area near Pennington Flash on 10 July. The nearest known breeding sites are in Cheshire and southern Cumbria.

Banded Demoiselle *Calopteryx splendens*

The Banded Demoiselle began to expand in the late 1990s from its long established sites on the River Lostock and in Cuerden Valley Park, reaching the Wyre at Churchtown by 1998. It is now well established in the River Wyre from at least St Michael's to the A6 road bridge and on New Mill Brook, a tributary of the River Brock.

Common Emerald Damselfly *Lestes sponsa*

Smith (1999) reported that this species was well established on the Sefton coast and at several sites near St Helens and Heysham but was rarely mentioned elsewhere. In addition Kirk (2000) reports confirmed breeding in 1999 in the Chorley & District Natural History Society area. Common Emerald Damselflies were first noticed on the Fylde in 2000 on Heron's Reach Golf Course. Since that time it appears to have spread further into the Marton area inland of Blackpool where in 2003 it was recorded from two ponds on Heron's Reach GC, 2 ponds on St Annes Old Links GC, 3 ponds at Westby Brick Pits and at St Annes Crematorium pond. It is also well established at Bank Well, Silverdale and, since at least 1999, Quarry Tarn, Beacon Fell Country Park where, in less than perfect conditions 125 were counted on 13 August 2003.

Migrant Hawker *Aeshna mixta*

After being recorded at Mere Sands Wood in 1996 the Migrant Hawker was recorded north of the Ribble in 1997 when four were seen at Marton Mere, Blackpool and others at Heysham. It probably began breeding at Marton Mere in 1999 when several pairs were seen in tandem on different dates. Since then it has become common in the Marton area, and it is now present at numerous ponds there. A circuit of Marton Mere on 20 September 2003 yielded a count of 61 individuals. Migrant Hawkers were also conclusively identified for the first time at Martin Mere Wildfowl Trust on 29 September 2003 when at least four males were seen in the vicinity of the Kingfisher and Millers Bridge hides (M. Jones & F. Walsh unpub.).

Southern Hawker *Aeshna cyanea*

This species is established in the Marton area with annual sightings at Marton Mere and Westby Brick Pits.

Emperor Dragonfly *Ariax imperator*

Following its reoccurrence on the Fylde in 1994 the Emperor has become widespread. In 2003 it was recorded from the Marton area from at least 7 sites and more than 12 ponds. It is still probably expanding its range as the first sightings at Stockydale Pits, Marton were in 2002. It also occurs in the eastern Fylde at Myerscough Quarry ponds and at Quarry Tarn, Beacon Fell Country Park. Breeding was proved in the Chorley Natural History Society area in 1999 (Kirk 2000)

Four-spotted Chaser *Libellula quadrimaculata*

In recent years this species has become much more frequently encountered on the Fylde, especially in the well watched Marton area, where it has been recorded at 5 sites. It also occurs at Myerscough Quarry, Quarry Tarn, Beacon Fell Country Park and Langden Beck Intake.

Broad-bodied Chaser *Libellula depressa*

Though known from Heysham since at least 1998, the Broad-bodied Chaser has yet to be recorded in the Fylde.

Black-tailed Skimmer *Orthetrum cancellatum*

This is another recent addition to our list, having first appeared at Mere Sands Wood and the nearby Platts Lane Pits in 1997. By 1999 it was well established there (Smith 1999) and has since continued its expansion. The Black-tailed Skimmer reached the Fylde in 2001 when it was seen ovipositing at 2 ponds on the Heron's Reach Golf Course, adjacent to Marton Mere. In 2002 two males were seen at Myerscough Quarry pools. In 2003 males were seen on two occasions at Marton Mere, while four males and 2 females were seen at the nearby Whitehills Road pond where oviposition was observed on several dates. At Myerscough Quarry at least 10 Males and 2 females were present and again oviposition was seen. Despite being in close proximity to Mere Sands Wood, Martin Mere Wildfowl Trust reserve did not record its first Black-tailed Skimmer until 4 August 2003 when Maurice Jones saw three males there, though by that time it had already been recorded as far north as Middleton.

Red-veined Darter *Sympetrum fonscolombii*

Another species that was not reported by Smith (1999), the Red-veined Darter invaded Middleton in 2000 and has been present annually since that time, clearly indicating that it has successfully bred there.

Ruddy Darter *Sympetrum sanguineum*

The Ruddy Darter is now regular at several coastal Fylde sites. It has been seen at Heron's Reach GC ponds and the Westby Brick Pit ponds, annually for the last four years.

Black Darter *Sympetrum dariae*

In addition to the sites listed by Smith (1999) the Black Darter is a common breeder in the Quarry Tarn, Beacon Fell Country Park. At least 37 individuals, including tenerals, and copulating and ovipositing pairs, were present there in cloudy conditions on 13 August 2003. It is occasionally seen on the coastal Fylde, having been recorded at Heron's Reach GC and Westby Brick pits.

Discussion

During the last four years several species of dragonflies and damselflies have continued to in expand their ranges in our area. Two species, the Beautiful Demoiselle and the Red-veined Darter, have occurred for the first time in Lancashire, with the darter becoming established at Middleton. In the Fylde the Black-tailed Skimmer appears to be establishing itself and the Broad-bodied Chaser has occurred as far north as Heysham on several occasions.

As Smith (1999) pointed out there has never been a more exciting time to watch dragonflies in Lancashire & North Merseyside. Steve White is building a database for the region and all records will be gratefully received at lwildlife@cix.co.uk or posted to Steve at Seaforth Nature Reserve, Port of Liverpool, L21 1JD.

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The Colonization of central and north Lancashire by Comma and Speckled Wood Butterflies

John Wilson and Frank Walsh

Introduction

In recent decades butterfly populations have shown marked changes. Many habitat specialists have declined both in numbers and range. However, particularly in the north west, several wider countryside species (for definitions consult Asher et al. 2001) have greatly increased their range, and populations. This short paper describes the most spectacular extension of range and increase in numbers recorded by butterfly watchers within Lancashire north of the River Ribble (VC60), together with the East Lancashire Ornithologists Club area, the Chorley and District Natural History Society area and Martin Mere WWT, parts of which are in VC 59.. References to other areas are not definitive.The spread and increase in population of these two formerly absent species has been well documented both from records from many parts of the county, along with accurate numerical transect data, especially from the north of the county. Speckled Wood has now become one of the commonest and most widely distributed butterflies in our study area. The spread of the Comma has been equally dramatic, but numerically less spectacular. The former status within the study area of these two species has been investigated and possible causes for the change in status are suggested.

Methods

Records were collected from many observers throughout our area. Especially revealing though were the data from transect counts undertaken at six sites within the county. This method produces an annual index for each species based on a weekly transect count of a standard route walked during suitable weather. Most of the transects have had similar coverage right throughout the period; indeed most of them have been covered by the same observer or team of observers throughout and so produced annually comparable figures.

Comma *Polygonia c-album*

Past Status

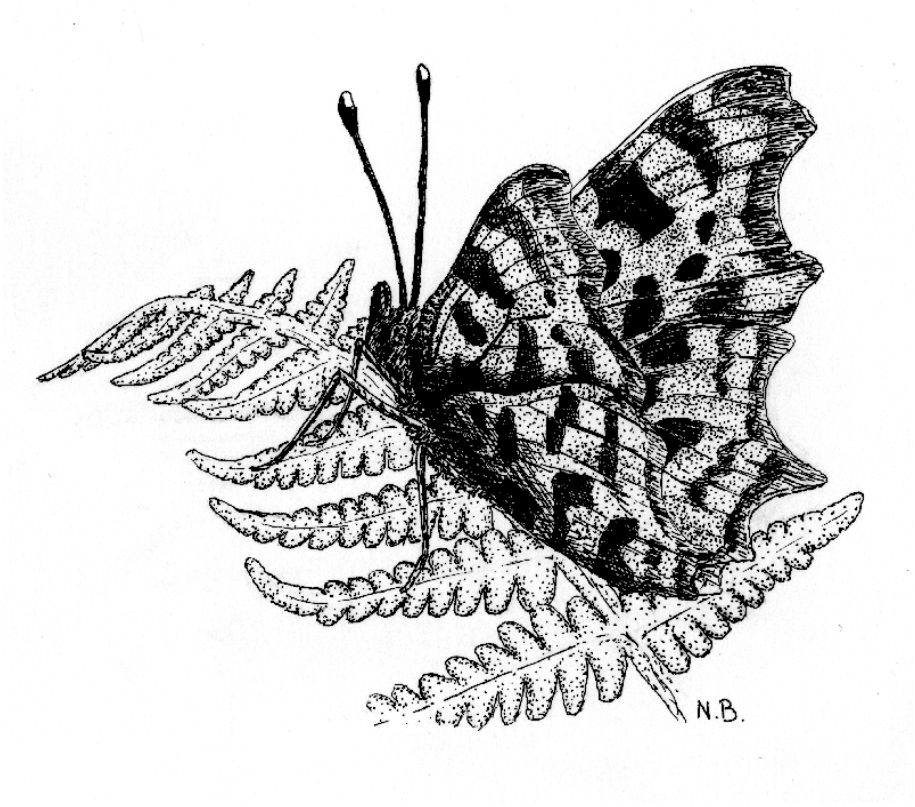
The Steedens (1977) wrote " There are no recent West Lancashire (i.e. Vice-County 60) records of the Comma, the latest probably being a single specimen seen at Torrisholme, Morecambe in the late 1950's. In the 19th century the Comma occurred as far north as southern Scotland, but its range subsequently contracted southwards. In the past few decades this southward movement appears to have been reversed and there are post –1959 records for North Wales, South Lancashire, Cheshire and Yorkshire. If this northerly drift continues there is every possibility that the Comma will be restored to the West Lancashire list, if only as a vagrant." Asher et.al. (2001) map the distribution of this species from 1970 to 1982 and there are no records north of Cheshire to the west of the Pennines.

Colonization

From the Steedens' report in 1977 until 1990 we can only trace eight records of Comma in our study area. One in Huntroyd in September 1980 (Spencer 1993) and three in the Chorley & District Natural History Society area between 1980 and 1988 (Kirk 2000). Singles were recorded at Thornton and Lea within the Fylde and Hoghton in 1982 (Steeden 1984). The most northerly record was in the Claughton/Farleton area of the Lune valley in 1989 (Anon 1997).

In the early 1990s there were the first tentative signs of colonization. One was seen and photographed in the Burnley area in September 1991. A Comma was seen in the same garden in July 1992 when there was another individual in a nearby garden at about the same date (Spencer 1993). Commas were seen in Cuerden Valley Park in August 1991. Other singletons in 1991 were in a well watched garden in the Ribbleton district of Preston and in the Boilton/Red Scar Woods and one was also in a garden in Ansdell Lytham on 13th October. Two were recorded on the Martin Mere WWT Butterfly Transect in 1991 and they have been recorded every year since except 1994, being well established by 1995 (See Table 6 for details). In September 1992 about 20 were released from the Remploy factory in Accrington Road, Burnley but these earlier records clearly indicate that natural arrival had already taken place before this misguided release. Two were reported in the Burnley area in 1994 followed by a sharp increase to ca. 15 in 1995 and more widespread and in double figures in 1996. In 1997 there were between 30 and 35 sightings and numbers continued to rise to ca. 50 sightings in 2000, though there were fewer in 2001 (Annual reports from the Burnley area by K.G. Spencer and J. & S. Howarth). In the Chorley & District NHS area the species began to increase early in the 90's and has steadily increased there to become one of the most frequently recorded garden butterflies (Kirk 2000). Numbers stayed low in the Preston area until 1996 when six were recorded. In the Ribble woods further east a Comma was not seen until 1994 and they remained sporadic there with six in 1999 being the only notable number.

However, in the Fylde records were sporadic until 1997 when the first Commas were recorded at Marton Mere LNR and Fluke Hall, while a fine fresh imago was seen on the exceptional date of 31st December, outside the Hand & Dagger, Salwick.



In the north of the county butterfly records were mapped by tetrad from 1983 to 1996 by The North Lancashire Naturalists Group. During this period there were records from three tetrads south of the river Lune in 1991-3. The Comma was also recorded in the Wyre valley, in the Scorton picnic site area in 1991-93. The build up of

numbers in the north of the county is well shown in the butterfly transect data. (Table 1). By 1995 Commas were well established at Leighton Moss and Gait Barrows. Numbers have fluctuated since then, but they have spread and became established on Warton Crag in 1998. Despite a run of small numbers since 1995 they only became established at Heysham Nature Reserve in 2001.

In the grey and sunless summer of 1998 butterfly numbers were generally poor, and this was certainly so for the Comma. The maps issued by Butterfly Conservation in 1998 covered the period 1995 to 1998 and did not indicate much advance. However, Butterfly Conservation stated that 'over recent years the Comma has become firmly established in Lancashire, Greater Manchester and Merseyside', though 1998 itself was a poor season. In the Burnley area, though, Commas continued their steady colonization, although total numbers were down (Spencer 1998). After the initial finding at Marton Mere LNR in 1997 none were reported in 1998, though in Ansdell a Comma was seen in a garden in August.

In 1999 Commas, though still uncommon, became more widespread with two new sites Over Wyre where 14 were seen at Fluke Hall on 14th October. In south Fylde one was seen at Woodlands Garden, Blackpool, while at Marton Mere LNR seven Commas were recorded. The Butterfly Conservation report compared the maps for the period 1990-94 and 1995-99. In Lancashire the numbers of tetrad occupied by Commas were 41 and 177 respectively.

The year 2000 was another with rather poor weather. Nevertheless, and despite the closure of the national Butterflies for the New Millenium project, Commas were recorded in 65 Lancashire tetrads. At Eaves Wood a splendid total of 77 were seen in spring flight, and there were 19 at Martin Mere WWT in autumn. Transect counts were the best to date in the Silverdale area. Over Wyre Commas were seen at a record five sites. In south Fylde a record 16 tetrads held Commas with the species being recorded for the first time from Bispham Marsh where transects had been carried out by Barry Brigden since 1994. In 2001 numbers increased greatly throughout the Fylde.

Table 1. Annual Indices for Commas at 6 Transect Sites in Lancashire 1991 to 2002

Site /Year	Start Year	91	92	93	94	95	96	97	98	99	00	01	02
Leighton Moss.RSPB.	1979	0	1		8	28	18	17	53	30	42	35	28
Warton Crag RSPB	1988	0					1	0	42	4	15	4	0
Heysham N R	1985	0				2	4	5	2	1	2	21	13
Gait Barrows Wardens	1982	0		1	1	6	14	9	18	8	25	6	12
Gait Barrow BMS	1987	0				3	21	15	7	14	22	6	16
Martin Mere W.W.T.	1990	2	9	2	0	25	9	7	5	9	60	29	41

Speckled Wood *Pararge aegeria*

Past Status

According to the Steedens (1977) this butterfly was common around the northern part of Morecambe Bay up to the beginning of the 20th century. It was present at Witherslack in the old Furness part of Lancashire (and just across the River Kent from modern Lancashire) until at least 1956 when three specimens were seen while a singleton was seen at Grange-over-Sands in 1960. They also give a pre-1960 record for SD53 . This is probably the same record that Asher *et al.* (2001) give as pre-1920. The Steedens considered the species to be extinct in the area of West Lancashire (VC 60) that they covered in the 1970s. Their subsequent reports up to 1982 give no further records, although the 1981 report has the following comment 'an entomologist in the Barton area has started to introduce Speckled Wood butterflies into woodland in the hope that the species will become established'.

Colonization

The only records in the 1980s that we can trace are singles at Gait Barrows in 1985 and Warton Crag in 1988 but colonization did not take place. Speckled Wood reached Martin Mere WWT in 1991 when two were recorded. This was followed in 1992 by 9 and in 1993 by 2 which suggests breeding had successfully occurred. However, there were no more until three in 1996 after which regular expansion took place (see Table 2). So it seems likely that a first colonization died out. In the Preston area in 1991 one was seen in the Boilton/Red Scar Wood area and two in a Ribbleton garden, with a further two in the same garden in 1992. But these sites yielded very few butterflies in subsequent seasons until six were recorded in the garden in 1996 and six in the woodland in 1999. There were single records from Rossendale in 1991 and 1992. At Lytham Hall woods in 1992 M. Myerscough saw Speckled Woods on several dates, with a maximum of four on any one day. However, on 17 September 1993 in a 20 minute walk M. Evans, accompanying M.Myerscough, saw at least 14 Speckled Woods, indicating that at this site successful colonization was under way. One Speckled Wood was seen on the Lytham St Annes LNR in 1992, though this unsuitable site yielded no more of the species until one in 1997. During 1992 the species also reached the Chorley & District NHS and Burnley areas but again in neither case did this result in successful colonization. The next Speckled Wood to be recorded in the Chorley area was not until 1996, followed by four in 1998. However, in 1999 the species was being described as frequent (Kirk 2000), and so could be presumed to have finally succeeded in its colonization. In the Burnley area there were no further sightings until 1999 when four specimens were seen at three sites. This was followed in 2000 with records from 12 sites again suggesting successful colonization.

Despite a continuing thriving colony in Lytham Hall woods the butterfly did not, at first, spread successfully in the surrounding area, though single butterflies were recorded at a scattering of sites in south Fylde in 1993 and 1994, when the first record from Marton Mere LNR, Blackpool occurred. In 1995 the first specimen was seen at Over Wyre. In 1997, for the first time, Speckled Woods were recorded at Green Drive, Lytham when on 17 June four were seen, despite this site being adjacent to well established Lytham Hall colony. In 1998 Woodlands Garden, Blackpool was colonized, followed by Freckleton Naze and Arundel Road, Ansdell in 1999 and

by Skipton Road, Ansdell, Marton Mere LNR, Bispham Marsh and several other sites in 2000. Sites in Over Wyre were also colonized that year.

The transect data from North Lancashire (Table 2) show a very similar pattern to that described above of small numbers for a year or two, then a marked colonization. Especially interesting are the Gait Barrow records. The two transects are in the same wooded area but the BMS transect recorded butterflies for two years before any were recorded on the Warden's transect and significant numbers were recorded a year earlier (in 1996) than on the Warden's transect. This clearly shows how local initial colonization can be. The Heysham records also show how long it can take for successful colonization to take place with significant numbers only occurring six years after the first record. The butterfly had been established at Heysham Head about a mile to the north for 2 or 3 years prior to its establishment at Heysham N.R.

Table 2. Annual Indices for Speckled Wood at 6 Transect Sites in Lancashire 1985 to 2002

Site/ Year	Start Year	85	88	89-90	91	92	93	94	95	96	97	98	99	00	01	02
Leighton Moss RSPB	1977			0				1		3	5	36	118	255	94	145
Warton Crag RSPB	1988		1	0					1	17	46	196	229	191	175	307
Heysham NR	1985			0			1	1	0	0	3	0	9	76	169	434
Gait Barrows Warden	1982	1		0						3	8	107	385	271	165	238
Gait Barrows BMS	1977			0				6	2	2	25	142	424	300	151	272
Martin Mere WWT	1990			0	2	9	2	0	0	3	9	21	62	194	195	206

Discussion

According to Asher et al. (2001) (map on page 210) the Comma was well established in Cheshire in 1982 and virtually absent north of the Mersey-Irwell. By 1999 it had colonized the northwest of England as far north as south Cumbria, thus advancing a distance of ca. 120km in 17 years, or 7.06km/yr. This is considerably more than the advance calculated by Hill et al. (1999). However, it is clear that North Merseyside was extensively colonized by 1991 and that colonization must have been substantial before that year. Commas began their expansion in Greater Manchester in about 1987 according to Hardy (1996) who considered that the vast swathes of Michaelmas Daisies clothing many former tips and waste areas in the Mersey and Croal/Irwell valleys, which are particularly used by over-wintering Commas, may have been a factor in this range expansion. Within the present Lancashire county boundary the Chorley area was successfully colonized by the end of the 1980s or early 1990s, and at about that time single Commas, especially of the second generation, began to appear widely further north. However, often this did not lead to permanent colonization, probably owing to fragmentation of suitable habitats, and the fact that eggs are laid singly. At Martin Mere WWT it seems probable that the first colonization failed. Chance events where a single insect may be the colony founder, and the importance of habitat quality, may explain the fact that there was a large and thriving population in the Silverdale area

while in the Fylde and Ribble valley the species was still struggling for permanency. However, in most parts of Lancashire the species seems now to be reasonably common.

When the Millenium Atlas (Asher et al. 2001) was being prepared it was clear that the Speckled Wood had a more southerly distribution in England than had the Comma, though at that time it had isolated populations much further north in the NW and NE of Scotland, areas from which the Comma was absent. In 1992, like the Comma, the Speckled Wood was already widely distributed in North Merseyside, though it had not penetrated SW Lancashire, (it was however, thriving in the excellent habitat of Mere Sands Wood by the late 1980s) where the Comma was also established In 1993 it was also less widespread in Greater Manchester than the Comma, being mapped from 14 tetrads as against 27 tetrads for the Comma. In the Fylde the Speckled Wood had become well established in Lytham Hall woods, in the early 1990s, before the Comma had colonized the area. However, it was not until 1998 that it began to establish itself at other Fylde sites, whilst the Comma took until 1999 to achieve the same advance. In contrast in the C&DNHS area whereas the Comma started to become established as early as 1990, being a common species locally by 1999, the Speckled Wood was only twice reported before 1999 (Kirk 2000)

Once established, numbers of Speckled Wood expanded rapidly, greatly outnumbering those of the Comma, as is clearly seen by comparison of the Tables. Only at Martin Mere WWT has Comma outnumbered Speckled Wood. The population explosion of the Speckled Wood at Bispham Marsh has been remarkable. Both it and the Comma only reached this well monitored site in 2000 but by 2002 the Speckled Wood counts exceeded 100 on three dates with a maximum of 155 on 2nd September. By comparison the maximum count of Commas at this site has been six on 6th October 2001. This is the more surprising as Bispham Marsh is not particularly well wooded. Similarly at Marton Mere LNR, also colonized by Speckled Wood in 2000, a maximum daily count of 50 had already been reached by 22nd August 2002. At Fluke Hall also, colonization in 2000 led to a maximum count of 42+ by 7th September 2002, whereas the Comma had reached a maximum of 14 on 14th October 2001.

From the timing of the records it appears that expansion of both species occurred from the south, with more favoured habitats, such as Lytham Hall woods becoming colonized earlier and perhaps on first being reached, while colonization at less suitable sites, such as Martin Mere WT, was probably only achieved at second or subsequent attempts. Some isolated sites seem also to have been infilled later. This is well borne out by the rather isolated Heysham NR which was colonized by both species much later than the more extensive and less isolated areas further north in the Silverdale AONB. There is also the possibility that the Speckled Wood's quick build up in the Silverdale area was helped by butterflies moving in from south Cumbria where there was apparently some re-introduction in the Witherslack area. This infilling of isolated sites may also explain the late arrival of both species at Bispham Marsh which, judging by the rapid growth in the population of, at least, the Speckled Wood, is an extremely suitable site. Some infilling of less favoured areas may result from the movement of Speckled Wood butterflies from directions other than from the south. Thus in the Burnley area the direction of recent spread is considered to be from strongholds to the west (Howarth & Howarth 2002).

The reasons why Speckled Wood numbers have risen so dramatically in the last three years are not obvious and can only partly be attributed to the species producing three generations per year as against the Commas' two generations.

The spectacular spread of these two species is difficult to explain especially as it appears in both cases to be a re-colonization after a 19th & 20th century decline. The speed and also the

similar timing of the spread is also interesting, possibly suggesting similar favourable conditions for both species. Recent climatic changes perhaps especially much milder winters have been suggested as one of the possible reasons for the change. Asher et al. (2001) suggest that the historical decline in the Comma population may have been related to the successive cold winters up to the 1960s and that the recent trend to milder winters has improved their survival. They also raise the possibility of a change in caterpillar food plant from Hop to the much commoner and widely distributed Nettle and Wych Elm. It has been suggested that different races, using different food plants, may be involved but there is no proof of this. They conclude that there is no clear explariation for the increase but point out that British Commas in the current area of expansion have two broods while those at the northern edge of their range in Scandinavia have only one brood.

Asher et al. (2001) are more certain about the reasons for the spread of the Speckled Wood. They link the changes with long term climatic change as discussed under Comma and also to habitat change. They suggest that the trend to more shady woodland following declines in woodland management has favoured this species. Certainly many of the areas now strongly occupied by Speckled Woods, such as Warton Crag , Gait Barrows, Heysham N.R and Martin Mere are now much more wooded with suitable shady conditions than in the 1970's.

It will be interesting to continue to monitor the future populations of these two currently expanding species. Several other species, notably Small Skipper, Gatekeeper and White-letter Hairstreak, appear to be expanding northwards and increasing their populations but at a much slower rate than the two species discussed here.

Acknowledgements

It is a pleasure to acknowledge the assistance of the observers listed below in supplying records and details of transect counts. Rob Petley-Jones, Robin Horner, Jarrod Sneyd, Doreen Carmen, Laura Sivell and Tony Aldridge together with the following who provided details of personal observations and local reports; Harry Andrew, Barry Brigden, Bob Danson, Malcolm Evans, Simon Hayhow, Peter Hornby, Jeff and Sheila Howarth, Maurice Jones, Pete Marsh, Dave McGrath, Monty Myerscough, Peter North, Darren Rickards, Dominic Rigby, Larry Ryan, Peter & Maureen Shakeshaft, Bob Stinger, Philip Thompson & Chris Tomlinson

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A Checklist of the Macrolepidoptera of Lancashire and Cheshire

Alan Creaser

Fully Revised December 1999 with corrections up to December 2003

It is now nineteen years since publication of my last checklist containing 548 species in 19 families and 311 genera. At that time only positive records since 1960 were included in line with the Biological Record Center's date line The intervening period will no doubt, on examination, confirm that we have lost some species but thankfully them have been many significant gains to both counties and perhaps more importantly increase in range within a county. In most cases such new records are in species attending a light source, which might indicate that there is a falling off in good old-fashioned field work practiced by earlier lepidopterists.

Ian Rutherford's 'Macro-Moths in Cheshire 1961 to 1993' provided a much-needed detailed account of Cheshire moths. It is good to see that Lancashire moths are to receive some special attention with the formation of the Lancashire Moth Group under the leadership of Steve Palmer. For now, however, this Fauna Society checklist will, I hope, serve to link our two counties in the best tradition of the Fauna Committee.

There is some considerable disquiet over records from traps where critical species are concerned and the specimen is not retained for expert examination by comparison with a known specimen, or better still a genitalia slide preparation. The situation has, in recent years, been made worse by species splitting, viz. *secalis/secalella*, *pyraxmidea/berbera*, *festucae/putnami gracilis*, to name but a few. There is still some doubt about the separation of *Ectropis bistortata* Goeze and *crepuscularia* D. & S. as distinct species. Bradley 1998 indicates that in continental Europe they are considered to be conspecific.

The area covered by the report is made up of just three Vice-Counties in the Watsonian system, Cheshire being VC58 and the present Lancashire VC59 and VC6O. In the last the northern limit of Lancashire was always in doubt for natural history recording purposes since it extended well beyond the Kent estuary and is often referred to as Old Lancashire. Any mention of north Lancashire in this list might include Silverdale but not Arnside which is in Cumbria. The northern end of Cheshire has also in the past presented similar problems and does not use the Mersey as the natural boundary but sweeps well north of both Warrington and Widnes to meet the Mersey estuary just west of Hale Head lighthouse. Thankfully the western limits of both counties are coastal so form a natural frontier for most insects. Surprisingly the marine barrier is just over three quarters that of the inland border with Clwyd, Shropshire, Staffordshire, Derbyshire, Yorkshire and Cumbria. Greater Manchester and Merseyside are, for the purposes of this report, included in their relevant counties. The Hilbre Island group in the Dee was worked with a light trap in the late sixties by Professor Sir Cyril Clarke as part of his work on melanism in *Biston betularia*, Linn. He kindly recorded for me the 41 species of moths trapped and these are listed in the General Report for 1987, publication No. 80. Nothing of great note turned up but by far the commonest species was the Marbled Coronet *Hadena confusa* Hufn.

Generally some idea of the status of each species is indicated by the lettering system which follows its name. Where there is no such symbol the species can usually be considered to be common, or reasonably so. The bracketed numbers following selected species refer to the

publication number of the report in which that species is mentioned in my earlier reports. The bracketed N.S. indicates that the species is considered by the Biological Record Centre to be nationally scarce.

Key to other abbreviations

L.	Lancashire	occ.	occasional
C.	Cheshire	r.	rare
l.	local	m.	migrant
sc.	Scarce	w.	widespread
un.	uncommon	v.	very

A breakdown of the list is as follows:

Superfamilies	11
Families	21
Subfamilies	34
Genera	325
Species	589

As in the past reports, the arrangement of species and nomenclature follows that of Kloet and Hincks (both originally Committee members), ‘A Check List of British Insects’ Second Edition (Revised) 1972 Part 2: Lepidoptera, published by the Royal Entomological Society of London. For ease of reference I have included the serial numbers adoptedted by Bradley and Fletcher in their Recorder’s Log Book (1979).

I am indebted to the following correspondents for their help in providing material for this revised list: Dr R. G. Ainley, Dr. N. L. Birkett, Mr. R. Banks, Prof. Sir Cyril Clarke, Mr. C. Derbyshire, Mr. M. H. Grice. Mr. C. Hart, Dr. M. Hull, Mr. K. McCabe, Mr. S. J. McWilliams, Mr. S. Palmer, Mr. W. T. C. Rankin (for Birkenhead School), Mr. C. I. Rutherford, Mr. B. Skinner, Mr. N. J. Steeden, Dr. I. D. Wallace and Mr. G. Wotherspoon.

The supplement to the Proceedings of the Lancashire and Cheshire Entomological Society ‘Butterflies in Cheshire 1961 to 1982’ was produced by Ian Rutherford in which he gives details of 32 species found therein. Both this publication and ‘Macro-Moths in Cheshire’ are available from the Hon. Secretary, Mr. Ian Smith, 12 Fernhill, Mellor, Stockport, SKG 5AN (email: ifsmith@onetel.com)

HEPIALOIDEA

HEPIALIDAE

14	Hepialus humuli hutnuli Linn.	
15	H. sylvina Linn.	(65)
16	H. hecta Linn.	
17	H. lupulinus Linn.	
18	H. fusconebulosa De Geer	l.

COSSOIDEA

COSSIDAE

	ZEUZERINAE	
161	Zeuzera pyrina Linn.	l.sc. (59)
	COSSINAE	
162	Cossus cossus Linn.	L.l.r. (N.S.)

ZYGAENOIDEA

ZYGAENIDAE

	PROCRIDINAE	
163	Adscita statices Linn.	v.l (69)
164	A. geryon. Hübn.	L.v.l.r.(69) (N.S.)
	ZYGAENINAE	
169	Zygaena filipendulae anglicola Trem	w.v.l.
170	Z. trifolii decreta Ver.	L.v.l.sc.
171	Z. lonicerae transferens Ver.	w.v.l.

YPONOMEUTOLDEA

SESIIDAE

	SESIINAE (N.S.)	
370	Sesia apiformis Clerck.	L.v.l.r.
371	Sesia bembeciformis Hübn.	v.l. (52)
	AEGERIINAE	
373	Synanthedon salmachus L. (tipuliformis Clerck)	un.
374	S. vespiformis Linn.	v.l.
375	S. spheciformis D. & S.	L.v.l.r.
376	S. scoliaeformis Borkh.	L.v.l.r.
380	S. formicaeformis Linn.	C.v.l.r. (N.S.)
381	S. culiciformis Linn.	v.l.r.
383	Bembecia muscaeformis Esp	L.v.l.r.

HESPERIOIDEA

HESPERIIDAE

HESPERIINAE

1526	Thymelicus sylvestris Poda	v.l. (71) formerly, now w.
1531	Ochlodes venata faunus Tur.	(71)

PYRGIINAE

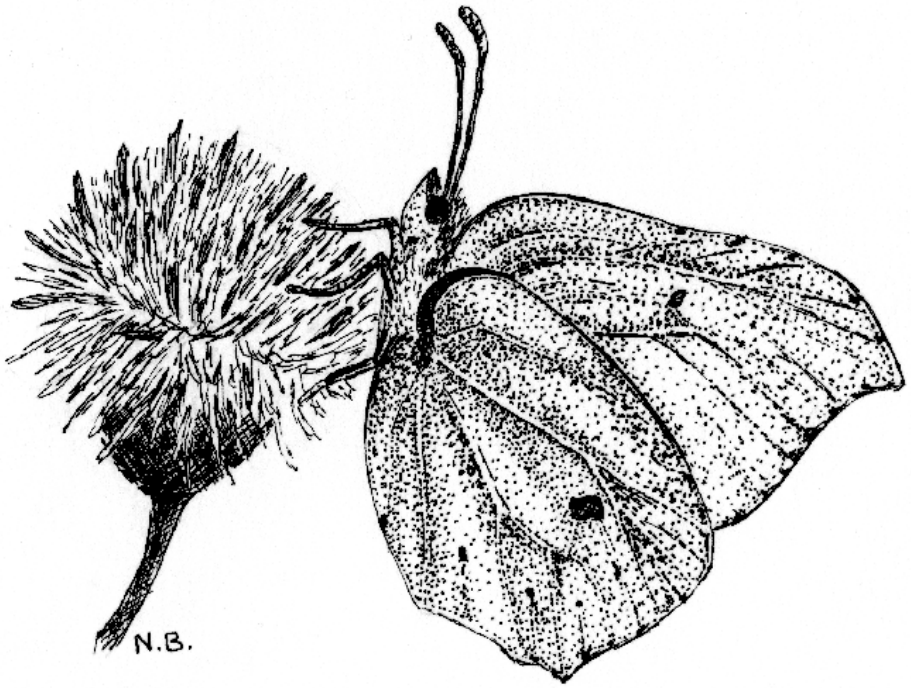
1532	Erynnis tages tages Linn.	
1534	Pyrgus malvae Linn.	v.l.r. (71) (N.S.)

PAPILIONOIDEA

PIERIDAE

COLIADINAE

1545	Colias croceus Geo.	m. (59) (71)
1546	Gonepteryx rhamni rhamni Linn.	sc.



PIERINAE

1549	Pieris brassicae Linn.
1550	P. rapae Linn.
1551	P. napi sabellicae Steph.
1553	Anthocharis cardamines britanica Ver.

LYCAENIDAE

THECLINAE

1555	Callophrys rubi Linn.	v.l.
1557	Quercusia quercus Linn.	v.l. (71)
1558	Satyrium w-album Knock	L.l.sc. C.l. (55) (71)

LYCAENINAE

1561	Lycaena phlaeas eleus Fabr.	(51)
1569	Cupido minimus Feuss.	north. L.v.sc.l. (N.S.)
1572	Aricia agestis artaxerxes Fabr.	L.l.
1574	Polyommatus icarus icarus Rott.	
1580	Celastrina argiolus britanna Ver.	l. (71) fluctuating yearly

NEMEOBIIDAE

1582	Hamearis lucina Linn.	north. L.v.l.r. (N.S.)

NYMPHALIIDAE

1590	Vanessa atalanta Linn.	
1591	V. cardui Linn.	(51)
1593	Aglais urticae Linn.	
1594	Nymphalis antiopa Linn.	m.r. (71) (73)
1597	Inachis io Linn.	
1598	Polygonia c-album Linn.	un. (65) formerly, now v.w.
1600	Boloria selene selene D. & S.	L.l. C.r.l.
1601	B. euphrosyne Linn.	L.l.r.
1606	Argynnis adippe vulgoadippe Ver.	L.l.r. (N.S.)
1607	A. aglaja aglaja Linn.	l.sc. (65) (71)

SATYRIDAE

1614	Pararge aegeria tircis But.	(51) (71)
1615	Lasiommata megera Linn.	un.
1621	Hipparchia semele Linn.	l. (65) (71)
1625	Pyronia tithonus britanniae Ver.	(51)
1626	Maniole jurtina splendida White	
1627	Coenonympha pamphilus pamphilus Linn.	l. un.
1628	C. tullia davus Fabr.	L.l.r. (71)
1629	Aphantopus hyperantus Linn.	C.l.r.

BOMBYCOIDEA

LASIOCAMPIDAE

1631	Poecilocampa populi Linn.	(51)
1632	Trichiura crataegi Linn.	(65) l.r.
1633	Eriogaster lanestris Linn.	C.r. (N.S.)
1634	Malacosoma neustria Linn.	C.r. (N.S.)
1636	Lasiocampa trifolii trifolii D. & S.	L. l. (59)
1637	L. quercus callunae Palm.	

1638	Macrothylacia rubi Linn.	l.
1640	Philudoria potatoria Liin.	

SATURNIIDAE

1643	Saturnia pavonia Linn.	l.

GEOMETROIDEA

DREPANIDAE

1645	Falcaria lacertinaria Linn.	v.l.
1646	Drepana binaria Hufn.	(51)
1647	D. cultraria Fabr.	L.v.r.
1648	D. falcataria falcataria Linn.	
1651	Cilix glaucata Scop.	

THYATRIDAE

1652	Thyatira batis Linn.	(52)
1653	Habrosyne pyritoides Hufn.	
1654	Tethea ocularis octogesimea flubn.	
1655	T. or D. & S.	L.v.r.
1656	Tetheella fluctuosa Hübn.	north.L.l.
1657	Ochropacha duplaris Linn.	
1658	Cymatophorima diluta hartweiei Reiss.	l.
1659	Achlya flavicornis scotica Tutt	l.un.

GEOMETRIDAE

ARCHIBARINAE

1661	Archiearis parthenias Linn	(51) l.

OENOCHROMINAE

1663	Alsophila aescularia D. & S.	

GEOMETRINAE

1665	Pseudoterpna pruinata atropuncteria Walk.	un.
1666	Geometra papilionaria Linn.	(55)
1667	Comibaena bajularia D. & S. (pustulata Hufn.)	v.l.
1669	Hermithea aestivaria Hübn.	(51)
1670	Chlorissa viridata Linn.	north L.v.l.
1674	Jodis lactearia Linn.	sc.
1677	Cyclophora albipunctata Hufn.	C. l.r.

STERRHINAE

1680	Cyclophora punctaria Linn.	C.l.r.
1681	C. linearia Hübn.	v.r.
1682	Timandra griseata griseata Pet. (comae Schmidt)	
1689	Scopula marginepunctata Goeze	L.l.sc.
1690	S. imitaria Hübn	un.
1692	S. immutata Linn.	l .r.
1693	S. floslactata floslactata Haw.	

1694	S. ternata Schr.	l .r.
1698	Idaea muricata Hufn.	l .r. (N.S.)
1701	I. sylvestraria Hübn.	v.l.r. (N.S.)
1702	I. biselata Hufn.	
1705	I. fuscovenosa Goeze	r.
1707	I. seriata Schr.	
1708	I. dimidiata Hufn.	
1709	I. subsericeata Haw.	l.sc. (59) coastal.
1712	I. emarginata Linn.	C.l.r.
1713	I. aversata Linn.	
1715	I. straminata Borkh.	r.
1716	Rhodometra sacraria Linn.	m.occ. (65)

LARENTIINAE

1718	Mesotype virgata Hufn.	L.v.l.
1719	Orthonama vittata Borkh.	l.r. (59)
1720	O. obstipata Fabr.	m.occ. (51)
1722	Xanthorhoe designata Hufn.	
1723	X. munitata munitata Hübn.	l.un.
1724	X. spadicearia D. & S.	l.un.
1725	X. ferrugata Clerck	
1727	X. montanata montanata D. & S.	
1728	X. fluctuata lluctuata Linn.	
1732	Scotopteryx chenopodiata Linn.	
1733	S. mucronata umbrifera Heyd.	l.un.
1734	S. luridata plumbaria Fabr.	l.un.
1735	Catarhoe rubidata D. & S.	C.v.r (N.S.)
1738	Epirrhoe alternata alternata Mull.	
1740	E. galiata D. & S.	sc.
1742	Camptogramma bilineata bilineata Linn.	
1744	Entephria caesiata D. & S.	l.un. (52)
1745	Larentia clavaria Haw.	l.
1746	Anticlea badiata D. & S.	
1747	A. derivata D. & S.	1. (52)
1748	Mesoleuca albicillata Linn.	v.l.r. (52)
1749	Pelurga comitata Linn.	
1750	Lampropteryx suffumata D. & S.	l. (52)
1752	Cosmorhoe ocellata Linn.	
1753	Nebula salicata latentaria Curt.	L.v.l.
1754	Eulithis prunata Liun.	un.
1755	E. testata Linn.	l.sc.
1756	E. populata Linn.	
1757	E. mellinata Fab.	
1758	E. pyraliata D. & S.	
1759	Ecliptopera silaceata D. & S.	l. (65)
1760	Chloroclysta siterata Hufn.	l.r. (59)
1761	C. miata Linn.	l.r. (55)

1762	C. citrata citrata Linn.	
1764	C. truncata Hufn.	
1765	Cidaria fulvata Forst.	un. (51)
1766	Plemyria rubiginata rubiginata D. & S. (bicolorata Hufn.)	un. (55)
1767	Thera firmata Hübn.	l.un.
1768	T. obeliscata Hübn.	
1769	T. variata variata D. & S.	l.un. (59)
1770	T. cognata Thunb.	north L.v.r.
1771	T. juniperata juniperata Linn.	l.sc. (65) (N.S.)
1772	Eustroma reticulata D. & S.	north L.v.l.r. (65)
1773	Electrophaes corylata Thunb.	
1774	Colostygia olivata D. & S.	north L.r. (65)
1775	C. multistrigaria Haw.	l.
1776	C. pectinataria Knoch	
1777	Hydriomena furcata Thunb.	
1778	H. impluviata D. & S.	l.un.
1779	H. ruberata Frey.	l.un
1784	Melanthia procellata D. & S.	l.r.
1787	Rheumaptera hastata hastata Linn.	l.r. (N.S.)
1788	R. cervinalis Scop.	r. (52) (N.S.)
1789	R. undulata Linn.	r. (59)
1790	Triphosa dubitata Linn.	sc. (55)
1791	Philereme vetulata D. & S.	north L.l. (69)
1792	P. transversata britannica Lemp.	l.r. (52)
1795	Epirrita dilutata D. & S.	
1796	E. christyi Allen	v.l.r.
1797	E. autumnata Borkh.	l.
1798	E. filigrammaria H-S.	v.l. (N.S.)
1799	Operophtera brumata Linn.	
1800	O. fagata Scharf.	v.l.sc. (55)
1801	Perizoma taeniata Steph.	L.v.l.
1802	P. aftinitata Steph.	l. (52)
1803	P. alchemillata Linn.	(51)
1804	P. bifaciata Haw.	l.r. (59)
1807	P. albulata albulata D. & S.	un. (59)
1808	P. flavofasciata Thunb.	l.
1809	P. didymata didymata Linn.	l.
1811	Eupithecia tenuita Hübn.	L.r. (75)
1813	E. haworthiata Doubl.	l.r.
1814	E. plumbeolata Haw.	L. l.r.
1815	E. abietaria Goeze	L.r. C. vagrant (N.S.)
1816	E. linariata D. & S.	(75)
1817	E. pulchellata pulchellata Steph.	(75)
1819	E. exiguata exiguata Hübn.	(75)
1821	E. valerianata Hübn.	l. (N.S.)
1822	E. pygmaeata Hübn.	v.l.sc. (75)

1823	E. venosata venosata Fabr.	sc. (75)
1825	E. centaureata D. & S.	(75)
1826	E. trisignaria H-S.	C.r. (larvae) (N.S.)
1827	E. intricata Zett.	r.
1828	E. satyrata Hübn.	C.r.
1830	E. absinthiata Clerck	(75)
1831	E. goossensiata Nab.	l.r. (75)
1832	E. assimilata Doubl.	sc. (75)
1834	E. vulgata vulgata Haw.	(75)
1835	E. tripunctaria H-S.	sc. (75)
1837	E. subfuscata Haw.	occ. (75)
1838	E. icterata subfulvata Haw.	w. (75)
1839	E. succenturiata Linn.	w. (75)
1842	E. simpliciata Haw.	C. r.
1844	E. indigata Hübn	L.l. C.sc. (75) (N.S.)
1846	E. nanata anguista Prout	(75)
1849	E. flaxinata Crewe (innotata Hufn.)	sc. (75)
1851	E. virgaureata Doubl.	sc. (75)(N.S.)
1852	E. abbreviata Steph.	w. (75)
1853	E. dodoneata Guen.	Cr. (75) (N.S.)
1854	E. pusillata pusillata D. & S.	occ. (75)
1856	E. lariciata Frey.	C.r. (75)
1857	E. tantillaria Bois.	C.sc.l. (75)
1858	Chloroclystis v-ata Haw.	(75)
1859	C. chloerata Mab.	L.r. (75) (N.S.)
1860	C. rectangulata Linn.	w. (75)
1862	Gymnoscelis rufifasciata Haw (pumilata Hübn.)	(75)
1864	Chesias legatella D & S	
1865	C. rufata rufata Fabr.	v.l.r (59) (N.S.)
1866	Carsia sororiata anglica Prout	v.I.r. (N.S.).
1867	Aplocera plagiata plagiata Linn.	
1868	A. efformata Guen.	C.l.r.
1870	Odezia atrata Linn.	v.l.
1872	Discoloxia blomeri Curt.	L.sc.
1873	Venusia cambrica Curt.	l.un.
1874	Euchoeca nebulata Scop.	v.l.sc
1875	Asthena albulata Hufn.	l.sc.
1876	Hydrelia flammeolaria Hufn.	l.un. (65)
1877	H. sylvata D. & S.	l.r. (N.S.)
1879	Lobophora halterata Hufn.	un. (51)
1880	Trichopteryx polycommata D. & S.	L.l.
1881	T. carpinata Borkh.	un.
1882	Pterapherapteryx sexalata Retz.	C.v.r.
1883	Acasis viretata Hübn.	v.l.un. (69) (73)

ENNOMINAE

1884	Abraxas grossulariata Linn.	
1885	A. sylvata Scop.	v.l. (51) (55)
1887	Lomaspilis marginata Linn.	
1888	Ligdia adustata D. & S.	v.l.r.
1890	Semiothisa alternaria Hübn.	north L.l.sc.
1893	S. liturata Cletrk.	
1894	S. clathrata clathrata Linn.	l.un. (51)
1896	S. brunneata Thunb.	north L. v.l.sc.
1897	S. wauaria Linn.	
1902	Petrophora chlorosata Scop.	
1903	Plagodis pulveraria Linn.	l.r.
1904	P. dolabraria Linn.	un. (51)
1906	Opisthograptis luteolata Linn.	
1907	Epione repandaria Hufn.	v.l.
1909	Pseudopanthera macularia Linn.	L.v.l.
1910	Apeira syringaria Linn.	l.sc.(55)
1912	Ennomos quercinaria Hufn.	v.l.r. (69)
1913	E. alniaria Linn.	
1914	E. fuscantaria Haw.	un.
1915	E. erosaria D. & S.	l.un. (51)
1917	Selenia dentaria Fabr. (bilunaria Esp.)	
1918	S. lunularia Hübn.	l.sc. (51)
1919	S. tetralunaria Hufn.	un. (51) (55)
1920	Odontopera bidentata Clerck.	
1921	Crocallis elinguaria Linn.	
1922	Ourapteryx sambucaria Linn.	
1923	Colotois pennaria Linn.	
1925	Apocheima hispidaria D. & S.	C.l.r.
1926	A. pilosaria D. & S.	
1927	Lycia hirtaria Clerck	C.l.r. (59)
1928	L. zonaria britannica Harr	coastal. v.l.r.(69) (73) (N.S.)
1930	Biston strataria Hufn.	occ. (55)
1931	B. betularia Linn.	
1932	Agriopis leucophaearia D. & S.	w.un.
1933	A. aurantiaria Hübn.	l.un.
1934	A. marginaria Fabr.	l.
1935	Erannis defoliaria Clerck.	l.
1936	Menophra abruptaria Thunb.	l.sc. (52) (65)
1937	Peribatodes rhomboidaria D. & S.	
1938	Selidosema brunnearia scandinavaria Staud.	north. L.l.r
1940	Deileptenia ribeata Clerck.	l.sc. (N.S.)
1941	Alcis repandata repandata Linn.	
1945	Cleorodes lichenaria Hufn.	north L.l.sc.
1947	Ectropis bistortata Goeze	l.un. Note in text
1948	E. crepuscularia D. & S.	l.un Note in text
1949	E. consonaria Hübn.	north L.v.l.r.

1951	Aethalura punctulata D.& S	l. (69)
1952	Ematurga atomaria atomaria Linn.	l.
1954	Bupalus piniaria Linn.	
1955	Cabera pusaria Linn.	
1956	C. exanthemata Scop.	
1957	Lomographa bimaculata Fabr.	l.r.
1958	L. temerata D. & S.	
1960	Theria rupicapraria D. & S.	
1961	Campaea margaritata Linn.	
1962	Hylaea fasciaria Linn.	L.l. (51)
1964	Gnophos obscurata D. & S.	l.r.
1969	Dyscia fagaria Thunb.	v.l.r. (N.S.)
1970	Perconia strigillaria Hübn.	l.r. (N.S.)

SPHINGOIDEA

SPHINGIDAE

SPHINGINAE

1972	Agrius convolvuli Linn.	m.
1973	Acherontia atropos Linn.	occ.m. (51) (55) (65)
1979	Mimas tiliae Linn.	(52) (55)
1980	Smerinthus ocellata Linn.	
1981	Laothoe populi Linn.	

MACROGLOSSINAE

1984	Macroglossum stellatarum Linn.	m. (59)
1987	Hyles gallii Rott.	L.m.sc. (65) C. (SJ 87)
1990	H. lineata livornica Esp.	C.m.r. (51)
1991	Deilephila elpenor Linn.	
1992	D. porcellus Linn.	l.coastal (59)
1993	Hippotion celerio Linn.	L.m.v.r.

NOTODONTOIDEA

NOTODONTIDAE

1994	Phalera bucephala Linn.	l.
1995	Cerura vinula Linn.	sc.
1996	Harpyia biscuspis Borkh.	sc. (65) (N.S.)
1997	H. furcula Clerck.	un.
1998	H. bifida Brahm	l.
2000	Notodonta dromedarius Linn.	
2003	Eligmodonta ziczac Linn.	
2005	Peridea anceps Goeze	L.sc.
2006	Pheosia gnoma Fabr.	
2007	P. tremula Clerck	
2008	Ptilodon capucina Linn.	
2010	Odontosia carmelita Esp.	L.v.sc.
2011	Pterostoma palpina Clerck.	l.sc. (59)
2014	Drymonia dodonea D. & S.	l.un.

2015	D. ruficornis Hufn.	l.sc.
2019	Clostera curtula Linn.	C. vagrant
2020	Diloba caeruleocephala Linn.	

NOCTUOIDEA

LYMANTRIIDAE

2026	Orgyria antiqua Linn.	
2027	Dasychira fascelina Linn.	coastal L.v.l. (55)
2028	D. pudibunda Linn.	
2029	Euproctis chrysorrhoea Linn.	L.v.l.r.
2030	E. similis Fuess.	
2031	Leucoma salicis Linn.	1. (55)
2033	Lymantria monacha Linn.	C.v.r vagrant (55)

ARCTIIDAE

LITHOSIINAE

2035	Thumatha senex Hübn.	l.r.
2038	Nudaria mundana Linn.	Lv.l.un. C.v.sc.
2039	Atolmis rubricollis Linn.	l.r. (N.S.)
2040	Cybosia mesomella Linn.	v.l.
2044	Eilema griseola Hübn.	C.l.r. (Ellis List 19c.)
2047	E. complana Linn.	r.
2049	E. depressa Esp.	L.1.r.
2050	E. lurideola Zinck.	
2051	Lithosia quadra Linn.	m.v.r. (65)

ARCTIINAE

2056	Parasemia plantaginis plantaginis Linn.	v.l. r.
2057	Arctia caja Linn.	
2059	Diacrisia sannio Linn.	L.l.C.l.sc.
2060	Spilosoma lubricipcda Linn.	
2061	S. luteum Hufn.	
2063	Diaphora mendica Clerck.	w.un. (51)
2064	Phragmatobia fuliginosa fuliginosa Linn.	w.un. (52)
2069	Tyria jacobaeae Linn.	

NOLIDAE

2077	Nola cucullatella Linn.	w.un.
2078	N. confusalis H-S.	l.r.

NOCTUIDAE

NOCTUINAE

2080	Euxoa obelisca grisea Tutt.	v.r. coastal (N.S.)
2081	E. tritici Linn.	w.sc. (59)
2082	E. nigricans Linn.	w.un.
2083	E. cursoria Hufn.	coastal v.l.r.(69) (N.S.)
2085	Agrotis vestigialis Hufn.	coastal l.un.

2087	A. segetum D. & S.	
2088	A. clavis Hufn.	sc.
2089	A. exclamationis Linn.	
2090	A. trux lutilgera Steph.	v.l.r. (N.S.)
2091	A. ipsilon Hufn	w.un. (51)
2092	A. puta puta Hübn.	un.l. (52)
2093	A. ripae Hübn.	coastal L.l.sc.
2098	Axylia putris Linn.	
2099	Actebia praecox Linn.	coastal. l.un. (59) (N.S.)
2102	Ochropleura plecta Linn.	
2104	Standfussiana lucernea Linn.	l.sc
2105	Rhyacia simulans Hufn.	coastal l.r.(N.S.)
2107	Noctua pronuba Linn.	
2109	N. comes Hübn.	
2110	N. fimbriata Schreber	
2111	N. janthina D. & S.	(51)
2112	N. interjecta caliginosa Schaw.	sc. (59)
2113	Spaelotis ravida D. & S.	v.r.m.
2114	Graphiphora augur Fabr.	
2117	Paradiarsia glareosa glareosa Esp.	un. (51)
2118	Lycophotia porphyrea D. & S.	l. (52)
2119	Peridroma saucia Hübn.	un.m.
2120	Diarsia mendica mendica Fabr.	
2121	D. dahlii Hübn.	sc.
2122	D. brunnea D. & S.	un.
2123	D. rubi View	
2126	Xestia c-nigrum Linn.	
2127	X. ditrapezium D. & S.	sc. (59)
2128	X. triangulum Hufn.	
2130	X. baja D. & S.	
2131	X. rhomboidea Esp.	C.l.r. (N.S.)
2132	X. castanea Esp.	w.un. (59)
2133	X. sexstrigata Haw.	
2134	X. xanthographa D. & S.	
2135	X. agathina agathina Dup.	l.un. (69)
2136	Naenia typica Linn.	
2137	Eurois occulta Linn.	m.sc. (51)
2138	Anaplectoides prasina D. & S.	l.sc.
2139	Cerastris rubicosa D. & S.	un.l.
2140	C. leucographa D. & S.	north L.v.l.sc.
	HADENINAE	
2142	Anarta myrtilli Linn.	l.
2145	Dicestra trifolii Hufn.	l.un (59)
2147	Hada plebeja Linn.	l.un.
2149	Polia trimaculosa Esp.	l.r. (N.S.)
2150	P. nebulosa Hufn.	

2152	Sideridis albicolon Hübn.	coastal r. (55) (N.S.)
2154	Mamestra brassicae Linn.	
2155	Melanchra persicariae Linn.	(52)
2156	Lacanobia contigua D. & S.	north L.v.sc.
2157	L. w-latinum Hufn.	L.r.
2158	L. thalassina Hufn.	
2159	L. suasa Schiff.	un. coastal.
2160	L. oleracea Linn.	
2162	Papestra biren Goeze, (glauca Hübn.)	l.r.
2163	Melanchra pisi Linn.	
2164	Hecatera bicolorata Hufn. (serena D. & S.)	l. (51)
2166	Hadena rivularis Fabr. (cucubali D. & S.)	
2167	H. perplexa perplexa D. & S. (lepida Esp.)	l.un. (52)
2170	H. compta D. & S.	C.r.
2171	H. confusa Hufn. (conspcrsa D. & S.)	l.r. (55)
2173	H. bicruris Hufn.	
2176	Cerapteryx graminis Linn.	
2177	Tholera cespitis D. & S.	l. (52)
2178	T. decimalis Poda.	un.
2179	Panolis flammea D. & S.	l.
2182	Orthosia cruda D. & S.	
2183	O. miniosa D. & S.	r.(51)
2184	O. opima Hufn.	l.r.
2185	O. populeti Fabr.	v.l. (N.S.)
2186	O. gracilis D. & S.	
2187	O. cerasi Fabr.	
2188	O. incerta Hufn	
2189	O. munda D. & S.	
2190	O. gothica Linn.	
2191	Mythimna turca Linn.	l.r. poss. vagrant (65) (N.S.)
2192	M. conigera D. & S.	
2193	M. ferrago Fabr.	
2194	M. albipuncta D. & S.	C. m.v.r.
2195	M. vitellina Hübn.	C. m.v.r.
2197	M. straminea Treits.	r.l.
2198	M. impura impura Hübn.	
2199	M. pallens Linn.	
2201	M. litoralis Curt.	coastal. l.sc. (N.S.)
2204	M. obsoleta Hübn.	v.r (N.S.)
2205	M. comma Hübn.	
2209	M. flammea Curt.	C. vagrant v.r. (NS)
	CUCULLIINAE	
2211	Cucullia absinthii Linn.	sc. (55)
2214	C. chamomillae D. & S.	occ. (51)
2216	C. umbratica Linn.	
2221	Shargacucullia verbasci Linn.	l.occ.

2225	Brachylomia viminalis Fabr.	l.un.
2227	Brachionycha sphinx Hufn.	l.r. (51)
2229	Dasypolia templi Thunb.	v.l.r. (51) (N.S.)
2231	Aporophyla lutulenta lutulenta D. & S.	l.un. (52)
2232	A. nigra Haw.	l.un. (51)
2233	Lithomoia solidaginis Hübn.	l.r. (65) (INS.)
2235	Lithophane semibrunnea Haw.	l.v.r. (59)
2236	L. socia Hufn.	l. (59) (73) (N.S.)
2237	L. ornitopus lactipennis Dadd.	un. (69)
2240	L. leautieri Boisd.	now w.
2241	Xylena vetusta Hübn.	w.sc.
2242	X. exsoleta Linn.	w.sc. (N.S.)
2243	Xylocampa areola Esp.	
2245	Allophyes oxyacanthae Linn.	
2247	Dichonia aprilina Linn.	
2248	Drybotodes eremita Fabr. (protea D. & S.)	
2250	Blepharita adusta Esp.	un.
2254	Antitype chi Linn.	un. (51)
2255	Polymixis lichenea lichenea Hübn.	coastal. 1. (55)
2256	Eupsilia transversa Hufn.	
2258	Conistra vaccinii Linn.	
2259	C. ligula Esp.	l.un.
2262	Agrochola circellaris Hufn.	
2263	A. lota Clerk,	un.
2264	A. macilenta Hübn.	un.
2265	A. helvola Linn.	l.un.
2266	A. litura Linn.	
2267	A. lychnidis D. & S.	
2268	Parastichtis suspecta Hübn.	C.l.un.
2269	Atethmia centrago Haw. (xerampelina Hübn.)	sc. (52)
2270	Omphalocelis lunosa Haw.	
2271	Xanthia citrago Linn.	v.l.un. (59)
2272	X. aurago D. & S.	sc. (65)
2273	X. togata Esp. (lutea Strom.)	
2274	X. icteritia Hufn.	
2275	X. gilvago D. & S.	l.v.sc. (59)
	ACRONICTLNAE	
2278	Acronicta megacephala D. &	un. (51)
2280	A. leporina Linn.	sc.
2281	A. alni Linn.	occ. (52)
2283	A. tridens D. & S.	see text (59)
2284	A. psi Linn	
2286	A. menyanthidis menyanthidis Esp.	l.r.
2289	A. rumicis Linn.	
2291	Craniophora ligustri D. & S.	L.v.r.
2293	Cryphia domestica Hufn. (perla D. & S.)	

	AMPHIPYRINAE	
2297	Amphipyra pyramidea pyramidea Linn.	un. (55) (59)
2298	A. berbera svenssoni Fletch.	un.
2299	A. tragopoginis Clerck.	
2300	Mormo maura Linn.	l.
2301	Dypterygia scabriuscula Linn.	occ.
2302	Rusina ferruginea Esp.	w. (52)
2303	Thalpophila matura Hufn.	
2304	Trachea atriplicis Linn.	C. v.r.vagrant
2305	Euplexia lucipara Linn.	
2306	Phlogophora meticulosa Linn.	
2311	Ipimorpha retusa Linn.	v.r.l. (N.S.)
2312	I. subtusa D. & S..	l.sc. (52)
2313	Enargia paleacea Esp.	C. v.r.
2314	Parastichtis ypsillon D. & S.	v.1
2316	Cosmia affinis Linn.	C. l.r.
2318	C. trapezina Linn	
2319	C. pyralina D. & S.	r.
2320	Hyppa rectilinea Esp.	north L.l.v.r.
2321	Apamea monoglypha Hufn.	
2322	A. lithoxylaea D. & S.	
2323	A. sublustris Esp.	l.r. (N.S.)
2325	A. oblonga Haw.	coastal l.r. (N.S.)
2326	A. crenata Hufn.	
2327	A. characterea Hufn. (epomidion Haw.)	sc.
2329	A. furva britannica Cock.	sc.
2330	A. remissa Hübn.	
2331	A. unanimis Hübn.	
2333	A. anceps D. & S.	r.
2334	A. sordens Hufn.	
2335	A. scolopacina Esp.	C. w.sc.
2336	A. ophiogramma Esp.	l.sc. (52)
2337	Oligia strigilis Linn.	
2338	O. versicolor Borkh.	sc.(59)
2339	O. latruncula D. & S.	un.(59)
2340	O. fasciuncula Haw.	
2341	Mesoligia furuncula D. & S.	un. (52)
2342	M. literosa Haw.	(65)
2343	Mesapamea secalis Linn.	
	M. secalella Remm.	see text
2344	Photedes captiuncula expolita Staint.	L.l.r.
2345	P. minima Haw.	un. (52)
2350	Chortodes pygmina Haw.	l.un. (52)
2352	Eremobia ochroleuca D. & S.	l.r.
2353	Luperina testacea D. & S.	
2354	L. nickerlii gueneei Doubl.	coasta1 v.r.l.
2357	Amphipoea lucens Frey.	north l.r.

2358	A. fucosa paludis Tutt.	sc.
2359	A. crinanensis Burr.	north L.v.r.
2360	A. oculea Linn.	
2361	Hydraecia micacea Esp.	
2362	H. petasitis Doubl.	l.sc. (52) (N.S.)
2364	Gortyna flavago D. & S.	
2367	Celaena haworthii Curt.	r.
2368	C. leucostigma leucostigma Hübn.	l.sc. (65)
2369	Nonagria typhae Thunb.	(51)
2371	Archanara dissoluta Treits.	v.l. (N.S.)
2375	Rhizedra lutosa Hübn.	l.
2377	Arenostola phragmitidis Hübn.	v.l.r.
2379	Coenobia rufa Haw.	l.sc. (59)
2380	Charanyca trigrammica Hufn.	
2381	Hoplodrina alsines Brahm.	un. (59)
2382	H. blanda D. & S.	l.un. (55)
2385	Spodoptera exigua Hübn.	m.r.
2387	Caradrina morpheus Hufn.	
2389	C. clavipalpis Scop.	
2391	Chilodes maritimus Tausch.	l.r. (N.S.)
2394	Stilbia anomala Haw.	L.l.sc.
2397	Panemeria tenebrata Scop.	
	HELIOTHIDINAE	
2399	Pyrrhia umbra Hufn.	coastal. r.l. (59)
2400	Helicoverpa armigera Hübn.	m.v.r.
2403	Heliothis peltigera D. & S.	m.v.r.
	ACONTIINAE	
2408	Eublemma parva Hübn.	m.r.
2410	Protodeltote pygarga Hufn.	C.l.r.
2412	Deltote uncula Clerck.	L.v.l. (59)
	CHLOEPHORINAE	
2421	Bena bicolorana Fuess.	v.sc. (52) (55)
2422	Pseudoips prasinana britannica Warr.	w.un.
	SARROTHRIPINAE	
2423	Nycteola revayana Scop.	north L.l. C.l.r.
2425	Colocasia coryli Linn.	L.r.
	PLUSIINAE	
2428	Chrysodeixis chalcites Esp.	L.v.r.m.adventive
2434	Diachrysia chrysitis Linn.	
2437	Polychrysia moneta Fabr.	
2439	Plusia festucae Linn.	(69)
2440	(P. putnami gracilis Lempke)	see text (69)
2441	Autographa gamma Linn.	
2442	A. pulchrina Haw.	
2443	A. jota Linn.	

2444	A. bractea D. & S.	l.un. (55)
2447	Syngrapha interrogationis Linn.	v.r.1.
2449	Abrostola triplasia Linn.	
2450	A. tripartita Hufn.	
	CATOCALINAE	
2452	Catocala nupta Linn.	l.un. (59)
2462	Callistege mi Clerck.	v.l.un.
2463	Euclidia glyphica Linn.	l.un.
	OPHIDERINAE	
2466	Lygephila pastinum Treit.	vagrant
2469	Scoliopteryx libatrix Linn.	
2470	Phytometra viridaria Clerck.	l.r.
2473	Laspeyria flexula D. & S.	C.v.r.l.
2474	Rivula sericealis Scop.	l.un. (55)
2475	Parascotia fuliginaria Linn.	v.r. vagrant (N.S.)
	HYPENINAE	
2476	Hypena crassalis Fabr. (fontis Thunb.)	v.l.r. (59) (N.S.)
2477	H. proboscidalis Linn.	
2484	Schrankia costaestrigalis Steph.	v.l.sc. (69)
2485	Hypenodes turfosalis Wocke. (humidalis Doubl.)	v.l.r. (N.S.)
2489	Zanclognatha tarsipennalis Treits.	(51)
2492	Herminia grisealis D. & S.	

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Rules of the Society

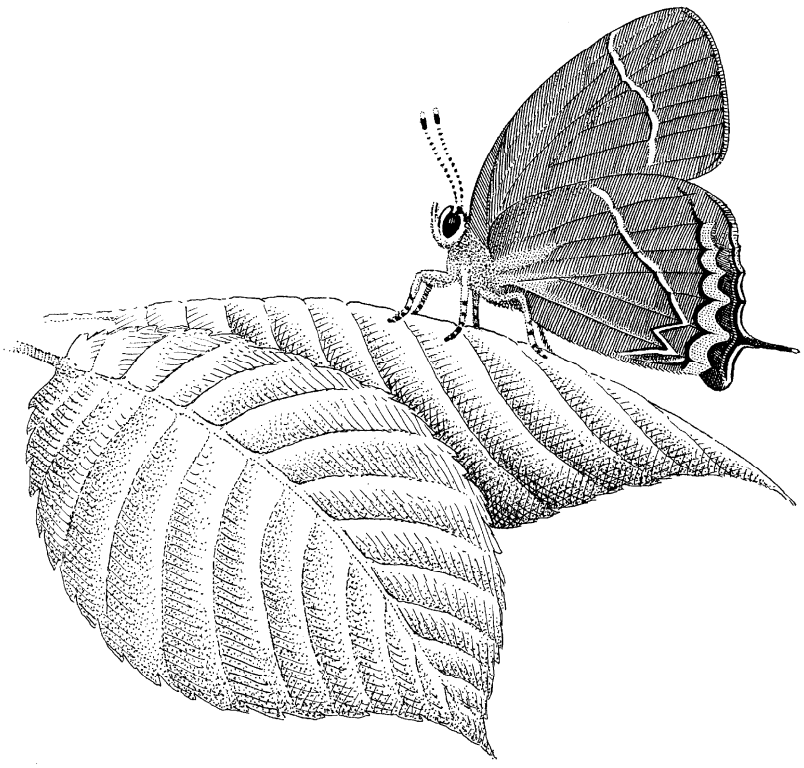
These updated rules were adopted at the Annual General Meeting of the Lancashire and Cheshire Fauna Society on 1st March 2003.

1. Title: The Society shall be called the Lancashire and Cheshire Fauna Society
2. Object: The aims of the society shall be to promote wildlife conservation in Lancashire, Cheshire and Merseyside through,
   a) the publishing of an annual bird report covering Lancashire and North Merseyside,
   b) the recording in published form of other authentic faunal observations in the counties of Lancashire, Merseyside and Cheshire,
   c) the stimulation and support of such activities as shall further the recording.
3. Membership: Membership of the society shall be deemed to operate from the receipt by the Treasurer of an application form together with the current subscription.
4. Subscription: The subscription shall be a minimum of five pounds per annum for individual members and ten pounds per annum for corporations, societies and the like. The subscription for the current year shall be due on the 1st January.
5. Publications: Each member shall be entitled to one free copy of each report issued by the society provided their subscriptions are not more than twelve months in arrears. The Committee shall reserve the right, however, to make a charge for special additional publications. Surplus copies of publications shall be offered for sale to members or non-members at a price to be determined by the committee.
6. Officers and Committee: The officers of the society shall be a Chairperson, a Secretary, a Treasurer, Group Recorders and Report Editors. These Officers together with up to three ordinary members shall constitute the Committee. Four members of the Committee shall constitute a quorum. All officers and committee members shall be subject to election at the Annual General Meeting.
7. Accounts: The Treasurer will be responsible for preparing a statement of financial activity each year (Jan 1st to Dec 31st). These accounts will be independently audited before being presented at the AGM. The auditor shall be elected annually at the Annual General Meeting.
8. Meetings:
   (a) The Annual General Meeting shall be held on the first Saturday in March when the Secretary and the Treasurer shall give a report of the work of the society. At the discretion of the Committee, any further general meetings may be called.
   (b) The Committee shall meet at least once a year for the management of the business of the society.
9. Membership List: A file shall be kept recording the names, addresses and contact details of members, together with the date of their admission to the society and information regarding payments, payment type, membership type. In line with the Data Protection Act, this

information will be held with the consent of the member and will not be divulged to any other individual or organisation.

10. Resignations and Lapse of Membership: Any member wishing to withdraw from the society shall give notice in writing to the Secretary before the end of the year concerned. The Treasurer shall send reminders to members whose subscriptions are more than twelve months in arrears. Membership shall be deemed to have lapsed if subscriptions are not subsequently paid.

11. Amendment of Rules: Amendments to these rules shall only be made after a majority vote at an Annual General Meeting or at an Extraordinary General Meeting to be called for the purpose. Notifications of intended amendments shall be made in writing to each member. At least four weeks prior to the date of such a general meeting.



12. Dissolution of the Society: If the Committee decides that it is necessary or advisable to dissolve the Society, it shall call a meeting of the members of which not less than 21 days notice (stating the terms of the resolution to be proposed) shall be given. If the proposal is confirmed by a two-thirds majority of those present and voting, the Committee shall have powers to realise any assets held by or on behalf of the Society. Any assets remaining after the satisfaction of any proper debts and liabilities shall be given or transferred to such other charitable institution or institutions having objects similar to the objects of the Society as determined by the members of the Society. Failing that, assets shall be applied for some other charitable purpose. A copy of the statement of accounts or of account and statement for the final accounting period of the Society must be sent to the Commissioners.