

THE REDISCOVERY OF THE 5-SPOT LADYBIRD  
(*COCCINELLA 5-PUNCTATA* L.) (COL., COCCINELLIDAE)  
IN BRITAIN

BY M.E.N. MAJERUS & A.P. FOWLES

The 5-spot ladybird (*Coccinella 5-punctata* L.) is one of the rarest of the British ladybirds. Indeed, until 1987, published records of it only existed for five previous years and at four locations (see Table 1). The

TABLE 1. - BRITISH RECORDS OF 5-SPOT LADYBIRDS PRIOR TO 1987 (COURTESY OF DR J. MUGGLETON, AND THE COCCINELLIDAE DISTRIBUTION MAPPING SCHEME).

10 km square	Location	Date
SX56	Devon/Cornwall border	pre-1913
NJ02	Spey Valley, Inverness-shire	1912
NJ02	Spey Valley, Inverness-shire	1935
SY29	South Dorset	circa 1941
NH90	Spey Valley, Inverness-shire	1953

See also last item in Table 2.

last of these published records was in 1953. Consequently, by 1986, a number of entomologists (including M.E.N.M.) considered the species was probably extinct in Britain. Therefore, it came as something of a surprise when the 5-spot was rediscovered in April 1987. The find was even more noteworthy because, whereas all the previous records have been from the Spey Valley or the South of Devon and Dorset, the rediscovery was made in West Wales. In the middle of April 1987, two entomologists discovered 5-spot independently. On 16th April, I.K. Morgan caught one in flight over bare shingle on the banks of the Afon Tywi at Llanwrda, Carms. (SN/73). On 19 April, Adrian Fowles (together with A.O. Chater and K. Catley) found two specimens under a stone on unstable shingles alongside the Afon Ystwyth (SN/67), while carrying out a general invertebrate survey of the area. In subsequent weeks the 5-spot was found at a further eight sites on the Afon Ystwyth (SN/57 and SN/67) and the Afon Rheidol (SN/68). Generally only a few insects were seen at a time, but, at one site over fifty were recorded on several individual visits. A full list of the records in Wales in 1987 is given in Table 2.

The largest number of records came from a shingle bank on a stretch of backwaters at Glanrafon, Llanbadarn on the Afon Rheidol. The first four, discovered at this site, were sunbathing on flood debris caught up amongst gorse bushes (*Ulex europaeus*). However, during the same visit

a further 35 individuals were recorded, all but one of which were found on stunted brooms (*Cytisus scoparia*) growing on a thin strip of unstable shingle in the flood zone of the river. These brooms were generally only 12–18 inches high. The ladybirds appeared to be feeding on aphid nymphs in the leaf axils of the plants. Strangely, none were found on the much larger mature and healthy broom bushes, growing in stable communities, a few metres away.

TABLE 2. – RECORDS OF 5-SPOT LADYBIRDS REPORTED IN BRITAIN DURING 1987 (INCLUDES ALL RECORDS RECEIVED BY NOVEMBER 1987).

10 km Square	Site	Date	Number	Habitat	Stage	Notes
SN73	a	16.iv	1	River bank	Adult	Caught in flight
SN67	b	19.iv	2	River shingle	"	Under stones
SN68	c	22.iv	3	" "	"	On bare shingle
SN68	d	23.iv	39	" "	"	On broom bushes
SN73	a	24.iv	1	" "	"	" " "
SN68	e	24.iv	1	" "	"	" " "
SN57	f	25.iv	2	" "	"	On prostrate, willow bushes
SN68	d	26.iv	c.50	" "	"	On broom bushes
SN67	f	26.iv	1	" "	"	Walking across path
SN68	d	27.iv	c.50	" "	"	On broom bushes, matings observed
SN68	d	28.iv	c.50	" "	"	" " " "
SN68	d	30.iv	c.40	" "	"	" " " "
SN68	d	4.v	3	" "	"	On broom bushes
SN57	h	4.v	1	" "	"	On bare shingle
SN68	i	6.v	2	" "	"	" " "
SN68	j	7.v	2	" "	"	" " "
SN68	d	7.v	1	" "	"	On broom bushes
SN73	k	8.v	3	" "	"	" " "
SN68	d	9.v	2	" "	"	On bare shingle
SN57	h	9.v	2	" "	"	" " "
SN68	d	15.v	3	" "	"	On broom bushes
SN73	a	21.v	1	" "	"	On bare shingle
SN57	h	24.v	2	" "	"	" " "
SN68	l	27.v	1	" "	"	" " "
NJ13	–	28.v	1	Shingle	"	Shingle of old river bed
SN68	l	20.vi	several	River shingle	Larvae	Roaming on bare shingle
SN68	d	23.vii	2	" "	Adult	On bare shingle
SN68	l	1.viii	5	" "	"	2 on knapweed, others on shingle
SN68	l	1.viii	2	" "	Larvae	On willow bushes
SN73	k	19.viii	14	" "	Adult	On creeping thistle ( <i>Cirsium arvense</i> )
SN57	h	29.viii	2	" "	"	On angelica ( <i>Angelica sylvestris</i> )
SN68	l	26.ix	2	" "	"	Bare shingle
SN57	h	11.x	2	" "	"	" "

(5-spot ladybirds taken by A.P. Fowles in pitfall traps).

SN68	l	24.v-8.vi	1	River shingle	Larva	Bare shingle
SN68	l	24.v-8.vi	1	" "	Adult	" "
SN68	l	8-20.vi	4	" "	Larvae	" "
SN57	h	8-20.vi	4	" "	" "	" "
SN68	l	20.vi-4.vii	1	" "	Larva	" "
SN68	l	1-15.viii	1	" "	" "	" "
(SN84)		1.v.1974	1	River bank	Adult	No further details

(12 pitfall traps were in continuous operation at SN68 site 1 and 11 at SN57 site h from 9 May-26 Sept.)

The site letters a-l inclusive indicate different locations when 5-spots were found at more than one place within the same 10 km square.

The 5-spots remained common at this site for over a week, over 50 individuals being recorded on several occasions, and matings being observed during visits on 27th, 28th and 30th April. The ladybirds appear to have begun dispersing from the broom bushes in early May, and on 4th May only three were seen. Thereafter, only small numbers were found at a variety of sites during the rest of May, and by June the adults had apparently disappeared completely. Almost all the 5-spots seen in April and May were found either on bare river shingle or on broom bushes growing in the unstable shingle zone. The only exception was the finding of two adults on prostrate bushes of the willow *Salix cinerea*, recorded on 25th April at Pont Llanfarian, Afon Ystwyth (SN/57).

The reduction in numbers of 5-spots on the brooms at the beginning of May may have been the result of ladybirds dispersing, possibly to seek other suitable oviposition sites. Alternatively the decline through May, and their final disappearance by the end of that month, may have been due to a natural reduction in the adult population as the overwintered adults died off.

A number of ladybird larvae, later identified as 5-spots, were seen "roaming about on the shingle banks" on 20th June. Examination of catches from pitfall traps which were in operation from 9th May to 26th September on two shingle sites on the Afon Ystwyth, and the Afon Rheidol also revealed 5-spot larvae (see Table 2). These results show that larvae of the 5-spot are present on the shingle banks from May through until August. No more adults were recorded until 23rd July, when two adults were found on the shingle at the Glanrafon site. More adults were found a week later, on 1st August, a little way downstream. Some of the adults were crawling across shingle, others were on knapweed (*Centaurea nigra*), temporarily flooded in a few inches of water at the edge of the Afon Rheidol. On the same visit, 5-spot larvae were found by beating willows growing in the shingle. Through August and September the number of adults seen began to increase again.

A number of other species of ladybird have also been recorded on the shingle banks: 7-spot, 11-spot, cream-spot, 10-spot, 2-spot and 24-spot.

The 5-spot was also recorded from the Spey Valley in 1987. In late May, Mrs J.S. Duncan sent what she described as "two unusual ladybirds" to the Cambridge Ladybird Survey. One of them was an unusual form of the 11-spot (*Coccinella 11-punctata*) with the posterior pairs of spots on the elytra fused. The other was a female 5-spot. Mrs Duncan wrote that both ladybirds "were found on the evening of 28th May on shingle in the middle of a rough grass field, that centuries ago had been the river bed of the Spey. The field usually has cattle over-wintering in it, so there are lots of straw bales around it. The site also had about 40 different species of wild flowers and many grasses, brooms and alders." This site (in 10 km square NJ13) is not far from the previously recorded sightings of the 5-spot in Scotland (see Table 1), so it is likely that the species has existed continuously in the Spey Valley for many years.

In Wales, the species seems to be fairly well established, although it is apparently restricted to a very specific habitat, namely river shingle. On the continent, the 5-spot is generally distributed, often common, and seems to be rather eurytopic. It is found in a wide range of habitats, including conifer and deciduous woodland, grassland, and is often common on urban and suburban nettlebeds (M.E.N.M. pers. obs.). That a species becomes highly habitat specific towards the edge of its range is not unusual. The swallowtail butterfly (*Papilio machaon* L.), which is widely distributed on the continent in many habitats, is confined to the Fenlands of the Norfolk Broads in Britain. It seems that if conditions are more adverse to a species towards the edge of its range, it is often only able to survive in these peripheral areas of its range if it is adapted to a specific and especially favourable habitat.

The nature of the habitat in which the 5-spot has been found in Wales, suggests that it is not likely to be at risk from building development. Presumably, as it is confined to river shingles, the species must have evolved a strategy to survive both natural and man-induced changes in water levels, and even periodic winter flooding. However, the future of at least some colonies may be under some threat. At two of the Afon Tywi sites the extensive areas of shingle are exploited for shingle extraction. How detrimental such activities may be for the 5-spot is difficult to determine. Indeed, although such operations may appear destructive at least in the short term, over a longer period they could be beneficial in maintaining open, only partly vegetated areas of shingle bank. These areas are colonised by plants such as broom and creeping thistle which are frequently infested by large numbers of aphids, and so may be the optimal habitats for 5-spots in Wales. It may also be noted that the effects of strong flooding, as recently witnessed on the Afon Tywi, are also probably beneficial in the long term, in recreating and redistributing large expanses of fresh shingle (I.K. Morgan, pers. comm.).

Perhaps the greatest threat to the 5-spot comes from the straightening

and strengthening of water courses through the removal of meanders and bank stabilisation by water authorities in ignorance of the conservation importance of shingle banks. In fact, the fauna of shingle banks is largely unexplored nationally, but does include a number of highly specialised invertebrates that are nationally rare because of the restricted nature of the habitat to which they are specifically adapted.

The interest engendered by the finding of 5-spots in Dyfed has brought to light another, previously unreported record of the species from mid-Wales. Mr David Davies has informed us, via Ian Morgan, that he found a specimen on the banks of the Afon Brân near Cynghordy (SN 809402) on 1st May 1974. The Afon Brân is a tributary of the Afon Tywi, and is also apparently a site with much shingle, and varied scrub and alder carr. It is hoped that this report of the findings of the 5-spot in 1987 may encourage other coleopterists who have found the species in the past to publish their records of this rare beetle, or at least pass such records on to M.E.N.M. of the Cambridge Ladybird Survey, or to Dr John Muggleton who administers the Coccinellidae Distribution Map Scheme.

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M.E.N.M., Department of Genetics, University of Cambridge, Downing Street, Cambridge, CB2 3EH.

A.P.F., c/o Nature Conservancy Council, Plas Gogerddan, Aberystwyth, Dyfed, SY23 3EE.

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*Corticaria linearis* (Payk.) (Col., Lathridiidae) at Windsor. — This is a northern species with its British centre of distribution in Scotland. Most captures have been in Strathspey, where, though scarce, it has occurred in fair numbers at times, in association with pine. As an English species it is very little known, but Mr C. Johnson has it from Cannock Chase, Staffs. In G.C. Champion's collection there were two specimens from Killarney, Co. Kerry — perhaps the sole Irish record. Notwithstanding that *C. linearis* was added to our list from a southern locality (Bradfield, Berks. — Joy), it transpires that this was almost certainly in error; for on examining one of Joy's specimens from there in the British Museum (Nat. Hist.) many years back, I found to my surprise that it was not *linearis* but *dubia* Dajoz (*eppelsheimi* auct. Brit. nec Rtt.). This is probably therefore true of Joy's second specimen also, and unless it is found to be genuine I consider the record should be transferred to *C. dubia*.

However, *C. linearis* is not quite absent from southern England, since I can report an authentic record for Berkshire: on August 4th, 1965, I took an example in Windsor Great Park on a piece of dead oak, towards evening, when a number of insects were in flight. There was no pine or fir in sight, though there had earlier been a few scattered pines in that part of the park, near Bishop's Gate. — A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG: July 29th, 1987