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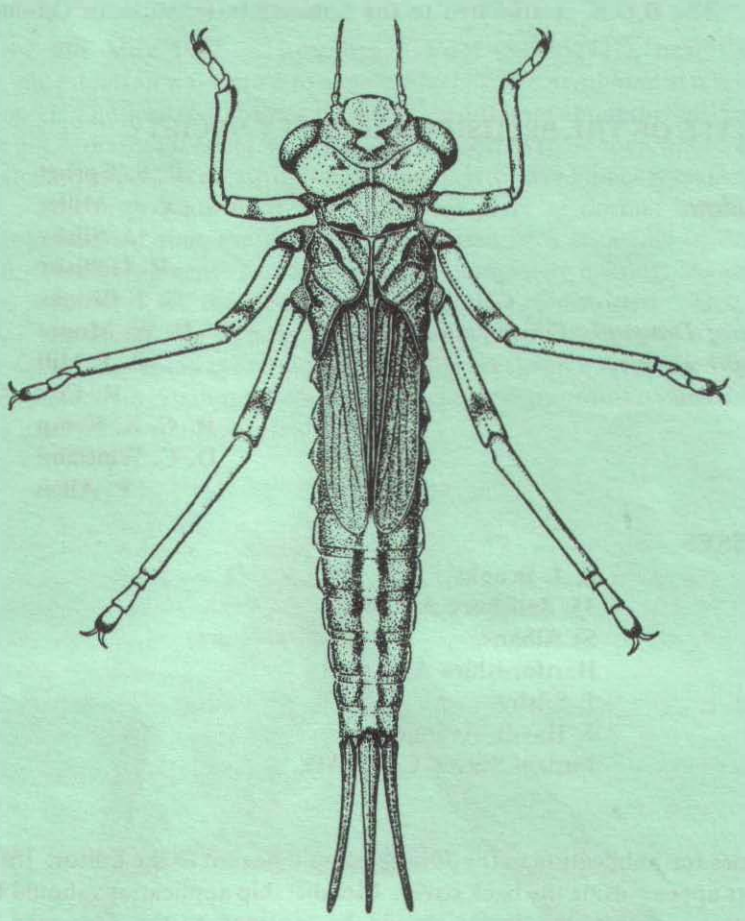

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member of the Societas Internationalis Odonatologica

The *Journal of the British Dragonfly Society*, normally published twice a year, contains articles on Odonata that have been recorded from the United Kingdom. The aims of the British Dragonfly Society (B.D.S.) are to promote and encourage the study and conservation of Odonata and their natural habitats, especially in the United Kingdom. The B.D.S. is affiliated to the Societas Internationalis Odonatologica (S.I.O.).

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Articles for publication in the *Journal* should be sent to the Editor. Instructions for authors appear inside the back cover. Membership applications should be sent to the Secretary. Completed forms should be returned to the Treasurer. Annual subscription £5.50, due 1st April.

Front cover illustration of larva of *Coenagrion mercuriale* by Philip Corbet.

An unusual specimen of *Pyrrhosoma nymphula*

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On the 9th May 1987 at Roscroggan Pool (SW652421), near Camborne, Cornwall, my attention was drawn to a male *Pyrrhosoma nymphula* at rest on a gorse flower (Fig. 1). I noticed that there was something different about this specimen but at first I was not sure what it could be. The wings appeared to be somewhat longer than usual, stretching almost to the tip of the abdomen. However I quickly realised that the abdomen was shorter than usual, and the wings were of normal length. Closer examination revealed that the abdomen comprised of 8 segments instead of the normal 10. Two of segments 3 to 6 were in fact completely missing. As well as this reduction, segment 7 of the abdomen was somewhat distorted. Despite these deformities, the insect was observed flying normally. Although the abdomen was quite well coloured, the tan eyes suggested that the specimen was teneral, perhaps 2 or 3 days old. I made no attempt to retain or collect this extraordinary specimen and he flew away after I had photographed him.

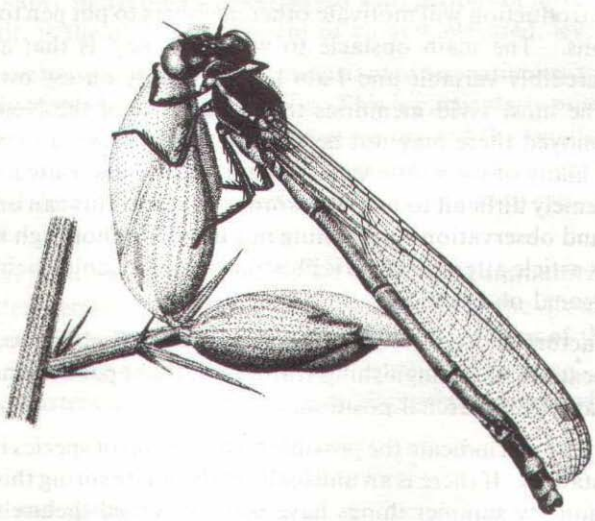

Figure 1. Male *Pyrrhosoma nymphula* with two of abdominal segments 3-6 apparently missing and segment 7 distorted.

The jizz: some thoughts on dragonfly recognition

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It is early evening late in May. As you approach a tree fringed pond a shape, dark against the sun, zooms past. You watch fascinated and gradually a pattern emerges. The dragonfly follows a well defined beat a couple of metres above the surface of the water and away from the vegetation. Occasionally, it stops to hover or makes brief forays to investigate and drive intruders away. Even though no colouration has been seen you know that it is the Emperor. Circumstantial evidence in this case would give you a 95% chance of being right. It is the right habitat, the right flight pattern and the wrong time of year for other aeshnids, apart from the Hairy Dragonfly which is not known to occur in this locality. Even so, official records should not be submitted on this evidence alone, because even the most experienced observer can be wrong. The logic is impeccable but nothing in nature is absolute. This situation was easy but, as the season progresses and more species are on the wing, flight recognition becomes much more complex and subjective.

I do not believe it is possible to write a definitive article on flight recognition but I hope that this introduction will motivate other members to put pen to paper with their own observations. The main obstacle to writing a 'key' is that all of the factors involved are incredibly variable and I am having to rely on my own memories and experiences. The most vivid memories that I have are of the New Forest and the experiences I enjoyed there may not be valid in a far removed locality. One other problem is that many of the subtle vagaries that may be associated with a particular species are extremely difficult to put into words. Much of this can only be learned by years of study and observation culminating in a deep and thorough knowledge of the subject. All this article attempts to do is illustrate the 'mechanics' behind it and to pass on my own personal observations.

The main factors are: 1. time of year; 2. species usual flight periods; 3. habitat and geographical location; 4. distinguishing features; 5. flight pattern and mode of flight; 6. relative size and 7. hierarchal position.

1. Time of year will indicate the possible combination of species in question under normal circumstances. If there is an unusually early or late spring this should be taken into consideration, by summer things have usually evened themselves out.

2. The temporal position within a species flight period will indicate two main aspects. First, early in the period the mature insect will have vivid colouration and glistening wings, these will fade and become damaged as time passes until by the end of

the period most will be dull and tattered. In parallel with this there is a dominance factor best illustrated by an example. When the Southern Hawker first seeks territory, the Emperor is still in his prime and is dominant but as time passes the Emperor weakens and the Southern Hawker takes over. A similar happening occurs when the Common Hawker arrives but is less noticeable because the flight periods of Southern and Common Hawkers are not too dissimilar.

3. Habitat and geographical location: assess the habitat; how does it compare with the requirements of the insect? Is it ideal, sub-optimal or only marginally favourable? Prior to embarking on a field trip it is wise to consult a dragonfly atlas to see what species may be encountered.

4. Unfortunately many of the most obvious diagnostic features shown in text books are almost impossible to see in flight. For example, the bright antehumeral stripe of the Southern and Common Hawkers are extremely difficult to gauge, even when the insect is hovering. Conversely, the trailing anal appendages of the Brilliant Emerald are reasonably obvious.

5. Flight pattern: what niche does it occupy? Is it high in the air, low over the water or intermediate? Does it follow the contours of the bank, fly amongst the vegetation or stay well out over the water? Is the flight strong, continuous and direct or does it make short sharp bursts interspersed with periods of hovering? What is its attitude in the air, is the abdomen straight or curved, elevated, level or drooping?

6. I consider relative size to be more important in a negative way. Individual sizes vary considerably within a particular species. This is particularly noticeable amongst damselflies where the variation tends to be more toward the smaller sizes than the larger. I have on occasions come across Blue-tailed of a size more associated with Scarce Blue-tailed damselflies so be careful not to allow size to sway your judgement too much.

7. Hierarchal position: what is its position within the community? This is only of significance under certain circumstances. For example the Common Darter is relatively tolerant of its own kind so if amongst a community of them one or two individuals are repeatedly ousted then they are worth investigating. I have known a couple of Ruddy Darters to be mixed in with a colony of Commons where they are not tolerated.

Problem groups and species notes

The following notes relate solely to territorial males only and the groupings do not imply that all species within the groups will be found together.

A. AESHNIDAE

Emperor	Very enamel blue abdomen, sporadic bursts of fast flight at about two metres, interspersed with periods of hovering. Circumnavigates an area rather than flying up and down.
Southern Hawker	Long, strong, steady beat up and down. Abdomen slightly curved which allows the blue 'tail' to show. Inquisitive.
Common Hawker	Tends to look darker than the above species. Slow, casual flight, closely following contours of bank at low altitude.
Migrant Hawker	Small, bright and breezy, likes to fly amongst vegetation. Flight period not overlapping species below. Non-aggressive.
Hairy Dragonfly	Small, dull and drab, likes to fly in and out of emergent vegetation.

B. CORDULIIDAE

Common Emerald	Usually a short beat close to bank often occupying a small 'bay'. Flies with abdomen elevated and club-tail drooping. Ealier than species below but flight periods and habitats overlap.
Brilliant Emerald	Seems to like tall vegetation to fly against. Longer beat than species above, flies with abdomen level and anal appendages drooping.

C. LIBELLULIDAE

Keeled Skimmer Black-tailed Skimmer	I would not like to separate these in flight although the Keeled Skimmer does appear to be less forceful. The black tail is certainly not diagnostic as the pruinessence can and does wear off the tail of the Keeled.
Common Darter	More or less orange red abdomen, dominant to Ruddy Darter where they co-exist.
Ruddy Darter	Smaller than above, blood red abdomen, likes afforested areas.

Yellow-winged Darter	In the only one I have ever seen the diagnostic wing bases were very obvious.
Red-veined Darter	I have not found the red veination as obvious as one might suppose. Spiralling upwards flight to 10-20m where irregular but lengthy flights take place.

D. COENAGRIONDAE

Common Blue D/fly	Very blue, particularly thorax, slightly more stocky than species below. Restricted to still or very slow water. Often swarms over the surface of a pond.
Azure D/fly	When in good condition deeper blue than species above but always appears lighter than species below. Less restricted in habitat than above and below species. I find it difficult to separate this from preceding species with any certainty.
Variable D/fly	Because of the increased black this species appears darker than the Azure D/fly. Restricted habitat.
Southern D/fly	Smaller and darker than species above, blue somewhat brighter and deeper. Very often occurs as only odonate in specific habitats. When it does overlap with Azure D/fly the habitat is probably sub-optimal.

E. LESTIDAE

Green Emerald Scarce Green Emerald	Although the Scarce Green Emerald is stockier it is not really sufficiently noticeable in the male. I would not like to separate them without close scrutiny although I do feel that the pterostigma is more of a spot than a line in the case of the Scarce and the reduced pruinosity on the second abdominal segment is quite noticeable though not always reliable.

F. ISCHNURA

Blue-tailed D/fly	More robust than species below, stronger flier, end of abdomen looks a bit darker.
Scarce Blue-tailed D/fly	Very weak flight, frail looking, likes to fly amongst vegetation.

The notes above are from memory only, very incomplete, much is unsaid and some that has may provoke criticism as what I perceive others may not; it is a very personal thing. The 'jizz' is in the head of the observer, using the brain to compute a mass of micro-data and experiences and to come up with the most logical answer. This answer is not the basis for a firm record but for further investigation. Sometimes one can think from a casual observation 'Oh that is such and such a species' and then, for no apparent reason something seems wrong, the brain switches up a gear, lights start flashing and the 'jizz' is back in business.

Pond construction for dragonflies

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The excellent BDS paper on constructing ponds for dragonflies omits mention of the use of explosives. Professor Norman Moore used ponds on the Arne Peninsula by Poole Harbour, which had been constructed by this means, for his classic studies of intra- and interspecific competition amongst dragonflies (Moore, 1964). These ponds were formed by bombs dropped by the Luftwaffe, which had missed their targets in the Poole and Bournemouth area. Fortunately we do not have to rely on the Luftwaffe nowadays — our own Services do the job rather better. As a member of the Lulworth Ranges Conservation Group, I have been concerned about the scarcity of ponds to serve as breeding sites for the Odonata on the heaths of the ranges, which are used by the tanks of the Royal Armoured Corps for firing practice. In the last few years I have recorded 22 species there, including *Ceriagrion tenellum* and *Ischnura pumilio*.

The military authorities have been most helpful in trying to meet my requests for ponds for dragonflies, but until this year (1988) difficulties have always arisen. Once a dozen small holes were blown by the Royal Engineers but, due to a misunderstanding, some were in the wrong place and never filled with water: the others, though rather small, were however gradually colonised. On another occasion, on a training exercise, a tank fitted with a bulldozer blade got itself bogged down when approaching the selected site, and had to be rescued by a recovery vehicle. In fact this did form quite a good small pond, but is not a recommended method as it is liable to be very expensive in manpower and equipment — the disappearance of a million pound tank in a bog whilst digging ponds for dragonflies might be difficult to explain away. So it went on, until July this year, when I was rung up by the Royal Army Ordnance Corps Warrant Officer at Lulworth to say that he had 600lbs of condemned explosive which he had

been ordered to destroy, and that the Range Officer had suggested that I might have a use for it. We met on the range and visited the six sites I had previously chosen. These were all on the open wet heath, and were selected to meet the following criteria.

a. The ground within about 5-10m radius had to be level.
b. A water supply which was not liable to dry up even in the driest summer was essential — this was usually seepage from a bog.
c. It should not be too near an existing pool. This principle was not followed in one instance, where it was desired to reinforce the small holes previously blown by the Royal Engineers, which were in a particularly attractive place.
d. There should be scrub, or at least tall vegetation, within about 50-100m.
e. It should not be where farmers had grazing rights for cattle, as previous experience had shown that they soon trample in the edges unless they are, expensively, fenced out.
f. Each site had to be cleared with representatives of the Nature Conservancy Council and the county archaeological society — to ensure that it was not of botanical or archaeological importance — the Range Officer and the Property Services Agency land agent.
g. All sites had to well away from areas to which the public had access, to avoid them being injured from descending debris.

One of the problems with using explosives to blow ponds is that, if all the explosive is put in one place, the resulting crater is nearly hemispherical, so probably much deeper than required, but of insufficient diameter. This can be overcome if two or more charges are placed a short distance apart and set off simultaneously. A degree of skill is required to ensure that the resulting craters overlap, and that the spoil from one does not fill the others. However all was successfully achieved and, of the resulting craters, two measured about 10m by 15m, whilst the others were about 3m wide and, on average, about 10m long; all being about 1.5m deep.

The whole operation was carried out in less than a day, and all the pools were full a month later and looking as though they should be attractive to dragonflies, a few of which were already by then patrolling the newly created waters.

Reference

Moore, N. W. 1964. Intra- and interspecific competition amongst dragonflies (Odonata). *Journal of Animal Ecology* 33: 49-71.

The dragonflies (Odonata) of Sowley Pond, New Forest, Hampshire

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In recent years much new work has been done by many odonatists in the New Forest, where the species are generally well-known, but the largest and most magnificent area of freshwater in the whole area has remained an enigma, largely unknown because of its exceptionally private and enclosed nature. Even the late F. C. Fraser was never allowed into the Sowley Estate, so when the opportunity arose last year to visit the Estate, I determined to investigate everything possible in one season. Hopefully future workers can use my initial survey as a basc on which to build.

Habitat and environment

The New Forest contains only two areas of freshwater that can be called large lakes, each of very different nature. Hatchet Pond, just over half a mile long at its greatest point, is largely devoid of shelter or marginal vegetation, and thus far too open and windswept for most Odonata. Sowley Pond, the largest lake in the New Forest, with a maximum length of over two thirds of a mile, has by contrast magnificent shelter throughout. The pond dates from the very early 14th Century, when it was a monastic fishpond. It was then converted to a hammer pond in the 18th Century, the ironworks being close to where Sowley House stands today. Extensive use of coke later in the century put the small smelters out of business, and smelting wasters can still be commonly found along the South shore.

There is very little floating aquatic vegetation, and marginal reed only in certain areas, in particular the NW and NE, with smaller patches in the SE. Larger reedbeds are found along the tributary streams. Tussock grasses, used as wildfowl nesting sites, form the outer marginal zone in most other areas, with sedges and extensive patches of water mint.

Anisopterous larvae emerge mainly on the stems of the sedges and tussock grasses, with the zygopterous larvae using the mint. *Brachytron pratense* larvae favour floating branches along the edges with *Erythromma najas* preferring reeds for emergence and lilies later for basking.

Between the summer and winter water levels, the vegetation is principally alder and sallow, with much hazel and some birch above the winter high water zone. The surrounding dry woodlands are of fine mature mixed type, with the principal conifers being scots pine and corsican pine, with oak the commonest deciduous species, this despite great losses of both types during the Great Storm of 15th/16th October 1987.

The result is a perfectly staggered shelter belt of ascending height, around the entire periphery of the lake, excepting the southern edge of shore bordering the road.

The Odonata are perfectly provided for in such a habitat, with an additional influence being the private ownership of the entire area. The resultant limited access means the Odonata of Sowley Pond have been little studied, compared to the wealth of information covering the open forest. This privacy has protected the lake environs from the usual human disturbance, and the Odonata have flourished, together with a wealth of other fauna/flora.

In 1988 I made a total of 28 visits to Sowley Pond, over a five month period from May 4th to October 23rd inclusive, thus covering the flight periods of all British species. During this period, 18 species of Odonata were recorded, compared with the 27 recorded from the New Forest as a whole. This is a good total for just one season's observation, especially as some New Forest rarities such as *Ischnura pumilio*, *Ceriagrion tenellum* and *Coenagrion mercuriale* are not likely to breed on the estate. Suitable boggy seepages for the former and gravel-bedded clear streams for the latter do not exist there and the water is not sufficiently acidic. *C. virgo* was not found either.

Table 1. pH readings taken at Sowley Pond, 1988

	pH on 30.vii.88	pH on 23.x.88
North shore	7.5	6.93 @ 14.5°C
NE shore	7.5	
South shore	7.5	6.91 @ 13.8°C
SE shore	7.5	
East shore		7.14 @ 15.5°C
West shore	7.5	7.32 @ 14.7°C
West pools	7.0	
East pools		6.46 @ 15.1°C
NW pools	7.0	7.43 @ 14.3°C
N stream	7.0	
NE feeder stream		7.11 @ 14.2°C
NW feeder stream	7.0	6.93 @ 13.3°C
SE exit stream	7.5	6.91 @ 14.3°C

Note: July samples analysed colourmetrically; October samples analysed electronically.

probably for the same lack of suitable streams, but *C. splendens*, favouring slower and more basic water, was recorded for the first time as a breeding species in the New Forest.

Samples for water analysis were taken on July 30th and October 23rd (Table 1). Table 1 indicates that the streams are more or less neutral and drain into a slightly alkaline pond. As Sowley is not a very weedy pond, and therefore with no excessive loss of carbon dioxide, high pH readings were not expected. The lack of any particularly low pH readings in July, would suggest a low level of decomposition on the pond floor. The small variations suggest calcium neutralising any excess carbon dioxide, and this is borne out by the large population throughout the pond of the swan mussel, *Anodonta cygnea*. Twenty mature specimens produced an average length of 160mm, compared with a national average of 136mm (McMillan, 1973).

The southern shore is plateau gravel, excepting the central strip which consists of Alluvium. The northern shore is Osborne and Headon Beds, with shallow valleys of Alluvium base following the feeder streams.

Species

The first week of May produced teneral specimens of *Pyrrhosoma nymphula*, and exuviae were also found. During the second week, a number of teneral specimens were on the wing, and exuviae were numerous. The first *Ischnura elegans* were also found, including female f. *violacea*. On May 14th, three exuviae of *Calopteryx splendens* were foudnd in the NW area, showing that it is not restricted as a breeding species to the area of the River Avon as formerly thought (Fraser, 1950; Welstead & Welstead, 1984). Two *Cordulia aenea* exuviae were found on the same date.

By the third week of May, *Brachytron pratense* was on the wing, frequenting the sheltered pools of the western edge. *Erythromma najas* was numerous in the southern area, and was seen ovipositing, and *in copula*. Exuviae were also numerous. *Coenagrion pulchellum* was plentiful, mainly in the west, and observed *in tandem*, and ovipositing. Exuviae were numerous. This is the nationally rarest species present at Sawley, and its only locality in the New Forest. A few *Coenagrion puella* were also present, with *Enallagma cyathigerum* plentiful and observed *in tandem*. Exuviae were abundant. *I. elegans* was numerous as adults and exuviae and a few female f. *rufescens* were observed. *P. nymphula* were numerous, with some *in tandem*, and one mature male was observed devouring a teneral male *C. pulchellum*.

By the end of May, several *C. aenea* exuviae were found, but no imagines. Teneral *E. najas* had become abundant, with numerous exuviae. *C. pulchellum* was abundant, and 79 exuviae were counted in the SW area. Several tenerals were on the wing.

Several *C. puella* but only a few *E. cyathigerum* were also present. *I. elegans* was present in some numbers, with some tenerals and a few female f. *violacea*. *P. nymphula* was abundant and several exuviae were found.

The arrival of June saw several *B. pratense*, and *Libellula quadrimaculata* appeared, showing a preference for the north pools. *Libellula depressa* also appeared, with its headquarters at the pool formed by the NW feeder stream. They were numerous, and seen ovipositing. Several *C. aenea* were also ovipositing and one pair was seen *in copula*. A few *C. splendens* were present along the woodland edges of the NW. Several *P. nymphula* were *in tandem* and *C. pulchellum* and *C. puella* were numerous, *in tandem*, *in copula*, and found ovipositing. Several *E. cyathigerum* were seen on the wing and plenty of *I. elegans* including females f. *infuscans-obsoleta* and f. *rufescens*. Oviposition was observed. A few *E. najas* were on the floating leaves of *Nymphaea alba*.

By the middle of June, *B. pratense*, *C. pulchellum*, *E. cyathigerum*, *E. najas*, *C. puella*, *P. nymphula* and *I. elegans* were all witnessed ovipositing. June 19th saw new species appearing, with one female *Orthetrum cancellatum*, and *Lestes sponsa* being locally numerous in the SW. In the last week of June, several *C. pulchellum* exuviae were found, and many imagines were *in tandem*. A few *E. najas* exuviae were on reeds adjacent to the *Nymphaea*. *I. elegans* was numerous, as were female f. *infuscans-obsoleta*. *L. depressa* became numerous at the NW pool, and was seen ovipositing. The eggs were killed later in the year, by dehydration. *L. quadrimaculata* was not common, appearing only singly, and mainly in the north. *C. puella* and *E. cyathigerum* remained plentiful.

The first week of July produced *cyathigerum* as the most numerous species, followed by *C. pulchellum*. No new species arrived, and the remaining ones were not present in large numbers. The second week however produced the first few teneral *Sympetrum striolatum* along the west and south shores. *L. sponsa* became numerous in the NE and west areas, with *O. cancellatum* present in small numbers. *I. elegans* was *in copula*, with many female f. *rufescens*, f. *infuscans-obseleta*, and f. *violacea*. One female *E. cyathigerum* was observed proceeding backwards down a stem to oviposit, until the head was one inch below the surface. This was without a male *in tandem*, or even present. Subsequently the female returned to dry out, with no assistance throughout.

The second week of July produced one male *C. splendens* on the north shore on the 15th, followed by one female at the SW shore on the 20th. A species of uncertain status was *Anax imperator*. Fraser (1950) gave it as "not uncommon" at Sowley, but it appeared very infrequently in 1988, and no regularly occupied territory was identified despite the apparent suitability of the site. The occasional specimens seen were all

males, and breeding was not proved. The last *C. pulchellum* was a male on the 15th, and the last *C. puella* a male on the 20th, a rather early finish for the latter. The 20th July also produced a new species. One male *Sympetrum sanguineum* on the south shore. This species is not known to breed in the Forest and was almost certainly a wanderer.

August produced great alterations in the shoreline habitat. By the 3rd, the west side pools had dried out, together with those in the NW. The northern ones were rapidly retreating. Sowley has one of the lowest rainfalls in Hampshire, and has a system of irrigation pipes enabling water to be pumped out. This makes the pond liable to great and rapid fluctuations of levels. Odonata larvae were frequently trapped in tiny pools, and by the middle of August, the water had retreated 5m on the south shore, producing a drop in the level of 55cm. This later became 71cm along the west shore where the flatter shoreline formed lagoons, and 15-20m of mud. Many molluscs were subsequently easy prey for a variety of birds.

The first week of August produced *Aeshna cyanea* in the west, and later in the NE. *S. striolatum* became numerous with teneral specimens being found throughout the month. The first *Aeshna mixta* was found on the 29th, in the north, and later several were found in the woodland glades of the east. The latter area remained their favourite locality throughout their season, although the shallow pools of the north were a frequent hunting territory. *E. cyathigerum* *in copula* on the same date. A few female f. *infuscans-obsoleta* were seen throughout the month. *L. sponsa* was observed in tandem on the 3rd, and *in copula* on the 18th. *P. nymphula* was found only in small numbers and as isolated individuals.

An abrupt change in shoreline occurred on the 1st September, which produced half the usual rainfall for the whole month. The shore advanced 3m, partially re-filling the lagoon areas of the north shore. *S. striolatum* remained numerous throughout September, with *A. cyanea* and *A. mixta* particularly favouring the sheltered woodland glades of the NE. Several *L. sponsa* were on wing throughout the month, and the western edge was also used by *A. mixta* and *S. striolatum*.

By the beginning of October the water had advanced another 2m, leaving no isolated pools. *A. mixta* and *S. striolatum* remained, the former mainly in the NE and the latter in the shelter of the west side.

The unrivalled position of Sowley Pond, with its proximity both to the sea, and the open Forest, makes it highly likely to be visited by immigrants from Europe, such as *Sympetrum flaveolum* and *Sympetrum fonscolombii*. In addition, casuals from the New Forest acid streams and heathland sites must certainly on occasion visit Sowley as hunting territory, if not to breed.

Site evaluation

Localities are evaluated as of Local, Regional and National importance, and the survey shows (Table 2) that Sowley Pond qualifies in all three categories. The Nature Conservancy Council (Chelmick, *et al.* 1980) placed in the Local Importance category, the Sowley species *Orthetrum cancellatum, Libellula depressa, Cordulia aenea, Sympetrum sanguineum* and *Erythromma najas*. It was stated that any site with ten or more breeding species was likely to come into the category of Regional Importance, on grounds of diversity, so Sowley qualifies. National Importance is dependant on individual species, and *Coenagrion pulchellum* is in this third category. It is fast declining as a British species, and requires particular attention if it is not to reach endangered status. It does not breed elsewhere in the New Forest, and I know of only one other British colony (in Surrey) of comparable size.

Table 2. Odonata species recorded during 1988 from Sowley Pond, New Forest.

ANISOPTERA

Anax imperator
**Aeshna cyanea*
**Aeshna mixta*
**Brachytron pratense*
**Cordulia aenea*
Orthetrum cancellatum
**Libellula quadrimaculata*
**Libellula depressa*
**Sympetrum striolatum*
Sympetrum sanguineum

ZYGOPTERA

**Calopteryx splendens*
**Lestes sponsa*
**Erythromma najas*
**Enallagma cyathigerum*
**Coenagrion puella*
**Coenagrion pulchellum*
**Pyrrhosoma nymphula*
**Ischnura elegans*

* indicates breeding species.

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