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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 a member of the Societas Internationalis Odonatologica (S.I.O.).

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P. Allen

Obituary

Cynthia Longfield (1986-1991)

Cynthia Evelyn Longfield, the first Honorary Member of the British Dragonfly Society, died on 27 June 1991. She was born on 14 August 1896, in Belgravia, but spent much of her childhood at Castle Mary, near Cork in Ireland, where her Anglo-Irish parents maintained a large estate. Her active and varied life spanned a time characterised by massive social change: during Cynthia's early youth Queen Victoria still reigned and the British Empire was at its zenith. By the time Cynthia had attained middle-age two world wars had transformed life in Britain, especially for women; and towards the end of her life she witnessed the accelerating human impact on the habitats and wildlife that she held so dear.

With her two sisters, she was educated at home by governesses, but by the age of fourteen she knew that she wanted to be a scientist and thereafter showed great determination in pursing her goal, reading insatiably, observing, collecting and, above all, travelling overseas, in company or alone. Among her journeys to five continents, the one that had by far the greatest influence on her career as an entomologist was undertaken during 1924 and 1925 when she joined Evelyn Cheesman and Cyril Collenette as an entomological assistant on the St George Expedition to the South Seas, an enterprise described in the book Sea-girt jungles (Collenette, 1926). Cynthia returned from this expedition a fully-trained field entomologist, on the strength of which she was allowed to work full-time, in an honorary capacity, in the Department of Entomology at the British Museum (Natural History) where she was given responsibility for the Odonata and quickly became the resident expert on the group. That momentous sequence of events saw the beginning of her steady and influential contribution to odonatology, and especially British odonatology with which this article is primarily concerned. It should be stressed, however, that Cynthia led a life enlivened by variety and adventure, and marked by achievement and service in fields other than odonatology, especially during the first and second world wars. Those who wish to read an extended and sensitive account of this remarkable Edwardian lady are referred to the biography by Jane Hayter-Hames (1991), to whom I am indebted for some of the information included here. An account of Cynthia's contributions to the taxonomy of world Odonata is given by Robert Gambles (1975). These two publications, and four brief obituary notices that appeared in national newspapers, are listed with other references at the end of this article. Odonatological publications by Cynthia omitted from the bibliographies given by either Gambles or Hayter-Hames are listed in a review of Hayter-Hames' book that appears in this journal. It should also be placed on record that Cynthia was

born on 14 August, not on 16 August as stated in the obituary notices listed at the end of this article.

The British Museum (Natural History) provided Cynthia with an appropriate base from which topromote and co-ordinate the study of British dragonflies. She herself was an energetic collector and she resuscitated and expanded W. J. Lucas' task of collating distribution records and encouraging other observers to extend them. In 1946, in the course of her own field work in Essex, Cynthia discovered, with E. B. Pinniger, Coenagrion scitulum, a species not recorded previously from Britain (and now probably extinct here); and in 1948 in Norfolk she rediscovered C. armatum, until then thought to have been extinct in Britain.

Her first book, The dragonflies of the British Isles, was published in Warne's Wayside and Woodland series in 1937. It was the first such publication to appear since W. J. Lucas' British dragonflies in 1900, and it was an immediate success. It achieved Cynthia's stated aim which was to "supply information of a not too technical character and in a small compass, on this neglected group of insects". This she accomplished with imagination and thoroughness, taking pains to make the book easy to use by the non-specialist. Thus it offers simple vet authoritative means for identifying adults, beginning with overall colour and then moving to structure and pattern. Other noteworthy features include the classification of species into seven categories of flight period, the English pronunciation of scientific names, the distribution of each species, beyond as well as within the British Isles, and, for the serious student, a section giving the formal classification of the British species. Cynthia took the then courageous step (by now fully vindicated) of assigning to each group and species a "popular" name, expressing the hope that "should these [names] be accepted, dragonflies will arouse more interest than they do at present".

The dragonflies of the British Isles went out of print in 1945 and a second, enlarged edition was published in 1949. The main additions were: the inclusion of coloured plates by W. F. Evans (1845) and Cyril Hammond and a coloured photograph by W. H. T. Tams; the use of vice counties for recording distribution; and the distinguishing of records that were of doubtful provenance or that predated 1910. Both editions of this book, together with Cynthia's publication of new county records in *The Entomologist*, provided a strong stimulus to odonatologists to try to extend information on the distribution and life-histories of dragonflies in the British Isles. This exciting and fruitful time has been placed in historical perspective by Gambles (1976) who wrote: "a new generation of odonatologists has appeared since the war, probably all and certainly most, owing everything to Cynthia Longfield and her books".

In 1957, after more than thirty years at her desk in the British Museum

(Natural History), Cynthia retired to her home on the Castle Mary estate near Cork. From there she continued to contribute to British odonatology. As a coauthor, with Norman Moore and me, of the book Dragonflies in the Collins' New Naturalist series (1960), she provided definitive accounts of the history of odonatology in Britain, the distribution and identification of British species, forty maps of distribution in Britain and fifteen of distribution globally and appendices on systems of venation and colour preservation. And it was she who had arranged for the commissioning and inclusion of colour photographs (by S. Beaufoy) of living adults of all the British species — an attractive and important feature of the book. Dragonflies also soon went out of print and was republished in 1985 as a facsimile edition, with a new Preface and plates in monochrome, a venture about which, like her co-authors. Cynthia was ambivalent, because the colour photographs had been such a valuable feature of the first edition. However all authors eventually agreed that republication was desirable, primarily in order to make the text available again. Another contribution Cynthia made during her retirement was to provide almost all the records in the atlas of dragonfly distribution in Ireland compiled by Eanna ni Lamhna (1977, 1978).

The signal contribution made by Cynthia Longfield to British odonatology, especially during the fifty years from 1925, led directly to the publication in 1977 of C. O. Hammond's *The dragonflies of Great Britain and Ireland* and its second edition (revised by R. Merritt) in 1983, and to the formation in 1983 of the British Dragonfly Society. Hammond's book focuses on identification, featuring his own enlarged colour illustrations of adults and A. E. Gardner's key to larvae, and updated distribution maps based on 10-km squares of the National Grid, in conformity with the system adopted by the Biological Records Centre. It was typical of Cynthia's approach to work and colleagues that she gave fulsome praise to this book. Likewise she gave valued encouragement to the British Dragonfly Society in its formative years, being generous in her expression of pleasure at being elected the Society's first Honorary Member in 1987. Having regard to the Society's aims, this special association with it was exceptionally appropriate because conservation was an important part of her life.

Cynthia Longfield overcame formidable obstacles to become a productive entomologist. Fortunately she was possessed of tremendous mental and physical energy of which odonatology became the beneficiary. Moreover she approached her self-appointed task with great generosity of spirit. As Jane Hayter-Hames has written (1991): "She got things done and made her energy, drive and enthusiasm available for others; at first the societies to which she belonged, later her colleagues, students and young odonatists." Thus Cynthia was not only a practitioner; she was also an *enabler* and for this will always deserve the respect and gratitude of those who wish to conserve dragonflies in the British Isles.

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Philip S. Corbet

Inverted emergence by Ischnura elegans (Vander Linden)

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On 31 May 1990 I visited Loch Tallant on the island of Islay, Argyll, Scotland, a site with fen characteristics, to look for *Brachytron pratense*.

The weather conditions were marginal for flying adults (a not unusual circumstance in Scotland) and so the survey concentrated on a search for exuviae. As the terrain was both treacherous and sensitive, the search was limited to two lengths of promising shore. In fact, *B. pratense* was not found but many zygopteran exuviae were noted. These were later identified as *Ischnura elegans*. This species was by far the most abundant zygopteran that was encouraged to fly during 20 minutes of sunshine.

Of the 30 or so exuviae seen, at least 80% were in the inverted position. That is, they were clinging to the emergence support in a head-downwards position. None of the exuviae was attached to a support which had broken below the exuvia and toppled over, thus giving the illusion of an inverted emergence. Unfortunately, no emergences were witnessed. Only one unflown teneral was observed but the exuvia could not be seen.

Odonata emerge in a range of positions from the horizontal or near horizontal position associated with gomphids, to the vertical favoured by aeshnids. Some species appear to prefer to hang underneath a support inclined from the vertical rather than alongside one which is absolutely vertical. In all of the inclined or hanging positions the head is normally uppermost.

If an inverted position conferred any survival advantages it would presumably be encountered regularly. Certainly, the force of gravity would assist the escape from the exuvia but the about-face to the head-upwards position, required to ensure that the soft abdomen hardens hanging downwards, would seem to be a potentially hazardous manoeuvre. I do not know for certain whether any of the inverted exuviae actually gave rise to successful emergences. Any genetic predisposition to adopt eccentric emergence postures which reduced the success rate would clearly not persist in a population.

Could an environmental factor, pollution for example, cause such an aberration? The site is not situated near any obvious source of unusual pollution. I would be interested to hear from other observers if they have encountered this phenomenon.

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An observation of an apparently water-divining dragonfly

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The following account is one that I should have difficulty in believing had I not seen it myself, and I should be pleased to know of other first-hand evidence of a similar nature.

One hot sunny July afternoon several summers ago, I was walking along Tunnell Street, a quiet road in the commercial outskirts of Saint Helier, Jersey. Some small streams which formerly wandered through the town were mostly culverted and covered many years ago and one such open stream approaches Tunnell Street at a right angle, turns sharp right and continues in a shallow tunnel under the pavement upon which I was walking. (It was named Tunnell Street, although spelt wrongly, when the tunnel was constructed in the 19th century). The culverted stream is totally enclosed and the pavement gives no clue to what runs beneath it.

I noticed a small creature flying directly towards me about two feet above the middle of the pavement. At a distance I thought it might be a wren but, as it approached, I saw that it was a dragonfly which I recognised as Cordulegaster boltonii. It was at about knee height, flying determinedly towards me and, in slight surprise, I stepped aside to let it by. It passed, seemingly oblivious of me, within inches and continued on its unwavering course until it was over the place where the tunnel turns sharp left across the road and continues under a yard between buildings. The dragonfly also turned left and, unquestionably following the line of the hidden watercourse, flew through a gateway in the wall and disappeared from my view.

I have considered every aspect of the structure of the tunnel under the pavement and am satisfied that there is no visible indication of it above ground. Sometimes, after heavy rain, a flow of water is audible through the drain gratings in the gutter, but there had been no recent rain. The open stretch of the stream, where it entered Tunnell Street, revealed that at that time there was absolutely no flow, but there were a few stagnant puddles. From my observation I am convinced that the dragonfly intentionally followed, above ground for well over a hundred yards, the precise line of a concealed man-made watercourse.

The English and Latin names of dragonflies: some pros and cons

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Since the inception of the British Dragonfly Society there has been much discussion concerning the use of common and scientific names for dragonflies. Having had a personal interest in dragonflies for 20 years and a non-academic background, I can understand both sides of the argument. Cynthia Longfield (1937) first popularised dragonflies with her book *The dragonflies of the British Isles*. Included in this was a full list of common names and a phonetic pronunciation of the scientific names. Those common names became standard despite the fact that some were rather lacking in imagination. Recently, Allen Davies (*in litt.*) devised a fresh set of common names which in many cases were much more descriptive and appropriate. The fact that they were not adopted was no reflection upon their suitability but because it was felt that it would add more confusion to an already confused situation.

There are valid reasons for the use of both scientific and common names. Common names are more appropriate to an audience of laymen (and women). The words are familiar even if the subjects are not; it would be out of place to reel off a list of Latin names in a workman's club. One would guite naturally feel, and be, a bit of a poseur. Conversely, if one were holidaying in China and told a local naturalist that you had seen a Beautiful Demoiselle in the upper reaches of the Yellow River he would probably not know what you were talking about. Had you said Calopteryx virgo he would have understood instantly, since scientific names are used world-wide. These two examples are extremes; each audience has to be assessed on its own merits. If you feel that the bulk of the audience will not relate to the scientific names then use common ones. This will apply to most of the population but much of the time you will be talking to fellow enthusiasts who will be used to Latin names. Common names are alright if you only have a passing interest Once it becomes more than this it is vital that scientific names are learnt. Many people do not learn them because they feelill-at-ease pronouncing them. This is only because they are unfamiliar sounds to people who did not learn Latin at school but the more they are used, the more familiar they become. It is better to mis-pronounce a scientific name and be understood than to pronounce a common name perfectly and be misunderstood.

There can be no doubt that anyone taking a serious interest in dragonflies must make the effort to learn the scientific names or there will come a time when the disappointment at not understanding them will be greater than the initial reluctance to use them. When I started, 20 years ago, I knew of no-one else interested in Odonata but as there were only 44 species I determined to learn the scientific names. At first I did not even relate them to the insects themselves but just learnt them parrot-fashion until I knew them off by heart. After this I learnt the species distributions and habitats and then I went to look for them. They were the first scientific names I got to know and since then I have started to study numerous other minority groups without any trouble at all. I would personally urge everyone to spend a few winter's evenings learning them — you will be surprised how easy it is. Remember the old adage, "If a job is worth doing it is worth doing well."

In the final analysis the main reason for using scientific names must be the ease of use. Common names are unwieldly and it is difficult to abbreviate them. When using scientific names it is seldom necessary to use both generic and specific name. Which is the easier to say "Gomphus" or "Club-tailed dragonfly"?

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Further observations of Odonata as food for wagtails.

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Brownett (1990) records observing predation of *Enallagma cyathi gerum* by a Grey Wagtail when the former were at high densities on a lake. He suggests that this was probably a one-off opportunist event. However we observed similar behaviour by a Pied Wagtail (*Motacilla alba yarelli* L.) in early summer 1990 and wonder if this behaviour might represent a more regular source of mortality for Zygoptera than presently recorded.

On the 1st June 1990 we were observing the Odonata of a large pond on the University of Southampton's estate at Chilworth (O.S. ref. SU 403183). This pond is about 70m by 30m and is sited between long grassland on two sides and open mixed woodland on the other two. We have so far recorded ten species of Odonata at this pond: Pyrrhosoma nymphula, Ischnura elegans, Coenagrion puella, Enallagma cyathigerum, Lestes sponsa, Anax imperator, Libellula depressa, Cordulia aènea, Aeshna mixta and Sympetrum striolatum. In spring and early summer it has large populations of the Azure Damselfly (Coenagrion puella) and the Large Red Damselfly (Pyrrhosoma nymphula). A count on 17th May 1990 estimated numbers at about 150+ of both these species, as well assmall numbers of Blue-tailed Damselflies (Ischnura elegans). Although a count was not made on 1st June 1990, densities of both species were still high. Large numbers were holding territories and ovipositing on the floating leaves of the pondweed (Potamogeton sp.) and the water lilies (Nymphaea alba) that cover about 25% of the pond surface.

A pair of Pied Wagtails had regularly been observed around the pond during the spring and were presumed to be breeding nearby. On this occasion the male was seen feeding over the floating vegetation. On closer obervation it could be seen walking over the floating leaves and picking damselflies from them, sometimes flying up into the air after them. It continued this behaviour during the hour we spent watching the pond. In one five-minute period at least a dozen damselflies were captured in this way. Using binoculars, we identified some of its prey as C. *puella* but we were unable to be sure whether it was taking the other two damselfly species available.

Since the wagtail had been present at the pond since at least early May and damselflies frequently reach high densities at this pond in good weather, we conclude that this behaviour was probably a regular element of the feeding strategy of this wagtail and hence represented a major source of mortality for damselflies at this site. We think it is likely that such behaviour may be common where wagtails occupy habitats with large populations of Zygoptera, which may constitute an important and regular prey item for such birds. However, other behaviour shown by the wagtail on this occasion was certainly more opportunistic — not to say optimistic — it made frequent attempts to fly at and catch the male *Anax imperator* that was hawking over the pond, with a notable lack of success!

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How common is terrestrial oviposition in Somatachlora metallica Vander Linden?

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In an earlier note (Fox, 1989), I suggested that there were differences between the oviposition behaviour of Somatochlora metallica in the north of Britain (where it inserts eggs into Sphagnum lawns or damp peat surfaces) and in southern England, where it drops eggs onto the surface of the water to fall to the bottom substrate, as described by Robert (1958), Aguilar et al. (1986) and Askew (1988). In the best traditions of Odonata study, more information has now come to light to suggest that such a simple division does not apply.

Pratz (1989) recently described egg-laying by a female Somatochlora metallica along the edge of an oak-fringed lake in the Orleans Sologne in France. The biotope described is typical of southern England sites, being a mesotrophic water surrounded by mature trees with deeply shaded edges and no floating moss-mats. Pratz observed egg-laying not into water but into slightly wet mud and decaying leaves 30cm from the edge of the water. He describes the vulvar scale being inserted into the mud before the insect moved forward to oviposit again. As in the case of the report of terrestrial egg-laying in Scotland, Pratz noted that every 10 or so acts of egg-laying, the female would divert to the water and very deliberately immerse the tip of her abdomen in an action which he tentatively interpreted as cleaning the ovipositing apparatus. However, he also describes the insect as immediately returning to recommence egg-laying after this action. Pratz considered that because the action was completely different, the female was not egg-laying over water, but consistently laying into the mud with brief respites to wet the abdomen tip.

However, Tiensuu (1945) also witnessed "egg-laying" into "turf" at the edge of a pond where the female lightly touched the surface of the water. He found that on close examination, while on dry land, the insect was not making contact with the substrate, but making a horizontal pushing action before flying to water where she was dipping her abdomen and definitely detaching 2-3 eggs each time which then sank to the bottom. In some circumstances, it would therefore seem that the species may appear to be ovipositing into a terrestrial substrate but can in fact still be depositing eggs on the water surface.

Laying eggs into the terrestrial fringes of a lake may offer enhanced survival for Somatochlora metallica. The immobile eggs can develop in the absence of large freshwater predators which would consume large numbers within the water body, at the same time hatching in close proximity to their ultimate larval habitat. It is known that on contact with water, the jelly-like coating of *Somatochlora metallica* eggs swell and become sticky (d'Aguilar et al., 1986), a feature which may trigger embryo development and synchronously reduce the processes of egg desiccation. There would be an associated cost to set against the advantages of terrestrial embryo development, since the risk of desiccation and predation on hatching would be high. However, it is clear from some of the observations reported here that we still need a great deal more information on precisely where and how *Somatoclora metallica* deposits its eggs in different situations before we can assess the relative frequency of terrestrial oviposition. I would certainly be extremely grateful to receive any observations relating to ovipositing in this species.

Acknowledgements

My sincere thanks go to Dr Gilles Jacquemin, Universite de Nancy, for providing a copy of Pratz (1989) and to my wife Anne for translating it properly from the original French. Prof. Philip Corbet kindly supplied a copy to Tiensuu (1945).

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Where do adult Gomphus vulgattissimus (L.) go during the middle of the day?

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Introduction

The mature males of most British dragonflies spend the middle of warm days by water. Females are usually seized there, and mating usually takes place over or near it. *Gomphus vulgatissimus* appears to behave differently, and since its habits have been little studied, it seems worth recording some preliminary observations on the species. They show what individuals were doing at a Thames-side locality on one sunny day in May.

Methods

G. vulgatissimus has been recorded from the middle reaches of the River Thames for many years (Lucas, 1900). The Little Wittenham Nature Reserve of the Northmoor Trust is a good locality for the species. It is one of the few places where the Thames is still bordered by woodland. Between 11.30 and 15.35 B.S.T. on 24th May 1990 I made a search for *G. vulgatissimus* by the river's edge, in the rides of Little Wittenham Wood, the edges of the Wittenham Clumps and in adjacent grassland. My route is shown in Fig. 1. 24th May 1990was a fine day. The sun was hot but there was quite a strong north wind, therefore it was likely that most dragonflies would be confined to sheltered places by the river and on south-facing edges of rides and woods.

Results

Dragonflies were recorded at 16 localities (see Fig. 1) as follows:

- 1. Backwater : Libellula depressa
- 2. Thames/backwater : Calopteryx splendens, Erythromma najas
- 3. Wooded edge of Thames : C. splendens, Platycnemis pennipes
- 4. Small woodland clearing : C. splendens, P. pennipes
- 5. Pond edge : L. depressa, Coenagrion puella, Enallagma cyathigerum
- 6. Pond edge : C. puella, E. cyathigerum, P. pennipes
- 7. Ride edge : L. depressa
- 8. Ride edge : E. cyathigerum, P. pennipes

- 9. Ride edge : G. vulgatissimus
- 10. Ride edge : G. vulgatissimus, C. puella, E. cyathigerum
- 11. Wood edge : G. vulgatissimus, E. cyathigerum
- 12. Wood edge : G. vulgatissimus
- 13. Wood edge : G. vulgatissimus, C. puella, E. cyathigerum
- 14. Grassland in vallum of Iron Age fort : G. vulgatissimus
- 15. Wood Edge : G. vulgatissimus, E. cyathigerum
- 16. Grassland : G. vulgatissimus



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Figure 1. Little Wittenham Nature Reserve, Oxfordshire. C — Wittenham Clumps, L — Little Wittenham Wood, T — River Thames. 1-16: localities where dragonflies were seen on 24th May 1990. Dots: locations of individual *G. vulgatissimus*. Dotted lines — transects. The exact localities of *G. vulgatissimus* are indicated by black dots in Fig. 1. One *G. vulgatissimus* was immature; most of the damselflies seen away from the river or ponds were immature or teneral.

The following observations were made on individual G. vulgatissimus at different localities. The individual at 9 perched on a bush, one at 10 on the leaf of a comfrey (Symphtum officinale) plant near the ground, when disturbed it perched on a bush above; another at 10 perched on a white poplar (Populus alba) seedling near the ground; the one at 11 perched on a small recently planted tree.

Two of the three at 13 were males. They perched within 45cm of each other. When one flew the other did not pursue it. The pair at 14 were in copulation. A male at 16 was in tandem with a female. The abdomen of the female hung down. Presumably it was an immature female not yet ready to mate. Later at 15 I drove the same immature female or another towards a perched male. The male pushed the female onto the ground and left her there, having failed to mate. Nearby another female perched high in a maple tree.

Conclusions

During the middle of 24th May 1990, a fine day, *L. depressa*, *C. splendens*, *E. najas* and *P. pennipes* were seen by the river, where breeding by G. vulgatissimus has been proved by the discovery of exuviae near locality 2 (see Fig. 1) (Mrs. Julia Sargent — personal communication). By contrast no G. vulgatissimus were seen by the river; the nearest was c.350m away and the furthest c.800m. Ten of the 14 *G. vulgatissimus* were perched on trees, bushes or near the ground in warm sheltered spots at the edge of woods or in a broad ride. Copulation was observed c. 650m from water in a grassy hollow between woods. Attempted copulation with immature female(s) was observed in grassland near a wood c.800m from the river. No fighting between males nor territorial behaviour was observed.

Discussion

G. vulgatissimus has been recorded flying along streams and rivers, and copulation has been observed in nearby vegetation (Hammond, 1983). Is the behaviour recorded at Little Wittenham unusual? Just possibly the absence of G. vulgatissimus from the river could have been due to the north wind blowing on the day of the observations. However, the presence of four other species by the river makes this unlikely. May 25th is quite early in the flying season of G. vulgatissimus: the behaviour observed at Little Wittenham may be confined to young adults. Alternatively, it may be related to the presence of woodland by the river's edge. For, it is conceivable that when all the rivers were flanked by forest, *G. vulgatissimus* always dispersed in the manner described at Little Wittenham, but today, when most of the Thames is flanked by meadows, and trees and bushes are confined to a few places along the water's edge, the dragonfly does not usually disperse far from water.

Finally, does the lack of aggressive behaviour only relate to situations where mating occurs away from water?

This paper is written in the hope that others will help find answers to these questions.

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Brief notes and observations

Compiled by **A. Paine** 3a Burnham Close, Trimley St Mary, Suffolk IP10 0XJ

Late date

Michael Powell, 150 High Street, Pansford, Avon BS18 4HN, reports at least two Common Darter (Sympetrum striolatum) present at Dungeness, Kent, on 18 November 1990.

Research

M. T. Averill, 25 Oakhill Avenue, Kidderminster DY101LZ, has kindly sent in the following details to supplement his article (Averill, M. T. 1989. Emergence attitudes in Gomphus vulgatissimus (L.). J. Br. Dragonfly Soc. 5 (2): 37-39.).

Over five years a total of 546 exuvia have been examined, and the results have been 71% vertical, 7% horizontal and 17% semi-vertical, and one upside down. On 1 June 1991 a vertical but upside down exuvia was found firmly fixed to a leaf of burr-reed and, although the adult had flown, it is unlikely that the exuvia had subsequently moved to that position.

Behaviour

D. K. Jenkins, 7 Lakewood Road, Ashurst, Hampshire SO4 2DH reports the following, observed during 1989.

At a shallow pond on Canada Common, Hampshire, an Emperor Dragonfly (Anax imperator) was seen repeatedly clashing with a group of 4-5 Four-spotted Chasers (Libellula quadrimaculata). Eventually, the Anax dropped onto one of the Libellula and carried it some 30-40 feet down the length of the pond between its legs before releasing it unharmed.

At Longwater Lawn in the New Forest, a male Southern Hawker (Aeshna cyanea) was making regular forays from an overhanging bush. A Small Heath butterfly (Coenonympha pamphilus) appeared some 15ft away on the opposite side of the stream and about 6ft higher than the dragonfly. Immediately the Aeshna flew straight at the butterfly, seized it, flew back to its perch, and ate it, discarding the wings.

Mixed pairings

Our first report comes from **R. M. Belringer**, 20 Wakefield Avenue, St Budeaux, Plymouth PL51PU. On 25 May 1991, at asmall moorland boggy pool on Bodmin Moor, Cornwall, a Four-spotted Chaser (Libellula quadrimaculata) and a female Broad-bodied Chaser (Libellula depressa) were seen flying in tandem, the former holding the latter by the neck. They eventually became separated, but the depressa fell onto the surface of the water. It was five minutes before she could be rescued and placed on a grass tussock, then at least another90 minutes before she took flight, flying strongly away from the pool, over which the quadrimaculata had been continuously patrolling.

Our next report is from **D. K. Jenkins.** During 1989, a pair of Large Red Damselfly (*Pyrrhosoma nymphula*) were seen in tandem, resting on a *Juncus* stem. A male Southern Damselfly (Coenagrion mercuriale) arrived and seized the female nymphula behind the head and doubled its body round as if attempting to mate, despite the nymphula being in tandem. After about a minute the mercuriale flew off and the nymphula separated.

Finally, the July 1991 issue of 'BBC Wildlife' includes a photograph taken in Cornwall in August 1990 of a male Emerald Damselfly (Lestes sponsa) grasping a female Common Darter (Sympetrum striolatum) behind her head; the striolatum was newly-emerged, and this is given as the likely reason that a damselfly could attach itself to a dragonfly.

Migrants

B. Milne, 45 Beech Drive, St Ives, Huntingdon PE17 4UB, reports seeing a male Hemianax ephippiger at St Ives gravel pits on 18 July 1991. It flew effortlessly in strong and blustery winds which had grounded most of the resident species. Only Aeshna grandis was still flying and then only for a few minutes at a time. Although Hemianax spent most of the time on the wing patrolling a regular beat, it did settle briefly a few times. Then the characteristic yellow-brown abdomen with a brilliant sky-blue patch on the second segment was clearly visible through binoculars.

Book Reviews

Madam Dragonfly. The life and times of Cynthia Longfield. Jane Hayter-Hames. The Pentland Press, 3 Regal Lane, Soham, Cambs. CB7 5BA (1991). 120pp. 1 872795 20 X. £15.95 (plus £1.80 for postage and packing).

Jane Hayter-Hames, a great-niece of Cynthia Longfield, wrote this biography because of her "affection, admiration and respect for a highly intelligent woman." Apart from her manifest skill as a writer, other things that have helped the author to make this a convincing and compelling portrayal of Cynthia Longfield are the personal contact that she had with her great-aunt and her access to private family papers, including Cynthia's extensive diaries, quotations from which have been beautifully integrated with the text to give atmosphere and immediacy to the accounts of her experiences. The author has also used contemporary photographs (Cynthia was an active and competent photographer) to achieve the same object.

The twelve chapters are entitled: The child with the butterfly net; The young scientist; War and revolution; Natural history and Egypt; The St. George expedition; The Natural History Museum, science and South America; Independence and South East Asia; Canada — formalities and freedom; Alone across Africa; Cynthia becomes an author and returns to Africa; The Second World War and the respected scientist; and Almost a century. Sixty-four black-and-white photographs depict people and places associated with Cynthia. There is a list of her publications on Odonata, a bibliography and a simple, effective index. Valuable inclusions are twelve clear maps prepared for the book by David Ashby.

Some of the photographs contain avoidable blemishes but this does not detract from their usefulness. The format and type are simple and attractive. There are very few printer's or factual errors. In the introduction the author states that she is not qualified to do justice to Cynthia's work in entomology, and that may be true; but there is a considerable amount of entomology in the book and it is handled lucidly and effectively. The author's remark that it should be for others to amplify this side of Cynthia's achievement has in effect been anticipated by the tribute article written by Robert Gambles in 1975. In this connection it should be mentioned that the list in the book of Cynthia's odonatological publications lacks several items which accordingly I append to this review.

Among the many attractive features of this excellent book is the highly successful way in which it places Cynthia in the context of her time. Her long life encompassed two world wars and massive social change. Despite the privileged circumstances of her birth — to Anglo-Irish landowners in 1896 — her life was not an easy one, not least because she was of independent mind, and an aspiring scientist, at a time when career opportunities for such women were few and often frustrating. That her life was rich in adventure, achievement and service was a testimony to some of her conspicuous character traits: courage, determination, curiosity and a passion for natural history. Because for most of her life she turned her energy and talents to the study of dragonflies, odonatologists, especially in Britain, will owe a lasting debt to Jane Hayter-Hames for this skilful and sensitive account of her subject. But I believe that many who are not entomologists or odonatologists will derive edification and pleasure from this biography because of the way in which the author handles the human interest and the strands of social history that provide its fabric. Like the author, such readers would wish to acknowledge a debt to her mother for having arranged for publication of a book that I predict will become a minor classic in its genre.

I have referred to the rich human interest in this book, which accordingly I commend to anyone, entomologist or not, who wants to learn how an Edwardian lady of Cynthia's calibre pursued her passion for science and natural history and made a winning hand out of the cards that fate dealt her. But there is special appeal in the book for those interested in the progress in Britain of entomology in general and odonatology in particular. Cynthia's role in the British Museum (Natural History), the Royal Entomological Society of London and the London Natural History Society is well documented; and her major contributions to the advance of odonatology in Britain are fully and accurately described in the last two chapters which will therefore be of special interest to anyone wishing to know how the foundations were laid for the British Dragonfly Society.

I knew Cynthia Longfield well over some forty-five years, and I predictably share the author's "affection, admiration and respect" for her. However, had I not known Cynthia before reading this biography, I am sure that I would have developed these sentiments while doing so. If that is what the author intended, I would say that she has succeeded admirably. I warmly recommend this book to readers of all ages, especially perhaps to those who seek a role model for remaining perennially young.

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Cynthia Longfield also provided most of the records for the first two editions (1977 and 1978) of the "Provisional atlas of dragonflies in Ireland" edited by Eanna Ni Lamhna, Irish Biological Records Centre, St Martin's House, Waterloo Road, Dublin 4 (ISBN 0 906120 02 0).

Philip S. Corbet

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Habitat conservation for insects – a neglected green issue. Fry, R. & Lonsdale, D. [eds.]. Amateur Entomologists' Society, Colchester (1991). 262pp., 32 colour plates. £12.00 (inc. p. & p.).

As the title of this useful book emphatically points out, insect conservation per se has received, more often than not, insufficient attention within the general nature conservation arena. Reasons for this are many, but as the book readily indicates, it is only over the last 20 years or so that our knowledge has developed sufficiently for insect conservation to be practised with a certain amount of confidence. Here, at last, "under one roof" is a compilation of easily read accounts, submitted by 15 authors, on the broad principles underlying the conservation of insects in Britain, with much practical advice.

The book is divided into 10 main sections: the introduction outlines the many changes that have made conservation necessary and the objectives for nature conservation, emphasising the importance of insects and their special habitat needs. This is followed by a useful chapter on insect classification, life cycles and the importance of the habitat mosaic. A brief account on each Order is given and, where possible, information on their status in Britain is provided.

The subsequent chapters deal with insect needs in specific habitat types: high forest and dead wood; coppice woodland habitats; grassland; hedgerows and field margins; heath; moorland and mountains; aquatic and water margin habitats and land managed for special purposes, like gardens, derelict land, etc. The final chapter is devoted to organisations and legislation concerned with nature conservation and, together with six appendices, they provide a wealth of miscellaneous information from butterfly foodplants and trade in insects, to dealing with planning applications.

To the dragonfly enthusiast, the accounts provided by Alan Stubbs and Phil Warren on aquatic and water margin habitats should be of interest; particularly the sound advice given on the management of ponds and lakes. Although dragonflies are mentioned, it should be stressed that this section deals with principles to improve and maintain habitats for aquatic insects in general; an approach all dragonfly conservationists should willingly adopt. Whilst it is emphasised that the conservation of aquatic insects is very much in its infancy, I would have welcomed a short list of references or further reading suggestions, as are provided at the end of other habitat accounts.

Despite the odd petty criticism such as the now outdated use of the Family "Agriidae" in the classification section, I think the A.E.S. have produced a very fine book that will be essential reading to all those involved in nature conservation for many years to come.

R. G. Kemp

Distribution of dragonflies in Gloucestershire. Sonia Holland. Toddington Press, Cheltenham (1991). 73pp + 5 figs, 28 maps. £4.00 (+ 50p p. & p.) (pb).

Many BDS members will remember Sonia Holland's informative account of the dragonflies of Gloucestershire that appeared on page one of the first issue of the *Journal* (Holland, 1983). This report represented the first dragonfly checklist to be published for Gloucestershire. Since then Sonia and her team of dragonfly recorders have added considerably to the distribution data. Now she is in a position to produce an authoritive and comprehensive statement on the current status of the county's dragonflies.

The book starts with a brief historical review of dragonfly recording in Gloucestershire. The first known dragonfly record for the county derives from a specimen of Aeshna cyanea which a farmer (miraculously) killed with a whip in 1890. The current survey includes records from all but two of the possible 40 10km squares. Twenty-seven species have now been recorded. This section is followed with species accounts which occupy the bulk of the book. The distribution and status of each species is summarized on a national and county level. The county itself is then considered in six regions and the most important sites for the species in these regions are listed together with comments on status and abundance. Unfortunately, for people unfamiliar with geography of Gloucestershire, the position of these regions within the county are not described or illustrated. A map accompanies each species account with records plotted on a tetrad basis. Most of the records cover the period 1978-1989. Particularly informative is the flagging of records which derive from species seen away from water. Details are also given on the flight period, with peak dates of emergence.

Each species profile ends with a note on field identification and highlights prominent characters which distinguish the species. I was pleased to see the unwary odonatist's attention drawn to the female form of Coenagrion puella that closely resembles C. pulchellum and how to reliably separate the two species by examination of the posterior lobe of the prothorax. This section also includes brief anecdotes which illustrate some aspect of the species' behaviour or habitat. These field notes often provide interesting snippets such as the observation that Anax curves its abdomen in flight, unlike Aeshna species which hold the abdomen straight. In a similar vein, we are told that over 100 adult Sympetrum striolatum were seen to emerge from a pond in early October that had been dry throughout August and early September. The larvae had apparently survived by burrowing into damp mud.

The book concludes with a detailed account of the environs and dragonfly

fauna of two sites of particular local importance: the Cotswolds Water Park (by Tony Fox); and the RSPB Nagshead Reserve in the Forest of Dean (by senior warden, I. J. Procter). Also listed, with their dragonfly interest, are 21 other sites of significance in the county. Tucked into a couple of odd corners of the book there is a list of aquatic plants often encountered in dragonfly habitats with their common names and a glossary of odonatological terms. This latter section is useful but I was surprised to see that the statement that dragonflies have nine abdominal segments (they have 10) was allowed to slip through!

Sonia Holland is to be congratulated on producing an attractive, well laid out book that succintly summarises the current status of dragonflies in Gloucestershire. Accounts like this are vital when formulating conservation strategies and monitoring long-term trends and so form an essential component in the pursuit of dragonfly conservation.

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INSTRUCTIONS TO AUTHORS

Authors are asked to study these instructions with care and to prepare their manuscripts accordingly, in order to avoid unnecessary delay in the editing of their manuscripts.

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Words that are to appear in italics (e.g. names of genera and species, though not of families) should be underlined.

Use of these terms is acceptable: 'exuvia' for cast skin (plural 'exuviae'); 'larva' (instead of 'naiad' or 'nymph'); 'prolarva' to designate the first larval instar.

References cited in the text should be in the form '(Longfield, 1949)' or ... as noted by Longfield (1949).' All references cited in the text (and only these) should be listed alphabetically at the end of the article in this form:

Hammond, C. O. 1983. The dragonflies of Great Britain and Ireland. 2nd edition (revised by R. Merritt). Harley Books, Colchester. 116 pp.

Longfield, C. 1949. The dragonflies of the London area. The London Naturalist 28: 90-98.

The titles of journals should be written out in full.

Tables should be typed, each on a separate, unnumbered page.

Legends for illustrations should be typed together in sequence on a single unnumbered page.

Illustrations (figures) should be prepared in black ink, and scaled to allow a reduction of 1.5 to 3 times. Lettering should be neat and uniform.

The legend for each table and illustration should allow its contents to be understood fully without reference to the text. The approximate position of each table and figure should be indicated in the text.

ZYGOPTERA	DAMSELFLIES	ANISOPTERA	DRAGONFLIES
Calopteryx virgo	Beautiful demoiselle	Aeshna caerulea	Azure Hawker
Calopteryx splendens	Banded demoiselle	Aeshna juncea	Common Hawker
Lestes sponsa	Emerald Damselfly	Aeshna mixta	Migrant Hawker
Lestes dryas	Scarce Emerald Damselfly	Aeshna cyanea	Southern Hawker
Playcnemis pennipes	White-legged Damselfly	Aeshna grandis	Brown Hawker
Pyrrhosoma nymphula	Large Red Damselfly	Anaciaeschna isosceles	Norfolk Hawker
Erythromma majas	Red-eyed Damselfly	Anax imperator	Emperor Dragonfly
Coenagrion mercuriale	Southern Damselfly	Hemianax ephippiger	Vagrant Emperor Dragonfly
Coenagrion scitulum	Dainty Damselfly	Brachytron pratense	Hairy Dragonfly
Coenagrion hastulatum	Northern Damselfly	Gomphus vulgatissimus	Club-tailed Dragonfly
Coenagrion lunulatum	Irish Damselfly	Cordulegaster boltonii	Golden-ringed Dragonfly
Coenagrion armatum	Norfolk Damselfly	Cordulia aenea	Downy Emerald
Coenagrion puella	Azure Damselfly	Somatochlora metallica	Brilliant Emerald
Coenagrion pulchellum	Variable Damselfly	Somatochlora arctica	Northern Emerald
Enallagma cyathigerum	Common Blue Damselfly	Oxygastra curtisii	Orange-spotted Emerald
Ischnura pumilio	Scarce Blue-tailed Damselfly	Libellula quadrimaculata	Four-spotted Chaser
Ischnura elegans	Blue-tailed Damselfly	Libellula fulva	Scarce Chaser
Ceriagrion tenellum	Small Red Damselfly	Libellula depressa	Broad-bodied Chaser
		Orthetrum cancellatum	Black-tailed Skimmer
		Orthetrum coerulescens	Keeled Skimmer
		Sympetrum striolatum	Common Darter
		Sympetrum nigrescens	Highland Darter
	*	Sympetrum fonscolombii	Red-veined Darter
		Sympetrum flaveolum	Yellow-winged Darter

Sympetrum sanguineum Ruddy Darter

Black Darter

White-faced dragonfly

Sympetrum danae

Leucorrhinia dubia

LATIN AND ENGLISH NAMES OF BRITISH ODONATA

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