



*W. J. Lucas, del.*

*ÆSCHNA GRANDIS*, Linn.



## Odonata.

The Odonata of the Lancashire and Cheshire District  
(Plate I and I text fig.)

By W. J. LUCAS, B.A., F.E.S.

IN one respect the Dragonflies of Lancashire, Cheshire, and neighbourhood are of more than usual interest, for the district lies on the borderland of the northern and southern aspects of the British Odonate Fauna. Two instances will sufficiently explain my meaning. The northern Dragonfly, *Leucorrhinia dubia* Lind., reaches the southern limit of its distribution in these latitudes, while *Pyrrhosoma tenellum*, Vill., attains the northern boundary of its range in the same neighbourhood. The exact line of delimitation awaits a discoverer in each case.

We may scarcely expect to find the essentially northern insects *Æschna cærulea*, Ström., and *Somatochlora arctica*, Zett., so far south; but *Somatochlora metallica*, Lind., may occur, since it has been taken in the South of England. There seems to be no reason why *Agrion hastulatum*, Charp., should occur at Aviemore only: it may await discovery in the higher parts of this district also. A similar argument is applicable to some southern insects that have not yet been found in the Lancashire and Cheshire area.

Some attempt might be made by those interested to capture specimens of Dragonflies that vary in any way from the usual type, either in body and wing markings, or in size.

Further, it should be borne in mind that a Dragonfly usually passes but a small portion of its existence as a terrestrial being, and we know all too little of it



in its previous existence, as a nymph. H. Bendorf has been good enough to send me nymph-skins of *Æschna grandis*, Linn., the figure and description of which will be seen below. I am gradually getting drawings and descriptions of the nymphs of the British Dragonflies, but several are unknown. Are the Lancashire and Cheshire naturalists sufficiently keen to help to complete the set? Thoroughly authentic and reasonably undamaged nymph-skins will serve the purpose admirably.

Dragonflies and their localities at present known for the district are as follows, the letters C, L, D, and W, in square brackets after the name of a locality indicating the counties Cheshire, Lancashire, Denbigh, and Westmoreland:—

1. *Leucorrhinia dubia*, Lind.—Oakmere Moss, Abbot's Moss, and Whitegate Heath (Arkle), Pettypool (Cooke)—in the Delamere Forest district [C]; Newchurch Common [C], 27 May, 1915 (Brown); Cuddington [C], 31 May, 1916 (Brown); Witherslack [W], one (Fletcher). In June, 1897, Arkle took a specimen on Whitegate Heath, in which all the wings were suffused with smoky saffron, especially at the base.

2. *Sympetrum striolatum*, Charp.—Delamere Heaths [C], (Arkle); coast of Cheshire (Cooke); Arrow [C], 20 Aug., 1916 (Coward); Langdale [W], (King).

3. *Sympetrum flaveolum*, Linn.—Chatmoss [L], (Hardy, in "*The Naturalist*, 1882).

4. *Sympetrum scoticum*, Don.—Pettypool, Newchurch [C], Aug., 1912, (Brown); Delamere Forest [C], (Arkle); very common on the "mosses" [South L. and C], (Cooke); North Lancashire (Arkle); Langdale [W], (King).

5. *Libellula depressa*, Linn.—Chester district (Arkle); a flight observed along the Lancashire coast on 3 June (presumably 1911), (Baxter in *Record*, 1911, p. 243).

6. *Libellula quadrimaculata*, Linn.—Delamere Forest [C], (Arkle); North Lancashire (Arkle); Loughrigg Fell [W], (King).

7. *Orthetrum cærulescens*, Fabr.—Parkgate and Bidston [C], (Arkle).



8. *Cordulia ænea*, Linn. — Pettypool [C], (Cooke, *Naturalist*, 1882).

9. *Cordulegaster annulatus*, Latr.—Chester district [C], (Arkle); Heaton near Bolton, and north-western corner of Lake Windermere [L], (Whittaker); Langdale [W], (King); Nant-y-Merddyn [D], 5 June, 1918 (Coward).

10. *Æschna juncea*, Linn.—Delamere Forest [C], (Arkle); Pettypool [C], Aug., 1916 (Brown); Bowdon [C], Aug., 1918 (Coward); North Lancashire (Arkle); Monton [L], 15 Aug., 1916 (Tattersall); in the heart of Rochdale [L], Aug., 1916 (Tattersall); Darwen (L), 6 Oct., 1918 (Birks)\*; Langdale [W] (King).

11. *Æschna cyanea*, Müll.—Chester district [C], (Arkle); Lymm [C], 1917 (Imms); Langdale [W], (King).

12. *Æschna grandis*, Linn.—Chester district [C], (Arkle); Irby [C], 22 Aug., 1916 (Coward); Vale Royal [C], Aug. to Sept., 1916 (Brown); Lymm [C], 1917 (Imms); Rostherne [C], Aug. 1918 (Coward); near Heaton, near Bolton [L], (Whittaker); Marton Mere near Blackpool [L], (Porritt); Burnley [L], Aug., 1917 (Clutton); Greenheys Manchester [L], July, 1918 (Coward); Ringley near Manchester [L], beginning of Aug., 1918 (Bendorf). On 7 August Bendorf wrote saying that "after Tuesday's (*sc.*, 6 Aug.) heavy rain we went in the evening to a pond a few minutes from here (*sc.*, Prestwich) and gathered six *Æschnas* fully out, two half out, and another which was in the pupa-case but had climbed on a reed out of the water." They were *Æ. grandis*, seven females, two males, and two nymph-skins which he allowed me to retain. A figure and description of the nymph accompanies this paper.

13. *Calopteryx virgo*, Linn.—Chester, banks of the Dee above Chester, and Eaton [C], (Arkle); Warrington, Hazelgrove [L], (Cooke, *Naturalist*, 1882); Windermere [L], flying about and settling on ivy, 15 June, 1905 (Whittaker); Rostland Pool [L], hovering over *Scirpus lacustris* Linn., 13 June, 1914 (Pearsall).

\* Accidentally recorded by the Rev. Mr. Birks in L. & C. Nat., Vol. xi., p. 204, Oct. 1918, as *Cordulegaster annulatus*, Latr.



14. *Calopteryx splendens*, Harr.—Chester and Ince Marshes [C], (Arkle); Pettypool [C], 6 Aug., 1915 (Brown); Warrington [L], (Cooke, in *Naturalist*, 1882).

15. *Lestes sponsa*, Hansem.—Delamere Forest district [C], (Arkle); Pettypool [C], 6 Aug., 1915 (Brown); towards south end of Coniston Lake [L], Sept., 1903 (Morton); near Elter Water, Lake District, Sept., 1903 (Morton).

16. *Erythromma najas*, Hansem.—Pettypool, Delamere [C], May, 1878 (Cooke, *Naturalist*, 1882), and Delamere, 27 May, 1915 (Tattersall).

17. *Pyrrhosoma nymphula*, Sulz.—Delamere Forest and Heaths [C], (Arkle); Delamere Forest [C], ten, 27 May, 1915, three of the females approaching var. *melanotum*; Cuddington [C], 31 May, 1916 (Brown); Langdale [W], (King); Nant-y-Merddyn [D], 7 and 10 June, 1918 (Coward).

[*Pyrrhosoma tenellum*, Vill.—Indicated for the district, but verification needed.]

18. *Ischnura elegans*, Lind.—Chester district, pretty general (Arkle); Moreton [C], July, 1917 (Standen); Pettypool [C], seven specimens, one being var. *rufescens* (Tattersall); Darwen [L], (Smith); Aspull near Wigan, [L], one, teneral, flying round disused pits overgrown with rushes (Arnold); Middleton near Manchester [L], 1918 (Bendorf); Dingle near Warrington [L], (Howarth); Scarisbrick near Birkdale [L], var. *rufescens* (Sopp); a male taken from rushes in a pit at Copster Green [L], 25 May, 1915 (Western); a male and two females, the latter being var. *rufescens*, from Reddish [L], 4 and 11 Aug., 1918 (Britten).

19. *Agrion pulchellum*, Lind.—Delamere [C], 27 May, 1915 (Tattersall); Newchurch [C], 31 May, 1915 (Brown).

20. *Agrion puella*, Linn.—Chester district, general (Arkle); Oakmere [C], (Arkle); Newchurch [C], 31 May, 1915 (Brown); Delamere [C], 27 May, 1915 (Tattersall); Cuddington [C], 31 May, 1916 (Brown).

21. *Enallagma cyathigerum*, Charp.—Delamere Forest [C], very common (Arkle); Newchurch [C], 27



May, 1915, and 31 May, 1915, the dorsal spot on segment 2 of those taken on the latter date being variable in form (Brown); Cuddington [C], 31 May, 1915 (Brown); Rostherne [C], 22 June, 1918 (Coward); Drinkwater Park, Agecroft [S.E. Lancashire], 22 July, 1918 (Bendorf); Middleton near Manchester [L], 1918 (Bendorf); Nant-y-Merddyn [D], 22 June, 1918 (Coward); Grasmere and Rydal-water [W], (King). The example from Rostherne was a male with the distinctive dorsal spot (text fig.) on segment 2 concave anteriorly, the first instance, I believe, in which I have seen it of that form.



DESCRIPTION OF NYMPH OF *ÆSCHNA GRANDIS*, Linn. (plate I., figs. 1-3).—Description and figure made from two skins supplied by H. Bendorf, these being compared with specimens from other localities.

*Surface* without hairs, but somewhat granulated. *Colour* brown, varying in depth in different specimens, sometimes of rather a rich tint, considerably mottled. *Body* elongate, constricted behind the thorax. *Length* about 44 mm. *Breadth* about 9 mm. *Head* rather flat, pentangular, about 9 mm. wide. *Vertex* a little raised. *Antennæ* of seven segments; basal two short and swollen, distal five slender; 3rd long, 4th short, rest about equal, 7th pointed. *Mask* at hinge about half as wide as at the front margin, which is slightly cleft and produced a little in a very obtuse angle; *palpi* cut straight at end; moveable hooks, sharp and slender. *Eyes* rather large, situated at the fore corners of the head, pearshaped, with the prolongation pointing backwards towards the middle line of the head. *Occiput* fairly broad, meeting the eyes in a curved line, lateral margins sloping backwards, hind margin



fairly straight; on each side of the mid-line a smooth patch, and outside these some pale patches. *Prothorax* in middle about as wide as the middle of the occiput, margin raised, pale at the lateral corners. *Leg-base processes* rough, sharp-pointed, about equal, enclosing an acute angle but not much less than a right angle, tip of anterior process turned somewhat outwards. *Legs* rather stout, fairly long, first pair about 14 mm., mid about 17 mm., hind about 21 mm.; femora ringed. *Wing-cases* broad, about 9 mm. long. *Abdomen* enlarged gradually to the 6th segment, then contracting rather rapidly to the tip; usually much mottled, bearing a few regularly arranged tiny black dots, and mid-dorsal dark double patches at the base of each segment; no dorsal spines; *lateral spines* on segments 6 to 9, others being just indicated on 5. Upper *anal appendage* about 1 mm. shorter than the lower ones and terminated in a clearly cut notch; laterals cylindrical, pointed, scarcely half the length of the inferiors; inferiors triangular, longer than last two segments, sharp-pointed. *Male projection* triangular, blunt, nearly as long as the lateral appendages.

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#### DESCRIPTION OF PLATE I.

- Fig. 1.—Nymph of *Æschna grandis*, Linn. ♂ from specimens taken by H. Bendorf, 6 Aug. 1918, at Prestwich, near Manchester ( $\times 3$ ).  
 Fig. 2.—Anterior part of labium (mask) beyond the hinge, inner aspect ( $\times 4$ ).  
 Fig. 3.—Leg-base processes at base of fore-leg ( $\times$  about 14).