**Patterns of variation in wing venation of Iberian *Cordulegaster boltonii* (Donovan, 1807) (Odonata: Cordulegastridae)**

Luísa Ferreira Nunes, Tomás Santamaría, Patricia Casanueva,

Luis Fernando Sánchez-Sastre, Manuel Ferreras-Romero, Ángel Romero,

Francisco Campos & M. Ángeles Hernández

Supplement 1. Entomological collections consulted for this work (source), country where the specimens of *C. boltonii* were captured (country), study zone of the specimens analyzed (numbers 0 to 6 correspond to those in Fig. 1) and their sexual identities. ARM: Ángel Romero personal collection (Granada, Spain). BOS: Departamento de Biología de Organismos y Sistemas (Universidad de Oviedo, Spain). GBIF: Global Biodiversity Information Facility (internet). ICB: Instituto Cavanilles de Biodiversidad (Universitat de València, Spain). MB: National Museum of Natural History and Science (Lisbon, Portugal). MC: Museum of Coimbra (Coimbra, Portugal). MCNA: Museo de Ciencias Naturales de Álava (Vitoria-Gasteiz, Spain). MFR: Manuel Ferreras-Romero personal collection (Seville, Spain). NHMUK: Natural History Museum United Kingdom (London, United Kingdom). MHNCUP: Museu de História Natural e da Ciência da Universidade do Porto (Porto, Portugal). MNCN: Museo Nacional de Ciencias Naturales (Madrid, Spain). MSNF: Museo di Storia Naturale, La Specola (Firenze, Italy). MZNA: Museo de Ciencias de la Universidad de Navarra (Pamplona, Spain). OD: own data. UGR: Universidad de Granada (Granada, Spain).

Source Country Study zone Males Females

ARM Spain 6 70 1

BOS Spain 1 4

Spain 2 177 33

Spain 3 1

Spain 5 14 1

GBIF France 0 6

Germany 0 2

Great Britain 0 1

Italy 0 1

Norway 0 7

Portugal 4 1

Russia 0 2

Spain 2 2

Switzerland 0 1

ICB Spain 5 36

MB Portugal 4 11

MC Portugal 4 5

MCNA Spain 5 10

MFR Spain 1 13 1

NHMUK Finland 0 2

France 0 1

Great Britain 0 46 21

Spain 3 2

MHNCUP Portugal 4 4

MNCN Spain 1 10 1

Spain 2 1

Spain 3 30 14

Spain 5 23 1

MSNF Italy 0 37

MZNA Spain 1 43 10

OD Spain 2 7

Spain 3 82

UGR Spain 6 2 2

Supplement 2. Sampling sites of *Cordulegaster boltonii* adults in the Iberian Peninsula. Places in the same municipality very close to each other are included in a single municipality. Latitude and longitude in decimal degrees. Zones as in Figure 1. N: number of adults analysed.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Zone | Country | Municipality | Province or  District | Latitude | Longitude | N |
| 1 | Spain | Ansó | Huesca | 42.8651 | -0.8149 | 2 |
| 1 | Spain | Hecho | Huesca | 42.8371 | -0.7128 | 1 |
| 1 | Spain | Huesca | Huesca | 42.6530 | -0.0792 | 14 |
| 1 | Spain | Nocito | Huesca | 42.3231 | -0.2544 | 2 |
| 1 | Spain | Panticosa | Huesca | 42.7632 | -0.2318 | 3 |
| 1 | Spain | Rodellar | Huesca | 42.0533 | -9.0980 | 1 |
| 1 | Spain | Sabiñánigo, Laguarta | Huesca | 42.4066 | -0.1192 | 1 |
| 1 | Spain | Articutza | Navarra | 43.2138 | -1.7963 | 1 |
| 1 | Spain | Beunza | Navarra | 42.9586 | -1.7224 | 3 |
| 1 | Spain | Bigüézal | Navarra | 42.6853 | -1.1487 | 1 |
| 1 | Spain | Burguete | Navarra | 42.9907 | -1.3371 | 1 |
| 1 | Spain | Echarri Aranaz | Navarra | 42.8852 | -2.0752 | 1 |
| 1 | Spain | Errazu | Navarra | 43.1811 | -1.4584 | 2 |
| 1 | Spain | Eugui | Navarra | 42.9763 | -1.5054 | 2 |
| 1 | Spain | Ezcurra | Navarra | 43.0809 | -1.8194 | 9 |
| 1 | Spain | Giozueta | Navarra | 43.1718 | -1.8662 | 2 |
| 1 | Spain | Huici | Navarra | 43.0374 | -1.9141 | 8 |
| 1 | Spain | Irati | Navarra | 42.9839 | -1.1338 | 5 |
| 1 | Spain | Isaba | Navarra | 42.9284 | -0.8582 | 4 |
| 1 | Spain | Izalzu | Navarra | 42.9137 | -1.0550 | 3 |
| 1 | Spain | Larrainzar | Navarra | 43.0373 | -1.6220 | 2 |
| 1 | Spain | Leiza | Navarra | 43.0838 | -1.9205 | 1 |
| 1 | Spain | Maquirriain | Navarra | 42.8663 | -1.6465 | 3 |
| 1 | Spain | Navascués | Navarra | 42.7167 | -1.1269 | 1 |
| 1 | Spain | Ochagavía | Navarra | 42.9113 | -1.0813 | 2 |
| 1 | Spain | Ollo | Navarra | 42.8658 | -1.8592 | 1 |
| 1 | Spain | Orbaizeta | Navarra | 42.9882 | -1.1372 | 1 |
| 1 | Spain | Unzué | Navarra | 42.6536 | -1.6299 | 1 |
| 1 | Spain | Valtierra | Navarra | 42.2462 | -1.5438 | 1 |
| 1 | Spain | Tiermas | Zaragoza | 42.6160 | -1.1112 | 3 |
| 2 | Spain | Aguillón | Asturias | 43.3680 | -7.0810 | 2 |
| 2 | Spain | Amieva | Asturias | 43.3068 | -5.1303 | 1 |
| 2 | Spain | Anzó | Asturias | 43.2150 | -5.4190 | 1 |
| 2 | Spain | Arnao | Asturias | 43.5758 | -5.9769 | 1 |
| 2 | Spain | Avilés | Asturias | 43.5400 | -5.9003 | 1 |
| 2 | Spain | Belmonte de Miranda | Asturias | 43.3272 | -6.2945 | 1 |
| 2 | Spain | Cabrales | Asturias | 43.2517 | -4.8357 | 2 |
| 2 | Spain | Cadaveo | Asturias | 43.5469 | -6.3868 | 4 |
| 2 | Spain | Cangas de Narcea | Asturias | 43.1743 | -6.5512 | 28 |
| 2 | Spain | Cangas de Onís | Asturias | 43.2860 | -4.9910 | 5 |
| 2 | Spain | Castrillón | Asturias | 43.5222 | -5.9851 | 1 |
| 2 | Spain | Castropol | Asturias | 43.5528 | -6.9880 | 3 |
| 2 | Spain | Collanzo | Asturias | 43.1242 | -5.5656 | 1 |
| 2 | Spain | Colunga | Asturias | 43.4710 | -5.2070 | 1 |
| 2 | Spain | Condado | Asturias | 43.2370 | -5.5045 | 1 |
| 2 | Spain | Corvera | Asturias | 43.5280 | -5.8704 | 1 |
| 2 | Spain | Cudillero | Asturias | 43.5630 | -6.1848 | 7 |
| 2 | Spain | Degaña | Asturias | 42.9547 | -6.6155 | 1 |
| 2 | Spain | El Entrego | Asturias | 43.2640 | -5.6430 | 3 |
| 2 | Spain | El Franco | Asturias | 43.5540 | -6.8770 | 5 |
| 2 | Spain | Felechosa | Asturias | 43.1032 | -5.5091 | 1 |
| 2 | Spain | Gijón | Asturias | 43.4990 | -5.6160 | 5 |
| 2 | Spain | Gozón | Asturias | 43.6210 | -5.8473 | 1 |
| 2 | Spain | Ibias | Asturias | 43.0003 | -6.8219 | 2 |
| 2 | Spain | Langreo | Asturias | 43.3224 | -5.6915 | 1 |
| 2 | Spain | Las Regueras, Soto | Asturias | 43.4288 | -5.9819 | 3 |
| 2 | Spain | Llanes | Asturias | 43.4211 | -4.7531 | 6 |
| 2 | Spain | Mieres | Asturias | 42.8890 | -5.7780 | 2 |
| 2 | Spain | Morcín | Asturias | 43.2663 | -5.8685 | 2 |
| 2 | Spain | Navia | Asturias | 43.5589 | -6.6974 | 1 |
| 2 | Spain | Oviedo | Asturias | 43.3699 | -5.8788 | 7 |
| 2 | Spain | Peñamellera Alta | Asturias | 43.3106 | -4.7123 | 2 |
| 2 | Spain | Piloña | Asturias | 43.3725 | -5.3721 | 1 |
| 2 | Spain | Ponga, Sellaño | Asturias | 42.6136 | -5.1832 | 1 |
| 2 | Spain | Pravia, Agones | Asturias | 43.4961 | -6.1206 | 1 |
| 2 | Spain | Quirós, Bárzana | Asturias | 43.1582 | -5.9734 | 4 |
| 2 | Spain | Rioseco | Asturias | 43.2325 | -5.4764 | 1 |
| 2 | Spain | Sama | Asturias | 43.2928 | -5.6800 | 1 |
| 2 | Spain | San Martín de Oscos | Asturias | 43.2654 | -6.9617 | 3 |
| 2 | Spain | Santa Cruz de Llanera | Asturias | 43.4628 | -5.9378 | 2 |
| 2 | Spain | Siero | Asturias | 43.3912 | -5.6610 | 3 |
| 2 | Spain | Tapia de Casariego | Asturias | 43.5692 | -6.9437 | 4 |
| 2 | Spain | Vilanova | Asturias | 43.3033 | -6.9940 | 1 |
| 2 | Spain | Villanueva de Oscos | Asturias | 43.3040 | -6.9840 | 1 |
| 2 | Spain | Villaviciosa | Asturias | 43.4850 | -5.4335 | 1 |
| 2 | Spain | Celada | Cantabria | 42.9469 | -4.1033 | 1 |
| 2 | Spain | Cillorigo de Liébana | Cantabria | 43.1794 | -4.5658 | 2 |
| 2 | Spain | Los Tojos | Cantabria | 43.1561 | -4.2517 | 2 |
| 2 | Spain | Reinosa | Cantabria | 42.9947 | -4.1372 | 1 |
| 2 | Spain | Benuza, Pombriego | León | 42.4250 | -6.7090 | 4 |
| 2 | Spain | Boñar | León | 42.8660 | -5.3200 | 1 |
| 2 | Spain | Cacabelos | León | 42.6010 | -6.9460 | 1 |
| 2 | Spain | Castrillo de Cabrera | León | 42.3320 | -6.5420 | 1 |
| 2 | Spain | La Vecilla | León | 42.8252 | -5.4078 | 3 |
| 2 | Spain | León | León | 42.5990 | -5.5780 | 1 |
| 2 | Spain | Matallana de Torío | León | 42.8710 | -5.5160 | 1 |
| 2 | Spain | Morgovejo | León | 42.8460 | -4.9520 | 1 |
| 2 | Spain | Ponferrada | León | 42.5400 | -6.5950 | 1 |
| 2 | Spain | Rioseco de Tapia | León | 42.8444 | -5.4108 | 1 |
| 2 | Spain | Santa Colomba de Curueño | León | 43.2430 | -5.7650 | 1 |
| 2 | Spain | Villamorisca | León | 42.7550 | -4.9980 | 1 |
| 2 | Spain | O Saviñao | Lugo | 42.6338 | -7.6965 | 1 |
| 2 | Spain | Ribadeo | Lugo | 43.5500 | -7.1490 | 2 |
| 2 | Spain | Cardaño de Abajo | Palencia | 42.9217 | -4.7751 | 7 |
| 3 | Spain | Casavieja | Avila | 40.3102 | -4.7556 | 1 |
| 3 | Spain | Garganta de los Hornos | Avila | 40.4958 | -5.1646 | 29 |
| 3 | Spain | La Adrada | Avila | 40.3129 | -4.6537 | 1 |
| 3 | Spain | Navarredonda de Gredos | Avila | 40.3384 | -5.1360 | 1 |
| 3 | Spain | Piedralaves | Avila | 40.3173 | -4.6965 | 1 |
| 3 | Spain | San Martín de la Vega | Avila | 40.4256 | -5.1949 | 47 |
| 3 | Spain | Villanueva de la Vera | Cáceres | 40.1449 | -5.4263 | 2 |
| 3 | Spain | Cantalojas | Guadalajara | 41.2294 | -3.2911 | 1 |
| 3 | Spain | Cercedilla | Madrid | 40.7542 | -4.0302 | 15 |
| 3 | Spain | El Escorial | Madrid | 40.5757 | -4.1733 | 1 |
| 3 | Spain | Navacerrada | Madrid | 40.7291 | -3.9999 | 2 |
| 3 | Spain | Montejo de la Sierra | Segovia | 41.1033 | -3.4898 | 1 |
| 3 | Spain | Navafría | Segovia | 41.0401 | -3.8244 | 3 |
| 3 | Spain | San Ildefonso | Segovia | 40.8767 | -4.0239 | 9 |
| 3 | Spain | San Rafael | Segovia | 40.7144 | -4.1846 | 12 |
| 3 | Spain | Sepúlveda | Segovia | 41.2950 | -3.7507 | 1 |
| 3 | Spain | Gredos | Avila | 40.3386 | -5.1729 | 2 |
| 4 | Portugal | Castelo Branco | Castelo Branco | 39.8945 | -7.0379 | 2 |
| 4 | Portugal | Coimbra | Coimbra | 40.2117 | -8.4087 | 3 |
| 4 | Portugal | Gouveia | Guarda | 40.4592 | -7.6478 | 1 |
| 4 | Portugal | Guarda | Guarda | 40.5367 | -7.2454 | 1 |
| 4 | Portugal | Manteigas | Guarda | 40.3761 | -7.5486 | 7 |
| 4 | Portugal | Caranguejeira | Leiria | 39.7641 | -8.7215 | 1 |
| 4 | Portugal | Leiria | Leiria | 40.0243 | -8.1892 | 1 |
| 4 | Portugal | Cadaval | Lisboa | 39.0586 | -9.0066 | 1 |
| 4 | Portugal | Sintra | Lisboa | 38.8754 | -9.3131 | 1 |
| 4 | Portugal | Parque da Arrabida | Setúbal | 38.4690 | -9.0636 | 1 |
| 4 | Portugal | Vila Cova à Coelheira | Viseu | 40.8800 | -7.8023 | 2 |
| 5 | Spain | Aín | Castellón | 39.8971 | -0.3425 | 6 |
| 5 | Spain | Alcudia de Veo | Castellón | 39.9153 | -0.3531 | 6 |
| 5 | Spain | Arañuel | Castellón | 40.0712 | -0.4856 | 1 |
| 5 | Spain | Bejís | Castellón | 39.9035 | -0.7044 | 2 |
| 5 | Spain | Benitandus | Castellón | 39.9284 | -0.3367 | 2 |
| 5 | Spain | Castillo de Villamalefa | Castellón | 40.1611 | -0.3850 | 1 |
| 5 | Spain | El Toro | Castellón | 39.9382 | -0.7605 | 4 |
| 5 | Spain | El Toro | Castellón | 39.9609 | -0.7262 | 3 |
| 5 | Spain | Puebla de Benifasar | Castellón | 40.6672 | 0.2110 | 3 |
| 5 | Spain | Vistabella | Castellón | 40.2818 | -0.2742 | 1 |
| 5 | Spain | Cañizares | Cuenca | 40.5162 | -2.1905 | 2 |
| 5 | Spain | Cuenca | Cuenca | 40.2040 | -2.0073 | 7 |
| 5 | Spain | Tragacete | Cuenca | 40.4275 | -1.8972 | 4 |
| 5 | Spain | Aliaga | Teruel | 40.6708 | -0.7079 | 1 |
| 5 | Spain | Allepuz | Teruel | 40.4930 | -0.7454 | 1 |
| 5 | Spain | Camarena de la Sierra | Teruel | 40.1458 | -1.0434 | 2 |
| 5 | Spain | El Vallecillo | Teruel | 40.2161 | -1.5480 | 4 |
| 5 | Spain | Fuentes de Rubielos | Teruel | 40.1596 | -0.5697 | 3 |
| 5 | Spain | Linares de Mora | Teruel | 40.2927 | -0.5364 | 2 |
| 5 | Spain | Mora de Rubielos | Teruel | 40.2473 | -0.7534 | 2 |
| 5 | Spain | Orihuela del Tremedal | Teruel | 40.5475 | -1.6619 | 18 |
| 5 | Spain | Teruel | Teruel | 40.3452 | -1.1231 | 1 |
| 5 | Spain | Castielfabib | Valencia | 40.1256 | -1.4210 | 1 |
| 5 | Spain | Godelleta | Valencia | 39.4263 | -0.6829 | 1 |
| 5 | Spain | Millares | Valencia | 39.2333 | -0.7871 | 2 |
| 5 | Spain | Quesa | Valencia | 39.1224 | -0.7434 | 1 |
| 5 | Spain | Sinarcas | Valencia | 39.7634 | -1.2255 | 1 |
| 5 | Spain | Titaguas | Valencia | 39.8474 | -1.1458 | 1 |
| 5 | Spain | Vallanca | Valencia | 40.0535 | -1.3469 | 1 |
| 5 | Spain | No data | Valencia |  |  | 1 |
| 6 | Spain | Abrucena | Almería | 37.1178 | -2.8118 | 3 |
| 6 | Spain | Fondón | Almería | 36.9873 | -2.8449 | 1 |
| 6 | Spain | Ohanes | Almería | 37.0471 | -2.7567 | 4 |
| 6 | Spain | Paterna del Río | Almería | 37.0327 | -2.9456 | 3 |
| 6 | Spain | Albolote | Granada | 37.2987 | -3.6613 | 2 |
| 6 | Spain | Aldeire | Granada | 37.1465 | -3.0738 | 2 |
| 6 | Spain | Bérchules | Granada | 37.0388 | -3.2023 | 3 |
| 6 | Spain | Dúrcal | Granada | 37.0111 | -3.5623 | 2 |
| 6 | Spain | Ferreira | Granada | 37.1121 | -3.0328 | 3 |
| 6 | Spain | Granada | Granada | 37.1800 | -3.5587 | 2 |
| 6 | Spain | Güéjar Sierra | Granada | 37.1486 | -3.4162 | 7 |
| 6 | Spain | Huéneja | Granada | 37.1637 | -2.9517 | 4 |
| 6 | Spain | La Peza | Granada | 37.2718 | -3.3318 | 14 |
| 6 | Spain | Lanjarón | Granada | 36.9188 | -3.4914 | 4 |
| 6 | Spain | Lanteira | Granada | 37.1534 | -3.1341 | 3 |
| 6 | Spain | Laroles | Granada | 37.0668 | -3.0465 | 3 |
| 6 | Spain | Monachil | Granada | 37.1281 | -3.5145 | 1 |
| 6 | Spain | Nigüelas | Granada | 36.9886 | -3.5128 | 2 |
| 6 | Spain | Pampaneira | Granada | 36.9441 | -3.3635 | 2 |
| 6 | Spain | Quéntar | Granada | 37.2378 | -3.4069 | 6 |
| 6 | Spain | Torvizcón | Granada | 36.8860 | -3.3384 | 2 |
| 6 | Spain | Alpujarra de la Sierra | Granada | 37.0558 | -3.1308 | 2 |