

The Cladocera Interest Group

NOTES to the Revised British species list for the Branchiopoda: Cladocera & Branchiopoda: Leptodorida. The Water Fleas.

Introduction

This document details the reasoning behind taxonomic changes, additions and deletions made to the original RA31 Checklist of Cladocera published by the Biological Records Centre, 1977. It accompanies the revision of the British species list for the Branchiopoda: Cladocera and Branchiopoda: Leptodorida, distributed by the Cladocera Interest Group, September 2011.

Two new families, the Acantholeberidae and Ophryoxidae have been split off from the Macrothricidae. This is based on the work of a number of taxonomists which is summarised in the following papers:

Dumont & Negrea, (2002)
Forro, Korovchinsky, Kotov, & Petrusek, (2008)
Korovchinsky, (2006)

Both these notes and the revised list may be freely distributed to any interested parties. Any communications about either document may be sent to admin@cladocera.org.uk

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Cladocera Interest Group, 10th September 2011

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8: *Ceriodaphnia megops* Sars, 1862

Spelling change, listed as *Ceriodaphnia megalops* on the RA31 checklist and in Scourfield & Harding (1966).

10.5: *Ceriodaphnia quadrangula* f. *hamata* (Sars)

This form of *C. quadrangula* has been found in Yorkshire by Geoffrey Fryer and also is known from Norfolk. Fryer (1993)

17: *Daphnia galeata* Sars, 1864

See FADA checklist, Biolist (2008) and Amoros (1984)

This species keys out as *Daphnia hyalina* var. *galeata* in Scourfield & Harding (1966).

22: *Daphnia parvula* Fordyce, 1901

'*Daphnia parvula* has recently been recorded (but not yet published) from a pond in Surrey.' Jim Green (Pers. Comm.)

24: *Daphnia rosea* Sars, 1862

Daphnia rosea is regarded as a good species in North America, and Brooks (1957) mentions its occurrence in England. I have seen specimens agreeing with Sars original description. I would leave this on the list, although some people do not regard it as being separable from *D. longispina*'. Jim Green (Pers. Comm.)

D. rosea is on the FADA checklist but not in Biolist (2008), the RA31 checklist or Amoros (1984). See also addendum in Scourfield & Harding (1966).

25: *Megafenestra aurita* (Fischer, 1849)

Name changed to *M. aurita* in revision by Dumont & Pensaert (1983), see FADA checklist.

Keys out to *Scapholeberis aurita* in Scourfield & Harding (1966) and in Amoros (1984). Also listed as *S. aurita* on the RA31 checklist.

30: *Moina brachiata* (Jurine, 1820)

Keys out to *Moina rectirostris* in Scourfield & Harding (1966) which is a synonym of *M. brachiata*.

32: *Moina micrura* Kurz, 1874

Not in Scourfield & Harding (1966) and not on RA31 checklist, though it is listed in Biolist (2008), on the NBN & keys out in Amoros (1984).

Species retained but without any known British records. Hence listed here as *species inquirenda*.

33: *Bosmina coregoni* Baird, 1857

'The records of this species from Scotland are still regarded as valid (cf. Lieder, 1996)' Jim.Green (Pers. Comm.)

34: *Bosmina longirostris* (Müller, 1785)

34.5: *Bosmina longirostris* var. *cornuta* (Jurine)

Bosmina longirostris var. *cornuta* is clearly an adapted form of *Bosmina longirostris* that is easy to separate from the normal form, see Scourfield & Harding (1966). There is some evidence that this change in exoskeleton morphology occurs as a response to increased predation by planktivores, Sanford (1993). Therefore it has been given a separate listing on our species list in the expectation that recording this form more widely may eventually prove a reliable indicator of planktivory within freshwater ecosystems, both in contemporary and subfossil studies.

35: *Bosmina longispina*. Leydig, 1860

Scourfield & Harding (1966) list this species under *Bosmina coregoni* var. *longispina*; Biolist (2008) and NBN use *Bosmina longispina*. Amoros (1984) has neither. FADA (2009) lists *B. longispina* as a synonym of *B. coregoni*. At present the name is used in this list 'in the wide sense' pending definite conclusions on the status of *B. longispina*.

39: *Eurycercus glacialis* Lilljeborg, 1887

Keyed out but not figured in Scourfield & Harding (1966), it is in Biolist (2008) & on NBN: Not Included in Amoros (1984). Jim Green reported there have been recent records from the British Isles, and Elvira de Eyto tells us that Catherine Duigan has recent records of the species from Ireland.

42: *Acroperus angustatus* Sars, 1863

This species is keyed out in Scourfield & Harding (1966) and Amoros (1984); it is on the NBN and on the FADA checklist. However for some reason it is not in Biolist (2008).

43: *Alona affinis* (Leydig, 1860)

Alona affinis is listed in Biolist (2008), Scourfield & Harding (1966) & on the NBN; Amoros (1984) has *Biapertura affinis* and states that *A. affinis* is synonym of *B. affinis*.

However "The genus *Biapertura* Smirnov, 1971 separated by Smirnov (1971) from *Alona* Baird, 1843, as originally defined, is an artificial assemblage (Fryer 1987, Sinev 1999a, Dumont & Silva-Briano 2000)." Van Damme, Kotov & Dumont (2010). Therefore we have followed Van Damme et. al. in regarding the *Alona affinis* group as valid.

Alona affinis is used here 'in the wide sense' pending definite conclusions about recent splits in the genera *Alona* (as also advised by Jim Green) and until any other British members of the group can be satisfactorily confirmed.

The full list of the *Alona affinis* group, Van Damme, Kotov & Dumont (2010) is; *A. Affinis* (Leydig, 1860), *A. barbata* Brehm, 1935, *A. dentata* Werestschagin, 1911, *A. elegantula* Brehm, 1933, *A. elliptica* Sinev, 1997, *A. kendallensis* Henry, 1919, *A. longirostris* Henry, 1919, *A. martensi* Sinev, 2009, *A. oblonga* PE Müller, 1868,

A. ornata Stingelin, 1895, *A. ossiani* Sinev, 1998, *A. spinifera* Schoedler, 1858, *A. tovelana* Baldi, 1941, *A. whiteleggei* Sars, 1896. Of which only *A. affinis* is confirmed as a British species.

44: *Alona costata*. Sars, 1862

"The *A. costata* group contains a number of species, of which several are in the related *A. rustica* group", Van Damme, Kotov & Dumont (2010). So we use the name 'in the wide sense' pending definite conclusions about recent splits in the genera *Alona* and until any other British members of the group can be satisfactorily confirmed.

45: *Alona elegans*. Kurz, 1874.

"Valid species, oldest name in the *Alona elegans* complex. Dumont et al. (1979) suggested *A. elegans* and *A. rectangula* (now *C. rectangula*) may form hybrids. The *A. elegans* complex is a member of the *Coronatella* branch, does not belong in *Alona* and should be removed from the latter genus. Its position is close to, or even in, *Coronatella*; a revision of the *A. elegans* group is, however, lacking." Van Damme, Kotov & Dumont (2010).

We use the name 'in the wide sense' pending definite conclusions about recent splits in the genera *Alona* and until a revision of the *A. elegans* group is forthcoming.

47: *Alona intermedia* Sars, 1862

A. intermedia is listed in Biolist (2008), Scourfield & Harding (1966), & is on the NBN; *Biapertura intermedia* is used by Amoros (1984) who states that *A. intermedia* is a synonym of *B. intermedia*. "A complex with different species, not yet unravelled or revised. Listed as *Biapertura intermedia* in Smirnov (1971)" Van Damme, Kotov & Dumont (2010).

Alona intermedia is therefore used 'in the wide sense' pending a revision of the complex and definite conclusions about recent splits in the genera *Alona* (as also advised by Jim Green).

50: *Alona rustica*. Scott, 1895

"Described as *Alona rustica* Scott, 1895 from the Shetland Islands, Scotland, UK (Scott 1895). True *A. rustica* is a valid Palaearctic species. Morphology in Frey (1965a), Alonso (1996) and Sinev (1999a)." Van Damme, Kotov & Dumont (2010). Other members of the group are Nearctic: *A. rustica americana* Flössner & Frey (1970) and a tuberculate variety in Eastern Europe *Alona rustica tuberculata* Maëmets, 1958 from Estonia.

48: *Alona karelica* Stenroos, 1897

51: *Alona weltneri* Keilhack, 1905

A. karelica has not been recorded in the British Isles, *A. weltneri* was first recorded in 1907 Scourfield (1907) but remains very rare. There is a possibility that both are true relict species.

Both species have been redescribed in Van Damme et al. (2011). Kay Van Damme feels that it may possibly be found in the UK in Sphagnum Bogs. On this advice and with the absence of actual records *A. karelica* has been introduced into the list as *species inquirenda*.

60: *Chydorus latus* Sars, 1862

John Bratton (Pers. Comm.) "D.J. Scourfield clearly had difficulties with *Chydorus latus*. In 1895 he corrected earlier records of *C. ovalis* from Leytonstone, Essex, saying "I now think that this form agrees better with *C. latus* than *C. ovalis*", and gave further records of his from North Wales. However, by the time of his *Synopsis of British Entomostraca* (1903) he had reassigned his own *C. latus* records back to *C. ovalis*, while still recognising *C. latus* as a valid species. In 1912 he wrote "I am not quite sure that they [Irish specimens assigned to *latus*] are to be looked upon as distinct from *C. sphaericus*" but *C. latus* was included in his key to British Cladocera 3rd edition: Scourfield & Harding (1966). Smirnov (1996) wrote "there presently is no convincing evidence for separating *C. latus* Sars from *C. sphaericus*". He listed *C. latus* under *incertae sedis*, which apparently means taxa of uncertain affinity."

63: *Coronatella rectangula* (Sars, 1862)

Listed as *Alona rectangula* in Scourfield & Harding (1966) ... " All *A. rectangula* forms are far from *Alona*. Van Damme & Dumont (2008b) assigned this group to a separate genus, for which thorough literature research revealed an available name. Housed in the genus *Coronatella* Dybowski & Grochowski, 1894, it is now known as *Coronatella rectangula* (Sars, 1861)." Van Damme, Kotov & Dumont (2010).

64: *Disparalona rostrata* (Koch,1841)

Keys out to *Rhynchotalona rostrata* in Scourfield & Harding (1966). This name change was detailed in the addendum to 1966 edition.

65: *Dunhevedia crassa* King, 1853

This species is not keyed out in Scourfield & Harding (1966) but has been shown to occur in the UK. It is in Biolist (2008), on the NBN & is keyed in Amoros (1984). A summary of British records and notes on identification by John Bratton will appear in Newsletter 2 of the Cladocera Interest Group.

69: *Leydigia leydigi* (Schoedler, 1862)

Although Amoros (1984) gives *L. leydigi* as a synonym of *L. quadrangularis*, both Biolist (2008) and the FADA checklist confirm that *L. leydigi* is the correct form in agreement with Scourfield & Harding (1966). The NBN list both forms of the name.

71: *Oxyurella tenuicaudis* (Sars, 1862)

Keys out as *Alona tenuicaudis* in Scourfield & Harding (1966). "Described as *Alona tenuicaudis* Sars, 1862 from Norway (Sars 1862). Removed from *Alona* by Dybowski & Grochowski (1894) to *Oxyurella* Dybowski & Grochowski, 1894 and type species of the genus. Valid species, now *Oxyurella tenuicaudis* (Sars, 1862)." Van Damme, Kotov & Dumont, (2010). *O. tenuicaudis* is already listed on the NBN, in Biolist (2008) & is keyed out in Amoros (1984).

73: *Phreatalona protzi* (Hartwig, 1900)

Originally *Alona protzi* Hartwig, 1900 ... " Now *Phreatalona protzi*, and this is a valid genus - it is very far from *Alona*" ... pers comment Kay Van Damme.

"Peculiar ecology, prefers interstitial; removed from *Alona* to *Phreatalona* Van Damme, Brancelj & Dumont, (2009). *A. protzi* is the type species of the genus Van Damme *et al.* (2009), now named *Phreatalona protzi* (Hartwig, 1900)." Van Damme, Kotov & Dumont (2010).

Keys out as *Alona protzi* in Scourfield & Harding (1966) and also in Amoros (1984).

72: *Paralona pigra* (Sars, 1862)

Name change: originally *Chydorus piger* Sars, 1862 ... " It is clearly not a Chydorus... See Smirnov (1992)" ... pers. Comm. Kay Van Damme.

Keys out as *C. piger* in Scourfield & Harding (1966) and in Amoros (1984).

78: *Pleuroxus truncatus* (Müller, 1785)

Listed as such in Amoros (1984) & on the NBN. *Peracantha truncata* is a synonym of *Pleuroxus truncatus* and this synonym is used on the original RA31 checklist and by Scourfield & Harding (1966).

80: *Pseudochydorus globosus* (Baird, 1843)

The synonym *Chydorus globosus* was used in the text of Scourfield & Harding (1966) but the name change was shown in the addendum to the 3rd edition 1966.

82: *Tretocephala ambigua* (Lilljeborg, 1900)

Keys out under the synonym *Alonopsis ambigua* in Scourfield & Harding (1966). Correctly named on the NBN, RA31 checklist, Biolist (2008) and Amoros (1984).

83: *Ophryoxus gracilis* Sars, 1861

Is not keyed in Amoros (1984) but is included in Scourfield & Harding (1966).

89: *Macrothrix rosea* (Jurine, 1820)

Echinisca rosea and *E. tenuicornis* are both synonyms of *Macrothrix rosea*, see the FADA checklist and Amoros (1984). This species keys out to *E. rosea* in Scourfield & Harding (1966).

Possible additional species:

It has been suggested, Duigan (1992), that *Acroperus* and *Chydorus* contain undescribed Irish species. Similarly *Alona*, as a 'lump genus', is very likely to contain segregates: see Van Damme *et al.* (2011). *Ceriodaphnia* may throw up similar problems. For that reason the numbering system adopted here is merely temporary. In consultation with the Biological Records Centre species codes will be adopted, as in the 1977 RA31 record card, allowing gaps in the run of numbers to allow for segregates.

Species removed from the original RA31 checklist or not included in this review.

Those included in the original RA31 checklist are marked thus: **

- **Podonidae**

As marine species the Podonidae have not been included in this list. The Cladocera Interest Group was set up to further the study of freshwater species. This does not preclude their possible inclusion in the future.

- **Diaphanosoma: *Diaphanosoma leuchtenbergianum*** Fischer, 1850

D. leuchtenbergianum is on Biolist (2008) as a separate species but does not appear in Korovchinsky's (1992) revision of the genus, nor on the original RA31 card. He indicates that the name has been used for various other species. Flossner (2000) gives it as a synonym of *D. brachyurum* and says that the name has also been used mistakenly for *D. mongolianum*, a species not recorded in Britain. Therefore it is not included on this revised British list.

Ceriodaphnia:

- ** *Ceriodaphnia rotunda* (Straus, 1820)

This is species number 907 on the original RA31 record card and is listed on the NBN. Flossner (2000) says that *C. rotunda* is absent from the British Isles. The description in Baird (1850) is inadequate, and his records indicate a much more widespread species. It is not in Biolist (2008), Scourfield & Harding (1966) say British records are uncertain and Amoros (1984) has it as very rare in France. It is thought therefore to be safest to leave it off this list.

- *Ceriodaphnia reticulata* var. *kurzi* (Stingelin)
- *Ceriodaphnia reticulata* var. *serrata* (Sars)

Both these species were included as variations to *C. reticulata* in Scourfield & Harding (1966). However the FADA checklist (2009) gives both as synonyms for *C. reticulata*.

Daphnia:

- *Daphnia carinata* King var. *similis* (Claus)
- *Daphnia similis* Claus, 1876
- ** *Daphnia carinata* is species number 1103 on the original RA31 record card.

Jim Green (Pers. Comm.) 'I don't know any valid British records of these synonyms, and would leave them both off the list.' *D. carinata* v *similis* is not in Biolist, Scourfield & Harding (1966) say there is no confirmed British record, it is not on the NBN. The original RA31 record card has it as *D. carinata*.

- *Daphnia cucullata* var. *apicata* Kurz
- *Daphnia cucullata* var. *kahlbergensis* Schodler

Although both these species appear in Scourfield & Harding (1966) they have been left off this revision because the FADA checklist (2009) shows both are synonyms for *Daphnia cucullata*.

- *Daphnia hyalina* var. *pellucicula* Sars
- *Daphnia hyalina* var. *lacustris* Sars

These variations are keyed out in Scourfield & Harding (1966) but do not appear in Biolist (2008) or the FADA checklist (2009).

Scapholeberis

- *Scapholeberis kingi* Sars, 1903

Is neither in Biolist (2008), Scourfield & Harding (1966) nor on the NBN, it is only keyed out in Amoros (1984).

'S. kingi has not been recorded in Britain as far as I know'. - Jim Green (Pers. Comm.)

Bosmina

Varieties not in Biolist (2008), but which are in Scourfield & Harding (1966) have been removed as doubtful. only *B. longirostris* var. *cornuta* is retained as explained above.

- *Bosmina coregoni* var. *lacustris* (Sars)
- *Bosmina coregoni* var. *lilljeborgi* (Sars)
- *Bosmina coregoni* var. *longicornis* (Schodler)
- *Bosmina coregoni* var. *obtusirostris* (Sars)
- *Bosmina longirostris* var. *brevicornis* Hellich
- *Bosmina longirostris* var. *similis* (Lilljeborg)

Acroperus

- ** *Acroperus elongatus* Sars, 1862

This was species number 202 on the old RA31 record card. It has been deleted as it is a synonym of *Alonopsis elongata*. (Amoros (1984) & the NBN do list *Acroperus elongatus*)

Chydorus

- *Chydorus brevilabris* Frey, 1980

This species is keyed out only by Amoros (1984) 'This was described from North America: I don't know any records from Britain' - Jim Green (Pers. Comm.) See also the FADA checklist (2009).

- *Chydorus sphaericus* var. *coelatus* (Schodler)
- *Chydorus sphaericus* var. *leonardi* (King)

These varieties, not in Biolist (2008) or the FADA checklist (2009) but which are in Scourfield & Harding (1966), have been removed as doubtful.

Pleuroxus

- *Pleuroxus striatus* Schoedler, 1863

This species is only keyed out in Amoros (1984). No British records have been located.

Rhynchotalona

- *Rhynchotalona kistarae* Roen, 1973

This species is only keyed out in Amoros (1984). There are records from Greenland but none from the UK.

Acantholeberis

- *Bunops serricaudata* (Daday, 1888)

This species is keyed out only by Amoros (1984) 'It was described from North America: I don't know any records of *Bunops* from Britain' - Jim Green (Pers. Comm.). See also the FADA checklist (2009).

Bythotrephes

- *Bythotrephes cederstroemi* Schödler, 1863

Not included in Amoros (1984). It is in S&H & Biolist (2008). "Bythotrephes longimanus is regarded as a variable species by Rivier (1998), who includes *B. cederstroemi* within its range of variation." Jim Green (Pers. Comm.) Therefore only *B. longimanus* is included on this list.

Echinisca

- *Echinisca rosea* Lieven 1848
- *Echinisca tenuicornis* Kurz, 1875

Both of these two species have been shown to be synonyms of *Macrothrix rosea*, see FADA checklist October 2010.

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