

xread 'Data from Ortega-Hernández et al. (2013) with addition of Acanthomeridion based on new data presented here (above) and character list from that same publication (below). For more details see Ortega-Hernández et al. (2013) The phylogeny of aglaspidid arthropods and the internal relationships within Artiopoda. Cladistics 29:15-15'

82 59

Aglaspella ?????????????????11?00000?10?00?101101111?  
100000000010021010????101100?10?00?000

Aglaspis 1??04??11????????11?00000?10000?  
11101111101000000000011021010????101100?10?00?000

Alalcmeneus 0112400010???0?2110100000?00400?0?  
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Australaglaspis ????????1????????11?00000?00000?10110?0111?  
1000000000?0?21010????100101?10?0??001

Beckwithia ?????????????????11?00000?10?00?1110001111?1000000?  
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Buenaspis ??????????????????00000?10?00?0?02000011?  
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Burgessia 1??0400010???0?000???000?10400?0?  
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Cheloniellon 1??0511010???0?1111?00000?10100?0?  
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Chinese\_taxon ?????????????????11?00000?10?00?1010011111?200??00?  
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Chlupacaris ?????????????????11?00000?10100?1??2?0?111??0??  
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Chraspedops ?????????????????11?00000?10?00?1011011111?  
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Cindarella 1??05000110011101000000?10100?0?  
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Cycloplites ?????????????????11?00000?10?00?1002000111?  
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Dicranocaris ??????????????????0000??0?00?0?01000011?  
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Emeraldella 1??041001100110110????000?10000?0?  
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Eoredlichia 1??0400111000101111?10000?  
1030111010000111020000000001000?001110000?????00?00011?

Eurypterida 0201611004???0?0111?00010?  
104010100100101101000000000000311001???100100?00?00?00?

Floberlia ????????1????????11?00000?10000?10?2001111?100000?  
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Fortiforceps 0201400010???0?1010100000?00400?0?  
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Glypharthrus ?????????????????11?00000?10?00?1000111111?  
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Haikoucaris 0101400010???0?2010100000?00400?0?  
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Helmetia ?????4????????????1000?000?11210?0?  
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Jiangfengia 0001400010???0?1010100000?00400?0?  
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Kodymiros ?????????????????11?00000?10000?0?11001011?  
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Kuamaia 1??0?00?11011100110001000?11210?0?01000011020000011001000?  
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Kwanyinaspis 1??0?00?11000101110001000?10000?  
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Leancoilia 0112400010???0?2110?00000?00400?0?  
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Liwia 1??0?00?11????1?????????00??0?0?0?01000011010010100000000??  
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Marrella 1??021?012???0??00????000?00?00?0?  
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Martinssonina 1??0500012???0??10??00000000400?0?  
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Mimetaster 1??0311012???0??010000000?00100?0?  
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Misszhouia 1??050011110111110000000?10110?0?020000100?  
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N\_compacta 1??05001111011111000000?10100?0?020000100?  
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N\_spinosa 1??0500111010111110000000?10100?0?000000100?  
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Nebalia 1??0500012???0??110100001100400?0?  
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Nellapezoura ??????????0??0?1?????0000??0?00?0?01000011?  
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Olenoides 1??0400111001101111?10000?  
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Pseudoarthron ??????????????????000??0?0?0?02000011?  
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Pycnogonida 020171100???0?0011?00010?00400?0?0?  
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Quasimodaspis ??????????????????11?00000?10?00?1011000111?  
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Rebachiella 1??0500012???0??110100001100400?0?  
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Retifacies 1??0400?13???101110000000?10000?0?  
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Saperion 1??0?0??11011100010001000?11210?0?0?0000100?11??  
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Sidneyia 1??011?013???100110000000?1000??0?  
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Sinoburius 1??0500011???10??10001100?10100?0?  
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Skioldia 1??0?00?11???10??10001000?11210?0?0?000011??11??  
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Soomaspis ??????????????????0000?10?00?0?02000011?  
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Squamacula 1??010?010???0?110??00000?10000?0?  
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Tariccoia ??????????????????0000?10?00?0?02000011?  
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Tremaglaspis ??????????????????0??0000?10100?0?02000111?  
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Triopus ??????????????????0??00000?0?00?0?12000011?  
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Uarthrus ??????????????????11?00000?10?00????1001111?  
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Weinbergina 0201611004??0?0111?00010?  
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Xandarella 1??070001110111110000100?10100?0?  
01000011110021000100000?001010?10??????00?00000?

Yohobia 0101400010??0?1010100000?00400?0?  
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Acanthomeridion ??????????????????0??0000??0?011??010?0011?10?  
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Matix of Ortega-Hernández et al (2013) with addition of Acanthomeridion based on new data presented here (above) and character list from that same publication (below). For more details see Ortega-Hernández et al. (2013) The phylogeny of aglaspidid arthropods and the internal relationships within Artiopoda. Cladistics 29:15-15.

1. Nature of first cephalic appendage: (0) raptorial appendage; (1) antennae.
2. Number of spine-bearing podomeres in raptorial appendage: (0) four; (1) three; (2) two.
3. Distal spines of raptorial appendage terminating in annulated flagellae: (0) absent; (1) present.
4. Length of distal spines on terminal podomeres of first appendage: (0) absent or shorter than podomere; (1) subequal to length of podomeres; (2) longer than entire podomere series.
5. Number of appendage bearing post-ocular segments incorporated into the head / prosoma.
6. Nature of second (first post-antennal/raptorial) cephalic appendage: (0) biramous walking leg or antennae; (1) uniramous walking leg.
7. Nature of third (second post-antennal / raptorial) cephalic appendage: (0) biramous walking leg; (1) uniramous walking leg.
8. Appendages of first thoracic somite underneath the cephalo-

- thoracic articulation: (0) absent; (1) present.
9. Trunk endopods: (0) absent or reduced; (1) present.
10. Exopod structure: (0) simple oval flap; (1) exopod differentiated into proximal and distal lobes, the proximal lobe bearing lamellar setae, the distal lobe bearing short setae; (2) numerous podomeres, each bearing a single setae; (3) undivided exopod with lamellar setae; (4) book gills.
11. Proximal lobe of exopod: (0) flattened lobe; (1) slender shaft.
12. Distal lobe of exopod: (0) small to moderate sized flap; (1) large, teardrop shaped lobe with long attachment.
13. Divided exopod with septum: (0) absent; (1) present.
14. Imbricate exopod lamellae: (0) absent; (1) present.
15. Lamellae: (0) thick, flat lamellae; (1) delicate, comb-like lamellae.
16. Non-overlapping marginal setae: (0) absent; (1) small setae; (2) long spines or filaments.
17. Gnathobasic limbs: (0) absent; (1) present.
18. Lateral eyes: (0) absent; (1) present.
19. Nature of lateral eyes: (0) stalked; (1) sessile.
20. Ventral eyes in front of the head: (0) absent; (1) present.
21. Visual surface with calcified lenses, bounded with circumocular suture: (0) absent; (1) present.
22. Dorsal bulge in exoskeleton accommodating drop-shaped ventral eyes: (0) absent; (1) present.
23. Eye slits: (0) absent; (1) present.
24. Dorsal median eyes: (0) absent; (1) present.
25. Free head shield: (0) absent; (1) present.
26. Bivalved head shield: (0) absent; (1) present.
27. Expanded cephalic doublure: (0) absent; (1) present.
28. Anteromedian margin of cephalon notched, accommodating strongly sclerotised plate: (0) absent; (1) present.
29. Hypostomal sclerite: (0) median extension of the doublure, with no suture; (1) natant, sclerite not in contact with doublure; (2) with narrow overlap with pre-hypostomal sclerite; (3) narrow attachment to doublure at hypostomal suture; (4) absent.
30. Arcuate anterior sclerite: (0) absent; (1) present.
31. Visible ecdysial dorsal sutures: (0) absent; (1) present.
32. Position of ecdysial sutures: (0) marginal; (1) dorsal.
33. Elevated marginal rim: (0) absent; (1) present.
34. Marginal rim ornamented: (0) absent; (1) present.
35. Glabellar furrows or lobes: (0) absent; (1) present.
36. Carapace outline: (0) genal spines; (1) acute genal angles; (2) rounded genal angles; (3) lateral spine-like extensions of the carapace.
37. Posterior cephalic band: (0) absent; (1) present.
38. Cephalic furrows: (0) absent; (1) present.
39. Cuticle sculpture: (0) absent; (1) present.
40. Mineralized cuticle: (0) absent; (1) present.
41. Trunk tergites with expanded lateral pleurae covering appendages dorsally: (0) absent; (1) present.
42. Free thoracic tergites: (0) absent; (1) present.
43. Decoupling of thoracic tergites and segments: (0) absent; (1) present.

44. Tergite articulations: (0) tergites non-overlapping; (1) extensive overlap of tergites; (2) edge-to-edge pleural articulations.
45. Dorsal trunk effacement: (0) trunk with defined (separate or fused) tergite boundaries; (1) trunk tergite boundaries effaced laterally; (2) trunk tergite boundaries completely effaced.
46. Cephalic articulation fused: (0) absent; (1) present.
47. Head shield overlap of thoracic tergites: (0) overlap absent or identical to overlap between thoracic segments; (1) head shield covers first thoracic tergite only; (2) head shield covers multiple anterior trunk tergites.
48. Head shield articulates with reduced anterior thoracic tergite: (0) absent; (1) present.
49. Trunk narrowed anteriorly relative to head shield, widest posteriorly: (0) absent; (1) present.
50. Boundaries of anterior trunk segments reflexed anterolaterally: (0) absent, boundaries transverse or reflexed posterolaterally; (1) present.
51. Joints between posterior tergites functional, anterior ones variably fused: (0) absent; (1) present.
52. Posterior tergite bearing axial spine: (0) absent; (1) present.
53. Radial arrangement of pleurae: (0) absent; (1) present.
54. Raised axial region: (0) absent; (1) present.
55. Anterior tergal processes: (0) absent; (1) present.
56. Tuberculation of posterior margin of tergites: (0) absent; (1) present.
57. Axial spines: (0) absent; (1) present.
58. Length of postabdomen: (0) 1 segment; (1) 2 segments; (2) 3 segments; (3) 5 segments.
59. Postabdomen expressed as posterior segments lacking walking legs: (0) absent; (1) present.
60. Postabdomen expressed as posterior differentiated segments: (0) absent; (1) present.
61. Posterior tergites strongly curved in dorsal aspect compared to anterior tergites: (0) absent; (1) present.
62. Pygidium: (0) absent; (1) present.
63. Position of the anus: (0) terminal, within telson; (1) at base of telson.
64. Pygidium with median keel: (0) absent; (1) present.
66. Pygidium with lateral spines: (0) absent; (1) present.
67. Tailspine: (0) absent; (1) present.
68. Tailspine shape: (0) spinose; (1) paddle-shaped; (2) cap-like.
69. Anterior expansion of the tailspine: (0) absent; (1) present.
70. Length of tailspine: (0) shorter than half the length of the trunk; (1) longer than half the length of the trunk.
71. Spines on tailspine: (0) absent; (1) present.
72. Tailspine with medial cleft: (0) absent; (1) present.
73. Paddle with projections: (0) absent; (1) present.
74. Postventral plates: (0) absent; (1) present.
76. Nature of pre-terminal appendages: (0) uropods; (1) furca.
77. Reduced carapace: (0) absent; (1) present.
78. Width of doublure: (0) narrow to moderately wide; (1) wide; (2) covers entire ventral side of cephalon.
79. Relative length of thorax: (0) longer than pygidium; (1)

shorter than pygidium.

80. Articulating half rings: (0) absent; (1) present.

81. Axial furrows: (0) absent; (1) present.

82. Postventral plate medial attachment: (0) narrow attachment by central portion; (1) wide longitudinal attachment.

comments OrtegaH2012MW3.tnt;

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