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Publisher: Taylor & Francis

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UK



Annals and Magazine of Natural History: Series 7

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/tnah13>

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Published online: 01 Dec 2009.

To cite this article: Canon A. M. Norman M.A., D.C.L., LL.D., F.R.S. (1905) VIII.—Revised Nomenclature of the Species described in Bate and Westwood's 'British Sessile-eyed Crustacea', *Annals and Magazine of Natural History: Series 7*, 16:91, 78-95, DOI: [10.1080/03745480509443653](https://doi.org/10.1080/03745480509443653)

To link to this article: <http://dx.doi.org/10.1080/03745480509443653>

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VIII.—*Revised Nomenclature of the Species described in Bate and Westwood's 'British Sessile-eyed Crustacea.'* By
 Canon A. M. NORMAN, M.A., D.C.L., LL.D., F.R.S.

THE work of Bate and Westwood from the first presented great difficulties to the student of the Amphipoda and Isopoda in consequence of the unsatisfactory figures and inadequate descriptions of many of the species. Moreover, with increasing knowledge of these Crustacea extensive changes in nomenclature have become necessary. Hence there lies a heavy stumbling-block in the way of any carcinologist who commences the study of the species represented in our fauna, and only an adequate knowledge of all that during recent years has been written on the subject can at the present time enable the species described in this work to be correctly named.

The object of the present paper is to remove, at any rate partially, this difficulty and bring the nomenclature of Bate and Westwood into juxtaposition with the names which are now employed for the several species. I have, of course, availed myself of all that has been written on the subject by carcinologists, such as the Rev. T. R. R. Stebbing, Mr. A. O. Walker, and others in our own country, and by Professor G. O. Sars and M. Chevreux and others on the Continent, and I trust that I shall moreover be able to throw fresh light on the relationship of certain species which have hitherto not received full elucidation.

There have been very large additions to our knowledge of the species of these two orders which inhabit our seas during recent years, but with such additions these notes have nothing to do.

One new genus is here introduced—*Coremapus* (κόρημα, a brush, and πούς, a foot). Allied to *Microdeutopus*; first gnathopods the largest, complexly subchelate in male and simply subchelate in female as in that genus, but the second gnathopods in both sexes narrow, scarcely subchelate, terminating in a minute nail, the limb forming a brush, the meros, carpus, and manus being densely setose, especially the meros, which is much produced over the carpus. Type, *Coremapus (Microdeutopus) versiculatus*, Bate.

In the earlier part of this paper the species are taken in the order in which they are arranged in our authors' work; the nomenclature, where necessary, is corrected and a number prefixed.

In the latter part the species with their corrected names

are arranged as in the existing leading works upon the subject, those of Professor G. O. Sars, and the affixed number is that under which the species occurs in the previously given list.

I.

The Species described in Bate and Westwood, with correction of names where such correction is required.

Vol. I.

1. *Talitrus locusta* (Linné), p. 16, = *Talitrus locusta* (Pallas).
2. *Orchestia littorea* (Montagu), p. 27.
3. — *mediterranea* (Costa), p. 31.
4. — *Deshayesii*, Audouin, p. 36, = *Orchestoidea Deshayesii* (Audouin) (Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 139).
5. *Allorchestes Nilssonii* (Rathke), p. 40, = *Hyale Nilssoni* (Rathke).
6. — *imbriatus*, Bate, p. 43, = *Hyale Lubbockiana* (Bate), ♂.
7. *Nicea Lubbockiana*, Bate, p. 47, = *Hyale Lubbockiana* (Bate), ♀.
8. *Montagua monoculooides* (Montagu), p. 54, = *Stenothoe monoculooides* (Montagu).
9. — *marina*, Bate, p. 58, = *Stenothoe marina* (Bate).
10. — *Alderi*, Bate, p. 61, = *Metopa Alderi* (Bate), ♀.
11. — *pollexiana*, Bate, p. 64, = *Metopa norvegica* (Lilljeborg) (Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. vi. p. 41).
12. *Danaia dubia*, Bate, p. 68, = *Cressa dubia* (Bate).
13. *Lysianassa Costæ*, Bate and Westwood (nec Milne-Edwards), p. 74, = *Lysianax septentrionalis*, Della Valle.
14. — *Audouiniana*, Bate, p. 79, = *Perrierella Audouiniana* (Bate).
15. — *atlantica*, Bate and Westwood (? Milne-Edwards), p. 82, = *Ambasia Danielsseni*, Boeck (Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. 1900, p. 144).
16. — *longicornis*, Bate and Westwood (nec Lucas), p. 85. The entire figure and the urosome probably taken from *Orchomene humilis* (Costa), ♂, the other dissections from *Lysianax septentrionalis*, Della Valle, ♂ (see Walker, Ann. & Mag. Nat. Hist., Feb. 1892; and Norman, *ibid.* ser. 7, vol. v. p. 142).
17. *Anonyx longicornis*, Bate, p. 91, = *Lepidepecreum longicorne* (Bate), ♂.
18. — *Edwardsi*, Bate (nec Kröyer), p. 94, = *Orchomene humilis* (A. Costa) (see Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. 1900, p. 202).

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19. *Anonyx obesus*, Bate, p. 98, = *Acidostoma obesum* (Bate).
 20. — *denticulatus*, Bate, p. 101, = *Hippomedon denticulatus* (Bate).
 21. — *Holbölli*, Bate and Westwood (nec Kröyer), p. 104, = *Huplonyx cicada* (Fabricius).
 22. — *minutus*, Bate and Westwood (nec Kröyer), p. 108. Perhaps a young male of *Orchomene humilis* (Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. p. 204).
 23. — *plautus*, Bate and Westwood (nec Kröyer), p. 111, = *Menigrates obtusifrons*, Boeck.
 24. — *longipes*, Bate, p. 113, = *Tryphosites longipes* (Bate), ♀.
 25. — *ampulla*, Bate and Westwood (nec Kröyer), p. 116, = *Tryphosites longipes* (Bate), ♂.
 26. *Callisoma crenata*, Bate, p. 120, = *Callisoma Hopei*, Costa.
 27. *Ampelisca Guimardi*, Bate and Westwood (nec Kröyer), p. 127, = *Ampelisca typica* (Bate), ♂.
 28. — *Belliana* (Bate), p. 135, = *Ampelisca brevicornis* (A. Costa).
 29. *Phoxus simplex*, Bate, p. 140, = *Phoxocephalus simplex* (Bate).
 30. — *Holbölli*, Kröyer, p. 143, = *Phoxocephalus Holbölli* (Kröyer).
 31. — *plumosus*, Bate and Westwood (nec Kröyer), p. 146, = *Harpinia neglecta*, G. O. Sars.
 32. *Graia imbricata*, Bate, p. 152, = *Amathilla angulosa* (Rathke), young. I do not, however, consider *A. angulosa* to be a distinct species from *A. homari* (Fabricius).
 33. *Westwoodilla caecula*, Bate, p. 155. }
 34. — *hyalina*, Bate, p. 158. }
- Both these *Westwoodilla*, which are the same species, were so erroneously described that even Bate himself could not recognize his own genus or species, and the very next species is called *Ædiceros parvimanus*. The name to be used for the species should be therefore, I think, that by which the species was properly described and by which it could be recognized, and the species should be called *Halimelon parvimanus* (Bate and Westwood).
35. *Ædiceros parvimanus*, Bate and Westwood, p. 161, = *Halimelon parvimanus* (Bate), = *H. Mülleri*, Boeck.
 36. *Monoculodes carinatus*, Bate, p. 165.
 37. — *Stimpsoni*, Bate, p. 168, = *Monoculodes carinatus*, Bate.
 38. *Kroyera arenaria*, Bate, p. 173, = *Pontocrates arenarius* (Bate).
 39. — *altamarina*, Bate and Westwood, p. 177, = *Pontocrates altamarinus* (B. & W.).
 40. *Amphilochus manudens*, Bate, p. 180.
 41. *Darwinia compressa*, Bate, p. 184, = *Laphystius sturionis*, Kröyer.

42. *Sulcator arenarius*, Bate, p. 189, = *Haustorius arenarius* (Slabber).
43. *Urothoe Bairdi*, Bate, p. 193, = ♂ of *U. marinus*.
44. — *marinus*, Bate, p. 195, ♀.
45. — *brevicornis*, Bate, p. 198, ♀.
46. — *elegans*, Bate, p. 200, ♂.
- The species of *Urothoe* require further working out.
47. *Lilljeborgia pallida*, Bate, p. 203, = *Lilljeborgia pallida*, Bate.
48. — *shetlandica*, Bate and Westwood, p. 206, = *Cheirocratus Sundrevalli* (Rathke), ♂.
49. *Phacra antiqua*, Bate, p. 209. Unknown; might be an *Apherusa*, if it were not that it has a secondary appendage to the antennæ.
50. — *Kinahani*, Bate, p. 211, = *Lilljeborgia Kinahani* (Bate).
51. *Isca Montagui*, H. Milne-Edwards, p. 215.
52. *Iphimedia obesa*, Rathke, p. 219.
53. — *eblanæ*, Bate, p. 221.
54. *Otus carinatus*, Bate, p. 224, = *Odius carinatus* (Bate).
55. *Percionotus testudo* (Montagu), p. 228.
56. *Acanthonotus Owenii*, Bate, p. 232, = *Epimeria cornigera* (Fabricius).
57. *Dexamine spinosa* (Montagu), p. 237.
58. — *tenuicornis*, Bate and Westwood (nec Rathke), p. 240, = *Dexamine theu*, Boeck.
59. — *vellomensis*, Bate and Westwood, p. 242, = *Paratyclus vellomensis* (B. & W.).
60. *Atylus Swammerdamii* (H. Milne-Edwards), p. 246, = *Paratyclus Swammerdamii* (H. Milne-Edwards).
61. — *gibbosus*, Bate, p. 248, = *Tritata gibbosa* (Bate).
62. — *bispinosus*, Bate, p. 250, = *Apherusa bispinosa* (Bate).
63. *Pherusa bicuspis*, Bate (nec Kröyer), p. 253, = *Apherusa cirrus* (Bate), ♂, = *Apherusa borealis*, Boeck.
64. — *fucicola*, Leach, p. 255, = *Gammarella brevicaudata*, H. Milne-Edwards, ♀ (Walker, Ann. & Mag. Nat. Hist. ser. 6, vol. vii. p. 418).
65. *Calliope laeviuscula* (Kröyer), p. 259, = *Calliopius laeviusculus* (Kröyer).
66. — *Ossiani*, Bate, p. 261, = *Parapleustes laticeps* (M. Sars).
67. — *Fingalli*, Bate and Westwood, p. 263, = *Parapleustes laticeps* (M. Sars), adult.
68. — *grandoculis*, Bate, p. 265, = *Calliopius laeviusculus* (Kröyer), ♂.
69. *Eusirus helveticæ*, Bate, p. 267, = *Eusirus longipcs*, Boeck.

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70. *Leucothoe articulosa* (Montagu), p. 271, = *Leucothoe spinicarpa* (Abildgaard).
71. — *furina* (Savigny), p. 274, =? *Leucothoe furina* (Savigny).
72. *Gossea microdeutopa*, Bate, p. 277. "Appears to be *Apherusa Jurinii*, M.-Edw." (Walker, Ann. & Mag. Nat. Hist. ser. 6, vol. xv. 1895, p. 469).
73. *Aora gracilis*, Bate, p. 280.
74. *Stimpsonia chelifera*, Bate, p. 285, = *Stimpsonella chelifera* (Bate).
75. *Microdeutopus gryllotalpa*, Bate (nec Costa), p. 289, = *Microdeutopus dammoniensis*, Bate.
76. — *Websteri*, Bate, p. 291, = *Lembos Websteri*, Bate.
77. — *anomalus*, Rathke, ♀, p. 293. ♀ of *M. dammoniensis*, if not of *M. anomalus*.
78. — *versiculatus*, Bate, p. 295, = *Coremapus versiculatus* (Bate), ♀.
79. *Protomedea hirsutimana*, Bate, p. 298, = *Leptocheirus pilosus*, Zaddach.
80. — *Whitei*, Bate, p. 300, = *Cheirocratus Sundevalli* (Rathke), ♀.
81. *Bathyporcia pilosa*, Bate and Westwood (nec Lindström), p. 304, = *Bathyporcia Williamsonia* (Bate), = *B. norvegica*, Sars.
82. — *Robertsoni*, Bate, p. 307, ♂.
83. — *pelagica*, Bate, p. 309, ♂.
84. *Niphargus aquilex*, Schiödte, p. 315, = *Niphargus subterraneus* (Leach).
85. — *fontanus*, Bate, p. 319.
86. — *Kochianus*, Bate, p. 323.
87. *Crangonyx subterraneus*, Bate, p. 327.
88. *Gammarella brevicaudata* (H. Milne-Edwards), p. 330, ♂.
89. — *Normanni*, Bate and Westwood, p. 333, = *Gammarella brevicaudata* (H. Milne-Edwards), ♀.
90. *Melita palmata* (Montagu), p. 337.
91. — *obtusata* (Montagu), p. 341, ♂.
92. — *proxima*, Bate, p. 344, = *Melita obtusata* (Montagu), ♂.
93. — *gladiosa*, Bate, p. 346.
94. *Mara grossimana* (Montagu), p. 350.
95. *Eurythoe erythrophthalmus* (Lilljeborg), p. 354, = *Gammaropsis maculatus* (Johnston), ♂.
96. — *bispinimanus*, Bate, p. 357, = *Gammaropsis maculatus* (Johnston), ♀.
97. *Amathilla Sabini* (Leach), p. 361, = *Amathilla homari* (Fabricius), var. *Amathilla angulosa* (Rathke).
98. *Gammurus marinus*, Leach, p. 370.
99. — *campylaps*, Leach, p. 375.

100. *Gammarus locusta* (Linné), p. 378.
 101. — *tenuimanus*, Bate, p. 384, =? *Mæra Batei*, Norman (see Walker, Ann. & Mag. Nat. Hist. ser. 6, vol. xv. 1895, p. 471).
 102. — *Edwardsii*, Bate, p. 386 (not as yet recognized by any other author).
 103. — *pulex* (De Geer), p. 388.
 104. — *dubius*, Johnston, p. 397, =?
 105. — *maculatus*, Johnston, p. 399, = *Gammaropsis maculatus* (Johnston).
 106. *Megamara semiserrata*, Bate, p. 401, = *Ceradocus semiserratus* (Bate).
 107. — *longimanus* (Leach, MS.), p. 403, = *Mæra othonis* (H. Milne-Edwards), ♂.
 108. — *othonis* (H. Milne-Edwards), p. 405, = *Mæra othonis* (H. Milne-Edwards), ♀.
 109. — *Alderi*, Bate, p. 407, = *Melita obtusata* (Montagu), ♀.
 110. — *brevicaudata*, Bate, p. 409, = *Elasmopus rapax*, Costa.
 111. *Eiscladus longicaudatus*, Bate and Westwood, p. 412, = *Photis longicaudata* (Bate and Westwood).
 112. *Amphithoe rubricata* (Montagu), p. 418.
 113. — *littorina*, Bate, p. 422, = *Amphithoe rubricata* (Montagu), ♀.
 114. — *albonaevulata*, Bate and Westwood (nec Kröyer), p. 426. The specimen figured is in my collection. It is *Podocerospis excavata*, Bate, ♀. The long setæ of the antennæ and the first gnathopods as drawn agree with *Podocerospis*, but the specimen shows nothing of the strong upturned third segment of metasome or the *Amphithoe*-like last uropod of Bate and Westwood's figure.
 115. — *gammaroides*, Bate, p. 427, = *Pleonexes gammaroides*, Bate, ♂.
 116. *Sunamphithoe hamulus*, Bate, p. 430, = *Pleonexes gammaroides*, Bate, ♀.
 117. — *conformata*, Bate, p. 432, = *Sunamphithoe pelagica* (H. Milne-Edwards).
 118. *Podocerus pulchellus* (Leach), p. 436, = *Bruzeliella* * *falcata* (Montagu), ♂.

* I have examined the types of the genera *Podocerus* and *Jassa* in the British Museum, and fully confirm what Messrs. Stebbing and Walker have written upon them, that *Podocerus variegatus*, Leach (as interpreted by Milne-Edwards's figure in 'Règne Animal de Cuvier,' but not *P. variegatus*, B. & W.), is *Platophium Darwinii*, and that *Jassa pelagica*, Leach (but not of B. & W.), is the same as *Podocerus capillatus*, B. & W. Bruzelius long ago restricted the use of *Jassa* to the species last mentioned, which has only a rudimentary appendage (scarcely visible with a high power) to the antennules. This use must be maintained, and not *Parajassa* as suggested by Stebbing. I have therefore found it necessary to institute a genus *Bruzeliella*, with *B. falcata*, Montagu, as its type.

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119. *Podocerus variegatus*, Bate and Westwood (nec Leach), p. 439, = *Bruzeliella pusilla* (Sars), ♀.
120. — *capillatus*, Rathke, p. 442, = *Jassa pelagica*, Leach (nec B. & W.).
121. — *falcatus* (Montagu), p. 445, = *Bruzeliella falcata* (Montagu), ♂ junior.
122. — *pelagicus* (Bate and Westwood) (nec Leach), p. 447, = *Bruzeliella falcata* (Montagu), ♀.
123. — *ocius*, Bate, p. 450, = *Bruzeliella ocia* (Bate).
124. *Cerapus abditus*, Templeton, p. 455, = *Erichthonius abditus* Templeton, ♂.
125. — *difformis* (H. Milne-Edwards), p. 457, = *Erichthonius difformis*, H. Milne-Edwards, ♂.
126. *Dercothoz punctatus*, H. Milne-Edwards, p. 461, = *Erichthonius difformis*, H. Milne-Edwards, ♀.
127. *Siphonactetes typicus*, Bate and Westwood (nec Kröyer), p. 465, *Siphonactetes Whitei* (Gosse), ♂.
128. — *Whitei*, Gosse, p. 467, = *Siphonactetes Whitei* (Gosse), ♀, = *C. Colletti*, Boeck.
129. — *crassicornis*, Bate, p. 469, = *Cerapus crassicornis* (Bate).
130. *Nania tuberculosa*, Bate, p. 472, = *Podoceroopsis Sophieæ*, Boeck, ♂.
131. — *rimapalmata*, Bate, p. 474, = *Podoceroopsis excavata* (Bate), ♂.
132. — *excavata*, Bate, p. 476, = *Podoceroopsis excavata* (Bate), ♀.
133. — *undata*, Bate, p. 477, = *Podoceroopsis Sophieæ*, Boeck, ♀.
134. *Cyrtophium Darwinii*, Bate, p. 481, = *Platophium variegatum* (Leach)*.
135. *Cratippus tenuipes*, Bate, p. 485, = *Colomastix pusilla*, Grube.
136. *Dryopa irrorata*, Bate, p. 488, = *Unciola irrorata* (Bate), ♀.
137. — *crenatipalma*, Bate, p. 490, = *Unciola irrorata* (Bate), ♂.
138. *Corophium longicorne*, Latreille, p. 493, = *Corophium volutator* (Pallas), ♂.
139. — *Bonellii*, Bate and Westwood (nec Milne-Edwards), p. 497, = *Corophium affine*, Bruzelius, ♀.
140. — *crassicorne*, Bruzelius, p. 499, ♂.
141. *Chelura terebrans*, Philippi, p. 503.

Voz. II.

142. *Listriginus exulans*, Kröyer, p. 5, = *Hyperia galba* (Montagu), ♂ junior.

* I think that, considering the inadequate description of the genus *Podocerus* and its erroneous use for nearly one hundred years, the name ought to be excluded from an altered use.

143. *Listrigoon Kinahani*, Bate, p. 8, = *Hyperia galba* (Montagu), ♂ mature.
 144. *Hyperia galba* (Montagu), p. 12, ♀.
 145. — *oblivia*, Bate und Westwood (nec Kröyer), p. 16, = *Euthemisto gracilipes* (Norman).
 146. *Phronima sedentaria* (Forskaal), p. 23.
 147. *Dulichiu porrecta*, Bate, p. 31, ♂.
 148. — *falcata*, Bate, p. 33, ♂.
 149. *Proto pedata*, Abildgaard, p. 33, = *Phthisica marina*, Slabber, ♀.
 150. — *Goodsirii*, Bate, p. 42, = *Phthisica marina*, Slabber, ♂.
 151. *Protella phasma* (Montagu), p. 45, = *Pseudoprotella phasma* (Montagu).
 152. *Caprella linearis* (Linné), p. 52.
 153. — *lobata* (Müller), p. 57, = *Caprella linearis* (Linné), ♂.
 154. — *acutifrons* (Latreille), p. 60.
 155. — *hystrix* (Kröyer), Bate and Westwood, p. 63, = *Caprella septentrionalis*, Kröyer, var. *nodifera*, Mayer.
 156. — *acanthifera*, Leach, p. 65.
 157. — *tuberculata*, Guérin, p. 68.
 158. — *aquilibra*, Say, p. 71.
 159. — *typica*, Kröyer, p. 75, = *Periambus typicus* (Kröyer).
 160. *Cyamus ceti*, Martens, p. 85, = *Cyamus mysticeti*, Lütken.
 161. — *ovalis*, Roussel de Vauzème, p. 91, not British.
 162. — *gracilis*, Roussel de Vauzème, p. 94, not British.
 163. — *Thompsoni*, Gosse, p. 96, = *Platycyamus Thompsoni* (Gosse).

ISOPODA.

164. *Tanais vittatus* (Rathke), p. 125, = *Tanais Cavolini*, H. Milne-Edwards.
 165. — *Dulongii* (? Audouin), p. 129.
 166. *Leptochelia Edwardsii* (Kröyer), p. 134, = *Leptochelia Savignii* (Kröyer).
 167. *Paratanais forcipatus*, Bate and Westwood (nec Lilljeborg), p. 133, = *Paratanais Batei*, G. O. Sars.
 168. — *rigidus*, Bate and Westwood, p. 141, = *Leptognathia rigida* (Bate and Westwood).
 169. *Apscudes talpa* (Montagu), p. 148.
 170. — *Latreillii*, H. Milne-Edwards, p. 153 (*vide* Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. iii. p. 327).
 171. *Anthura gracilis* (Montagu), p. 160, ♀.
 172. *Paranthura Costana*, Bate and Westwood, p. 165, = *Paranthura nigropunctata* (Lucas), ♀.

173. *Anceus maxillaris* (Montagu), p. 187, = *Gnathia maxillaris* (Montagu).
 174. — *Edwardii*, Bate, p. 201, = *Gnathia oxyurua* (Lilljeborg).
 175. — *Halidaii*, Bate and Westwood, p. 203, = *Gnathia formica* (Hesse).
 176. *Bopyrus squillarum*, Latreille, p. 218.
 177. *Gyge galathea*, Bate and Westwood, p. 225, = *Gyge branchiulis*, Cornalia and Panzeri. The specimen which is described and illustrated at p. 225 was procured by me from *Uppogebia stellata*, and not, as erroneously recorded by the authors, from a *Galathea*.
 178. — *hippolytes*, Kröyer, p. 230, = *Bopyroides hippolytes* (Kröyer).
 179. *Phryxus abdominalis* (Kröyer), p. 234.
 180. — *justicaudatus*, Bate and Westwood, p. 238, = *Athelges paguri*, Rathke, young.
 181. — *paguri*, Rathke, p. 240, = *Athelges paguri* (Rathke).
 182. — *Hyndmanni*, Bate and Westwood, p. 243, = *Pseudione Hyndmanni* (Bate and Westwood).
 183. — *longibranchiatus*, Bate and Westwood, p. 246, = *Pleurocrypta longibranchiata* (Bate and Westwood).
 184. — *galathea*, Bate and Westwood (nec Hesse), p. 249, = *Pseudione confusa* (Norman).
 185. *Ione thoracica* (Montagu), p. 255.
 186. *Cryptothiria pygmaea* (H. Rathke), p. 261, = *Liriopsis pygmaea* (H. Rathke).
 187. — *balani* (Bate), p. 267, = *Cryptothir balani* (Bate).
 188. *Æga bicarinata*, Leach, p. 278, = *Æga rosacea*, Risso. A doubtful British species (see Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. xiv. 1904, p. 433).
 189. — *trilens*, Leach, p. 281.
 190. — *psora* (Pennant), p. 283.
 191. — *monophthalma*, Johnston, p. 286.
 192. *Rocinela danmoniensis*, Leach, p. 291.
 193. *Cirolana Cranchii*, Leach, p. 296.
 194. — *spinipes*, Bate and Westwood, p. 299, = *Cirolana borealis*, Lilljeborg.
 195. *Conilera cylindracea* (Montagu), p. 304.
 196. *Eurydice pulchra*, Leach, p. 310.
 197. *Jæra albifrons* (Montagu), p. 317, = *Jæra marina* (Fabricius).
 198. — *Nordmanni* (Rathke), p. 320.
 199. *Munna Kröyeri*, Goodsir, p. 326, ♂.
 200. — *Whitcana*, Bate and Westwood, p. 329, = *Munna Kröyeri*, Goodsir, ♀.

201. *Leptuspidia brevipes*, Bate and Westwood, p. 333. I think that this must be *Paramunna bilobata*, Sars, and should have precedence of that name.
202. *Janira maculosa*, Leach, p. 338.
203. *Asellus aquaticus* (Linné), p. 343.
204. *Limnoria lignorum* (Rathke), p. 351.
205. *Arcturus longicornis* (Sowerby), p. 365, = *Astacilla longicornis* (Sowerby), ♀.
206. — *intermedius* (H. Goodsir), p. 371, = *Astacilla intermedia* (H. Goodsir).
207. — *gracilis* (H. Goodsir), p. 373, = *Astacilla longicornis* (Sowerby), ♂.
208. *Idotea tricuspidata*, Desmarest, p. 379, = *Idotea bathica* (Pallas).
209. — *pelagica*, Leach, p. 384.
210. — *emarginata* (Fabricius), p. 386.
211. — *linearis* (Pennant), p. 388.
212. — *parallela*, Bate and Westwood, p. 391, = *Zenobiana prismatica* (Lisso).
213. — *acuminata*, Leach, p. 394, = *Stenosoma acuminatum*, Leach.
214. — *appendiculata* (Lisso), p. 396, = *Stenosoma lanciferum* (Leach).
215. *Sphaeroma serratum* (Fabricius), p. 405.
216. — *rujicauda*, Leach, p. 403.
217. — *Hookeri*, Leach, p. 410.
218. — *curtum*, Leach, p. 412, = *Cymodoce truncata* (Montagu), ♀.
219. — *Prideauxianum*, p. 415, = *Cymodoce truncata* (Montagu), ♀.
220. *Dynamene rubra*, Leach, p. 419, = *Nasa bidentata* (Adams), ♀.
221. — *viridis*, Leach, p. 421, = *Nasa bidentata* (Adams), ♀.
222. — *Montagui*, Leach, p. 423, = ?? young of *Nasa bidentata* (Adams), ♂.
223. *Cymodocea truncata*, Leach, p. 426, ♂, = *Cymodoce truncata*, Leach, ♂.
224. — *emarginata*, Leach, p. 428, = *C. truncata*, Leach, ♂ variety.
225. *Nasa bidentata* (Adams), p. 431, ♂.
226. *Campeopea hirsuta* (Montagu), p. 434, ♂.
227. — *Cranchii*, Leach, p. 436, = *Campeopea hirsuta* (Montagu), ♀.
228. *Ligia oceanica* (Linné), p. 444.

229. *Philoscia muscorum* (Scopoli), p. 450.
 230. — *Couchii*, Kinahan, p. 452.
 231. *Philourgia riparia* (Koch), p. 456, = *Trichoniscus pusillus*, Brandt.
 232. — *vivida* (Koch), p. 458, = *Trichoniscus vividus* (Koch).
 233. — *rosea* (Koch), p. 460, = *Trichoniscus roseus* (Koch).
 234. *Platyarthus Hoffmannseggii*, Brandt, p. 464.
 235. *Oniscus asellus*, Linné, p. 468.
 236. — *fossor*, Koch, p. 471, = *Oniscus asellus*, Linné.
 237. *Porcellio scaber*, Latreille, p. 475.
 238. — *dilatatus*, Brandt, p. 478.
 239. — *pictus*, Brandt, p. 480.
 240. — *lavis*, Latreille, p. 483.
 241. — *armadilloides*, Lereboullet, p. 485, = *Cylisticus convexus* (De Geer).
 242. — *pruinus*, Brandt, p. 487, = *Metoponorthus pruinus* (Brandt).
 243. — *cingulus*, Kinahan, p. 489, = *Metoponorthus cingulus* (Kinahan).
 244. *Armadillo vulgaris*, Latreille, p. 492, = *Armadillidium vulgare* (Latreille).

APPENDIX.

245. *Orchestia brevidigitata*, Bate and Westwood, p. 498, = *Orchestia littorea* (Montagu), ♂ young.
 246. *Montagua clypeata*, Bate and Westwood (nec Krüyer), p. 499, = *Metopa abscisa*, Norman.
 247. — *norvegica*, Bate and Westwood (nec Lilljeborg), p. 500, = *Metopa Alderi* (Bate), ♂.
 248. *Opis leptochela*, Bate and Westwood, p. 501, = *Euonyx chelatus*, Norman.
 249. — *quadrimana*, Bate and Westwood, p. 503, = *Normanion quadrimanus* (Bate and Westwood).
 250. *Ampelisca levigata*, Bate and Westwood (nec Lilljeborg), p. 504, = *Ampelisca tenuicornis*, Lilljeborg.
 251. *Haploops tubicola*, Lilljeborg, p. 505.
 252. *Monoculodes longimanus*, Bate and Westwood, p. 507, = *Prioculodes longimanus* (Bate and Westwood).
 253. *Kroyera brevicarpa*, Bate and Westwood, p. 508, = *Synchelidium haplochutes* (Grube).
 254. *Lepidepcreum carinatum*, Bate and Westwood, p. 509, = *Lepidepcreum longicorne* (Bate and Westwood), ♀.
 255. *Nicippe tumida*, Bruzelius, p. 511.

256. *Cheirocratus mantis*, Norman, p. 513, = *Cheirocratus assimilis* (Lilljeborg), ♂.
257. *Megamara multidentata*, Bate and Westwood, p. 515, = *Mera Batei*, Norman.
258. *Unciola leucopes*, Bate and Westwood (nec Kröyer), p. 517, = *Unciola planipes*, Norman.
259. *Hyperia tauriformis*, Bate and Westwood, p. 519, = *Hyperoche tauriformis* (Bate and Westwood).
260. — *prehensilis*, Bate and Westwood, p. 520, =? *Hyperia tauriformis*, Bate and Westwood, young (vide Norman, Ann. & Mag. Nat. Hist. ser. 7, vol. v. 1900, p. 130).
261. — *cyanea* (Sabine), p. 521, =??
262. *Themisto crassicornis*, Kröyer, p. 522, = *Euthemisto libellula* (Mandt).
263. *Vibilia borealis*, Bate and Westwood, p. 524.
264. *Tessarops hastata*, Norman, p. 530, = *Tiron acanthurus*, Lilljeborg.
265. *Eriopsis elongatus*, Bruzelius, p. 530, = *Eriopsis elongata* (Bruzelius).
266. *Mura Loveni*, Bruzelius, p. 530.
267. — *Batei*, Norman, p. 530.
268. *Helleria coalita*, Norman, p. 530, = *Guerneia coalita* (Norman).
269. *Microprotopus maculatus*, Norman, p. 530.
270. *Cirroluna truncata*, Norman, p. 530, = *Eurydice truncata* (Norman).
271. *Anilocera mediterranea*, Leach, p. 530, = *Anilocera physodes* (Linné).

II.

Species described by Bate and Westwood in accordance with present nomenclature, and arranged after the Monographs of Professor G. O. Sars*.

I. AMPHIPODA.

Tribe I. HYPERIDEA.

- Hyperia galba* (Montagu), 142 and 143 ♂, 144 ♀.
- *cyanea*, Sabine, 261 ?
- Hyperoche tauriformis* (B. & W.), 259 (and ? 260).
- Euthemisto libellula* (Mandt), 262.
- *gracilipes* (Norman), 145.

* The numbers appended to the names are those prefixed to the species in the preceding list of Bate and Westwood's species.

Phronima sedentaria (Forskaal), 146.

Fibilia borealis, B. & W., 263.

Tribe II. GAMMARIDEA.

Talitrus locusta (Pallas), 1.

Orchesteu littoreu (Montagu), 2, 215.

— *mediterranea* (Costa), 3.

Orchestoidea Deshaycsii (Audouin), 4.

Hyalé Nilssoni (Rathke), 5.

— *Lubbockiana* (Bate), 6 ♂, 7 ♀.

Normanion quadrimanus (B. & W.), 249.

Acidostoma obesum (Bate), 19.

Lysianax septentrionalis, Della Valle, 18 and part of 16.

Ambasia Danielsseni, Boeck, 15?

Perrierella Audouiniana (Bate), 14.

Callisoma Hopei, Costa, 26.

Hippomedon denticulatus, Bate, 20.

Orchomene humilis (Costa), 18 and part of 16, and ? 22 junior.

Tryphosites longipes (Bate), 24 ♀, 25 ♂.

Haplonyx cicada (Fabricius), 21.

Menigrates obtusifrons, Boeck, 23.

Lepidopereum longicorne (Bate), 17 ♂, 254 ♀.

Euonyx chelatus, Norman, 248.

Bathyporeia Guilliansonia (Bate), 81 ♀.

— *Robertsoni*, Bate, 82 ♂.

— *pelagica*, Bate, 83 ♂.

Haustorius arenarius (Slabber), 42.

Urothoe marinus, Bate, 44 ♀, 43 ♂.

— *brevicornis*, Bate, 45 ♀.

— *elegans*, Bate, 46 ♂.

Phoxocephalus Holbölli (Kröyer), 30.

— *simplex* (Bate), 29.

Harpinia neglecta, G. O. Sars, 31.

Ampelisca typica (Bate), 27.

— *brevicornis* (Costa), 28.

— *tenuicornis*, Lilljeborg, 250.

Haploops tubicola, Lilljeborg, 251.

Anphilochus manudens, Bate, 40.

Stenothoe marina (Bate), 9.

— *monoculoides* (Montagu), 8.

- Metopa Alderi* (Bate), 10 ♀, 247 ♂.
 — *norvegica* (Lilljeborg), 11.
 — *abscisa*, Norman, 246.
Cressa dubia (Bate), 12.
Leucothoe spinicarpa (Müller), 70.
 — ? *furina* (Saviguy), 71.
Monoculodes carinatus, Bate, 36, 37.
Perioculodes longimanus (B. & W.), 252.
Pontocrates arenarius (Bate), 38.
 — *altamarinus* (Bate), 39.
Synchelidium haplocheles (Grube), 253.
Hulimelon parvimanus (B. & W.), 33, 34, 35.
Parapleustes latipes (M. Sars), 66, 67.
Epimeria cornigera (Fabricius), 56.
Iphimedia obesa, Rathke, 52.
 — *eblane*, Bate, 53.
Perionotus testudo (Montagu), 55.
Odius carinatus (Bate), 54.
Laphystius sturionis, Kröyer, 41.
Tiron acanthurus, Lilljeborg, 264.
Nicippe tumida, Bruzelius, 255.
Eusirus longipes, Boeck, 69.
Apherusa bispinosa (Bate), 62.
 — *cirrus*, Bate, 63 ♂.
 — *Jurinii* (H. M.-Edw.)?, 72.
Calliopius laeviusculus (Kröyer), 65, 68 ♂.
Paratylus Swammerdamii (H. M.-Edw.), 60.
 — *vedlomensis* (B. & W.), 59.
Devamine spinosa (Montagu), 57.
 — *thea*, Boeck, 53.
Tritata gibbosa (Bate), 61 ♀.
Guernea coalita (Norman), 268.
Amathilla homari (Fabricius), 32 young, 97.
Gammarus marinus, Leach, 98.
 — *campylops*, Leach, 99.
 — *locusta* (Linné), 100.
 — *pulex*, De Geer, 103.
 — *Edwardsii*, Bate?, 102.
 — "dubius, Johnston," 104.
Melita palmata (Montagu), 90.
 — *obtusata* (Montagu), 91 and 92 ♂, 109 ♀.

- Melita glutiosa*, Bate, 93.
Eriopisa elongata (Bruzelius), 265.
Niphargus subterraneus (Leach), 84.
 — *fontanus*, Bate, 85.
 — *Kochianus*, Bate, 86.
Crangonyx subterraneus, Bate, 87.
Mara othonis (H. M.-Edw.), 108 ♀, 107 ♂.
 — *Loveni* (Bruzelius), 266.
 — *Batei*, Norman, 101 ?, 257, 267.
 — *grossimana* (Montagu), 94.
Ceralocus semiseratus (Bate), 106.
Elasmopus rapax, Costa, 110.
Gammarella brevicaulata, 64 ♀, 88 ♂, 89 ♀.
Cheirocratus Sundevalli (Rathke), 48 ♂, 80 ♀.
 — *assimilis* (Lilljeborg), 256 ♂.
Lilljeborgia pallida, Bate, 47 ♀.
 — *Kinahani*, Bate, 50.
 " *Phædra antiqua*, Bate," 49.
Isaa Montagu, H. M.-Edw., 51.
Microdeutopus anomalus (Rathke)?, 77 ♀.
 — *damnoniensis* (Bate), 75 ♂.
Aora gracilis, Bate, 73.
Stimpsonella chelifera (Bate), 74.
Lembos Websterii, Bate, 76.
Coremapus versiculatus (Bate), 78.
Leptocheirus pilosus, Zaddach, 79.
Gammaropsis maculatus (Johnston), 95 ♂, 96 ♀, 105.
Microprotopus maculatus, Norman, 269.
Photis longicaulata (Bate), 111.
Podoceropsis Sophia, Bocck, 130 ♂, 133 ♀.
 — *excavata* (Bate), 131 ♂, 132 ♀, 114.
Amphithoe rubricata (Montagu), 112 ♂, 113 ♀.
Pleonexes gammaroides, Bate, 115 ♂, 116 ♀.
Sunamphithoe pelagica (H. M.-Edw.), 117.
Bruzeliella falcata (Montagu), 121 ♂ junior, 118 ♂, 122 ♀.
 — *pusilla* (G. O. Sars), 119 ♀.
 — *ocia* (Bate), 123.
Jassa pelagica, Leach, 120.
Erichthonius abditus (Templeton), 124 ♂.
 — *difformis* (H. M.-Edw.), 125 ♂, 126 ♀.
Cerapus crassicornis (Bate), 129.

- Siphonacetes Whitei* (Gosse), 127 ♂, 128 ♀.
Corophium volutator (Pallas), 138 ♂.
 — *affine*, Bruzelius, 139 ♀.
 — *crassicorne*, Bruzelius, 140 ♂.
Unciola irrorata (Bate), 136 ♀, 137 ♂.
 — *planipes*, Norman, 258.
Chelura terebrans, Philippi, 141.
Platophium variegatum (Leach), 134.
Dulichia porrecta, Bate, 147 ♂.
 — *fulcata*, Bate, 148 ♂.
Colomastix pusilla, Grube, 135.

Tribo III. CAPRILLIDEA.

- Phthisica marina*, Slabber, 149 ♀, 150 ♂.
Pseudoprotella phasma (Montagu), 151.
Periambus typicus (Kröyer), 159.
Caprella linearis (Linné), 152 ♀, 153 ♂.
 — *septentrionalis*, Kröyer, var. *nodifera*, Mayer, 155.
 — *aquilibra*, Say, 153.
 — *acanthifera*, Leach, 156.
 — *acutifrons* (Latreille), 154.
 — *tuberculata*, Guérin, 157.
Cyamus mysticeti, Lütken, 160.
 — ? *ovalis*, Roussel de Vauzème, 161.
 — ? *gracilis*, Roussel de Vauzème, 162.
Platycyamus Thomsoni (Gosse), 163.

II. ISOPODA.

Tribo I. CHELIFERA.

- Apsuedes talpa* (Montagu), 169.
 — *Latreillii* (H. M.-Edw.), 170.
Tanais Cavolini, H. M.-Edw., 164.
 — *Dulongii* (? Audouin), 165.
Leptochelia Savignii (Kröyer), 166.
Paratanais Batei, G. O. Sars, 167.
Leptognathia rigida (B. & W.), 163.

Tribo II. FLABELLIFERA.

- Anthura gracilis* (Montagu), 171.
Paranthura nigropunctata (Lucas), 172.

- Gnathia maxillaris* (Montagu), 173.
 — *oxyuræa* (Lilljeborg), 174.
 — *formica* (Hesse), 175.
Anilocera physodes (Linné), 271.
Æga tridens, Leach, 189.
 — *psora* (Pennant), 190.
 — *monophthalma*, Johnston, 191.
 — ? *rosacea*, Risso, 188.
Rocinela danmoniensis, Leach, 192.
Cirolana Cranchii, Leach, 193.
 — *borealis*, Lilljeborg, 194.
Conilera cylindracea, Leach, 195.
Eurydice pulchra, Leach, 196.
 — *truncata* (Norman), 270.
Limnoria lignorum (Rathke), 204.
Spheroma serratum (Fabricius), 215.
 — *rugicauda*, Leach, 216.
 — *Hookeri*, Leach, 217.
Cymodocea truncata, Leach, 218 and 219 ♀, 223 and 224 ♂.
Nysa bidentata (Adams), 220 and 221 ♀, 225 ♂.
 — *Montagu*, Leach ?, 222.
Campeopea hirsuta (Montagu), 226 ♂, 227 ♀.

Tribe III. VALTIFERA.

- Astacilla longicornis* (Sowerby), 205 ♀, 207 ♂.
 — *intermedia* (Goodsir), 206.
Idotea balthica (Pallas), 208.
 — *pelagica*, Leach, 209.
 — *emarginata* (Fabricius), 210.
 — *linearis* (Pennant), 211.
Zenobiana prismatica (Risso), 212.
Stenosoma acuminatum, Leach, 213.
 — *lanciferum* (Leach), 214.

Tribe IV. ASELOTÆ.

- Asellus aquaticus* (Linné), 203.
Janira maculosa, Leach, 202.
Jara marina (Fabricius), 197.
 — *Nordmanni* (Rathke), 198.
Munna Krøyeri, Goodsir, 199 ♂, 200 ♀.
Leptaspidia brevipes, B. & W., 201.

Tribe V. ONISCOTDEA.

- igia oceanica* (Linné), 228.
richoniscus pusillus, Brandt, 231.
 — *vividus* (Koch), 232.
 — *roseus* (Koch), 233.
Oniscus asellus, Linné, 235, 236.
Philoscia muscorum (Scopoli), 229.
 — *Couchii*, Kinahan, 230.
Platyarthrus Hoffmannseggii, Brandt, 234.
Porcellio scaber, Latreille, 237.
 — *dilatatus*, Brandt, 238.
 — *pictus*, Brandt, 239.
 — *levis*, Latreille, 240.
Metoponorthus pruinosis (Brandt), 242.
 — *cinjendus* (Kinahan), 243.
Cylisticus convexus (De Geer), 241.
Armadillidium vulgare (Latreille), 244.

Tribe VI. EPICARIDA.

- Bopyrus squillarum*, Latreille, 176.
Pseudione Hyndmanni (B. & W.), 182.
 — *confusa* (Norman), 184.
Pleurocrypta longibranchiata (B. & W.), 183.
Athelys paguri (Rathke), 181 and 180, the young.
Phryxus abdominalis (Kröyer), 179.
Ione thoracica (Montagu), 185.
Iriopsis pygmaea (Rathke), 186.
Cryptothir balani (Bate), 187.

IX. — Kerunia, a Symbiosis of a Hydractinian with a Cephalopod. By Dr. FRANCIS BARON NOPCSA, Member of the Hungarian Geological Society.

[Plate III.]

DURING a recent visit to Qasr-el-Sagha, in the Fayum district of Egypt, I succeeded in obtaining a large number of specimens belonging to the Eocene genus *Kerunia* uniting characters which have hitherto not been properly described.