

SMITHSONIAN MISCELLANEOUS COLLECTIONS.

183

CHECK LIST

OF THE

INVERTEBRATE FOSSILS

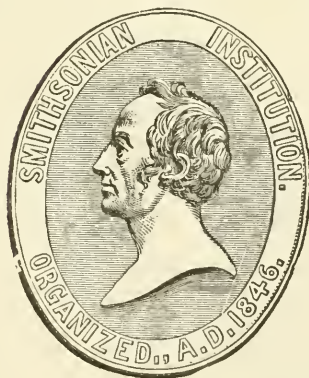
OF

NORTH AMERICA.

MIOCENE.

BY

F. B. MEEK.



WASHINGTON:
SMITHSONIAN INSTITUTION.
NOVEMBER, 1864.

ADVERTISEMENT.

THE following Lists of the described species of Invertebrate Fossils of North America have been prepared at the request of the Institution for the purpose of facilitating the labelling of the collections and the distribution of duplicate specimens.

It will be readily understood that the Smithsonian Institution cannot vouch for the accuracy of the Lists, or for their completeness, and that all responsibility in reference to these points rests with the authors.

JOSEPH HENRY,
Secretary S. I.

SMITHSONIAN INSTITUTION,
WASHINGTON, April, 1864.

(ii)

CHECK LIST

OF THE

INVERTEBRATE FOSSILS OF NORTH AMERICA.

TERTIARY SYSTEM.—MIOCENE EPOCH.

BY

F. B. MEEK.

SUBKINGDOM RADIATA.

CLASS POLYPI.

Order ACTINARIA.

Astreidæ.

- | | |
|---|-------------------------|
| 1. <i>Astrea</i> [?] <i>bella</i> , <i>Conrad</i> . | Va. ; N. Car. ; S. Car. |
| 2. <i>Astrea</i> [?] <i>marylandica</i> , <i>Conrad</i> . | Md. ; Va. |
| 3. <i>Septastrea</i> (?) <i>sexradiata</i> , (<i>Lonsdale</i>) <i>Meek</i> . | Va. |
| 4. <i>Septastrea</i> <i>Forbesii</i> , <i>Edwards & Haime</i> . | Md. |
| 5. <i>Astrhelia</i> <i>palmata</i> , (<i>Goldf.</i>) <i>Edwards & Haime</i> . | Md. |
| 6. <i>Cladocora</i> [?] <i>lineata</i> , (<i>Conrad</i>) <i>Meek</i> . | Va. |

NOTE.—Owing to the fact that the Tertiary fossils of the Pacific coast have not been studied so thoroughly as those of the Atlantic slope, we cannot always speak with confidence in regard to their age. Hence it is probable some of the species included in this list may not belong properly to the Miocene. The apparent identity of two species from near the mouth of Columbia River (*Nucula Conradi* (= *divaricata*, *Conr*, not *Hinds*), and *Mactra albaria*, *Conrad*), with forms found associated with *Ammonites* and *Baculites* at Chico Creek, Butte County, California, leaves room for doubts whether some of these supposed Miocene beds may not be even older than Tertiary. Until these doubtful questions can be cleared up by the publication of the valuable results of the Geological Survey of California, it has been thought desirable to include in the Miocene list all the species from that region originally referred by Mr. Conrad, and others, to the Miocene epoch, with the exception of a few forms now known not to belong to that epoch.

CLASS ECHINODERMATA.

Order ECHINOIDEA.

Spatangidæ.

- | | |
|---|---------|
| 7. <i>Amphidetus ampliflorus</i> , <i>McCrady</i> . | S. Car. |
| 8. <i>Amphidetus gothicus</i> , <i>Ravenel</i> . | S. Car. |
| 9. <i>Amphidetus orthonotus</i> , <i>Conrad</i> . | Va. |
| 10. <i>Plagionotus Holmesii</i> , <i>McCrady</i> . | S. Car. |
| 11. <i>Plagionotus Ravenelleanus</i> , <i>McCrady</i> . | S. Car. |
| 12. <i>Brissus spatiosus</i> , (<i>Ravenel</i>) <i>McCrady</i> . | S. Car. |
| 13. <i>Agassizia porifera</i> , (<i>Ravenel</i>) <i>McCrady</i> . | S. Car. |

Clypeasteridæ.

- | | |
|--|---------|
| 14. <i>Clypeaster Gabbi</i> , <i>Remond</i> . | Cal. |
| 15. <i>Encope macrophora</i> , <i>Ravenel</i> . | S. Car. |
| 16. <i>Mellita carolineana</i> , <i>Ravenel</i> . | S. Car. |
| 17. <i>Mellita texana</i> , <i>Conrad</i> . | Texas. |
| 18. <i>Scutella Alberti</i> , <i>Conrad</i> . | Md. |
| 19. <i>Scutella Gibbsii</i> , <i>Remond</i> . | Cal. |
| 20. <i>Scutella striatula</i> , <i>Conrad</i> . | Cal. |
| 21. <i>Scutella interlineata</i> , <i>Blake</i> . | Cal. |
| 22. <i>Astrodapsis Antiselli</i> , <i>Conrad</i> . | Cal. |
| 23. <i>Astrodapsis tumidus</i> , <i>Remond</i> . | Cal. |
| 24. <i>Astrodapsis Whitneyi</i> , <i>Remond</i> . | Cal. |
| 25. <i>Echinarachinus Brewertianus</i> , <i>Remond</i> . | Cal. |

Cidaridæ.

- | | |
|---|---------|
| 26. <i>Psammechinus exoletus</i> , <i>McCrady</i> . | S. Car. |
| 27. <i>Psammechinus philanthropus</i> , <i>Conrad</i> . | Va. |

SUBKINGDOM MOLLUSCA.

CLASS POLYZOA.

Escharidæ.

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| 28. <i>Eschara?</i> <i>fragilissima</i> , <i>Gabb & Horn</i> . | Md. |
| 29. <i>Lunulites oblonga</i> , <i>Emmons</i> . | N. Car. |
| 30. <i>Cellepora tumidula</i> , (<i>Lonsdale</i>) <i>D'Orbigny</i> . | |
| 31. <i>Cellepora formosa</i> , <i>Tuomey & Holmes</i> . | S. Car. |
| 32. <i>Cellepora tessellata</i> , <i>Tuomey & Holmes</i> . | S. Car. |
| 33. <i>Cellepora radiata</i> , <i>Tuomey & Holmes</i> . | S. Car. |
| 34. <i>Cellepora depressa</i> , <i>Tuomey & Holmes</i> . | S. Car. |
| 35. <i>Cellepora urceolata</i> , <i>Gabb & Horn</i> . | N. Jer. |
| 36. <i>Reptocelleporia informata</i> , (<i>Lons.</i>) <i>Tuomey & Holmes</i> . | Va.; S. Car. |
| 37. <i>Reptocelleporia similis</i> , (<i>Lonsdale</i>) <i>D'Orbigny</i> . | Va.; S. Car. |

Escharionellidae.

38. *Enallipora quadrangularis*, *Gabb & Horn.* Va.
 39. *Discoporella denticulata*, (*Conrad*) *Gabb & Horn.*
 N. Jer. ; Md. ; Va. ; S. & N. Car.

Porinidae.

40. *Multiporina umbilicata*, (*Lonsdale*) *Gabb & Horn.* Va.

Flustrellidae.

41. *Membranipora sexpunctata*, *Gabb & Horn.* ?

Crescisidae.

42. *Multicrescis tortilis*, (*Lonsdale*) *Gabb & Horn.* Va. ; S. Car.

CLASS BRACHIOPODA.

Discinidae.

43. *Discina lugubris*, (*Conrad*) *Meek.* Md. ; Va.
 44. *Discina multilineata*, (*Conrad*) *Meek.* Va.

Rhynchonellidae.

45. *Rhynchonella nitens*, (*Conrad*) *Meek.* Or.

Terebratulidae.

46. *Morrisia Hornii*, *Gabb.* Or.

CLASS LAMELLIBRANCHIATA.

Ostreidae.

47. *Ostrea contracta*, *Con.* Cal.
 48. *Ostrea disparilis*, *Conrad.* Va.
 49. *Ostrea Bourgeoisii*, *Remond.* Cal.
 50. *Ostrea mauricensis*, *Gabb.* N. Jer.
 51. *Ostrea pansa*, *Conrad.* Cal.
 52. *Ostrea percrassa*, *Conrad.* N. Jer.
 53. *Ostrea Hermannii*, *Conrad.* Cal.
 54. *Ostrea Ravenelliana*, *Tuomey & Holmes.* S. Car.
 55. *Ostrea subjecta*, *Conrad.* Cal.
 56. *Ostrea sculpturata*, *Conrad.* Va.
 57. *Ostrea subfalcata*, *Conrad.* Va.
 58. *Ostrea vespertina*, *Conrad.* Con.
 59. *Ostrea virginiana*, *Gmelin?* Va. ; S. Car.
 60. *Ostrea veleriana*, *Conrad.* Cal.

Anomiidæ.

61. <i>Placumonia plicata</i> , Tuomey & Holmes.	S. Car.
62. <i>Anomia Conradi</i> , D'Orbigny.	N. Car.
63. <i>Anomia delumbis</i> , Conrad.	?
64. <i>Anomia Ruffini</i> , Conrad.	Va.
65. <i>Anomia subcostata</i> , Conrad.	Cal.

Spondylidæ.

66. <i>Spondylus estrellanus</i> , Conrad.	Cal.
67. <i>Plicatula marginata</i> , Say.	Va.
68. <i>Plicatula densata</i> , Conrad.	N. Jer.

Limidæ.

69. <i>Lima papyra</i> , Conrad.	Md.
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Pectinidæ.

70. <i>Hinnites crassis</i> , Conrad.	Cal.
71. <i>Amussium Mortoni</i> , (Ravenel) Con.	S. Car.
72. <i>Pecten coosensis</i> , Shumard.	Or.
73. <i>Pecten Humphreysii</i> , Con.	Md.
74. <i>Pecten Hermanni</i> , Conrad.	Cal.
75. <i>Pecten hemicyclus</i> , Ravenel.	S. Car.
76. <i>Pecten altiplicatus</i> , Conrad.	Cal.
77. <i>Pecten affinis</i> , (Tuomey & Holmes) Meek.	S. Car.
78. <i>Pecten discus</i> , Conrad.	Cal.
79. <i>Pecten virginianus</i> , Conrad.	Va.
80. <i>Pecten deserti</i> , Conrad.	Cal.
81. <i>Pecten vicinarius</i> , Conrad.	Va.
82. <i>Pecten catiliformis</i> , Conrad.	Cal.
83. <i>Pecten tricenarius</i> , Conrad.	Va.
84. <i>Pecten bella</i> , (Conrad) Meek.	Cal.
85. <i>Pecten tennis</i> , H. C. Lea.	Va.
86. <i>Pecten septenarius</i> , Say.	
87. <i>Pecten Rogersi</i> , Conrad.	Va.
88. <i>Pecten pedeensis</i> , Tuomey & Holmes.	S. Car.
89. <i>Pecten micropleura</i> , H. C. Lea.	Va.
90. <i>Pecten Madisonius</i> , Say.	Md. ; Va.
91. <i>Pecten magnolia</i> , Conrad.	Cal.
92. <i>Pecten marylandicus</i> , Wagner.	Md.
93. <i>Pecten Meekii</i> , Conrad.	Cal.
94. <i>Pecten Jeffersonius</i> , Conrad.	Md. ; Va.
95. <i>Pecten propatulus</i> , Conrad.	Or.
96. <i>Pecten fraternus</i> , Conrad.	Va.
97. <i>Pecten nevadensis</i> , Conrad.	Cal.
98. <i>Pecten eboreus</i> , Conrad.	Va. ; N. Cal.

99. <i>Pecten pabloensis</i> , Conrad.	Cal.
100. <i>Pecten dispalatus</i> , Conrad.	Va.
101. <i>Pecten edgecombensis</i> , Conrad.	N. C.
102. <i>Pecten decemnarius</i> , Conrad.	Va.
103. <i>Pecten concentricus</i> , Say?	Md.
104. <i>Pecten comparilis</i> , Tuomey & Holmes.	S. Car.
105. <i>Pecten Clintonensis</i> , Say.	Va.
106. <i>Pecten biformis</i> , Conrad.	Va.
107. <i>Lyropecten volæformis</i> , Conrad.	Cal.
108. <i>Lyropecten estrellanus</i> , Conrad.	Cal.

Ledidæ.

109. <i>Yoldia lævis</i> , (Say) Conrad.	Md. ; S. C.
110. <i>Yoldia eborea</i> , Conrad.	?
111. <i>Yoldia impressa</i> , (Conrad) Meek.	Or.
112. <i>Nuculana acuta</i> , Conrad.	Md.
113. <i>Nuculana willamettensis</i> , (Shumard) Meek.	Oreg.
114. <i>Nuculana acutidens</i> , (H. C. Lea) Conrad.	Va.
115. <i>Nuculana carinata</i> , (H. C. Lea) Conrad.	Va.
116. <i>Nuculana concentrica</i> , (Say) Conrad.	Md.
117. <i>Nuculana penita</i> , (Conrad) Meek.	Or.
118. <i>Nuculana liciata</i> , Conrad.	Md.
119. <i>Nuculana oregona</i> , (Shumard) Meek.	Oreg.
120. <i>Neilo abrupta</i> , (Conrad) Meek.	Or.

Nuculidæ.

121. <i>Nucula cuneiformis</i> , Conrad.	Or.
122. <i>Nucula dolabella</i> , H. C. Lea.	Va.
123. <i>Nucula decisa</i> , Conrad.	Cal.
124. <i>Nucula diaphana</i> , H. C. Lea.	Va.
125. <i>Nucula proxima</i> , Say?	Md. ; S. C.
126. <i>Nucula obliqua</i> , Say (not Lamk.).	Med.
127. <i>Nucula Conradi</i> , Meek.	Or.

Arcidæ.

128. <i>Axinæa arata</i> , Conrad.	N. Car.
129. <i>Axinæa barbata</i> , Conrad.	Cal.
130. <i>Axinæa carolinensis</i> , Conrad.	N. Car.
131. <i>Axinæa lævis</i> , (Tuomey & Holmes) Conrad.	S. Car.
132. <i>Axinæa lentiformis</i> , Conrad.	Va. ; S. Car.
133. <i>Axinæa passa</i> , Conrad.	Va. ; N. Car.
134. <i>Axinæa parilis</i> , Conrad.	Md. ; S. Car.
135. <i>Axinæa quinqueregata</i> , Conrad.	N. Car.
136. <i>Axinæa tricenaria</i> , Conrad.	N. Car.
137. <i>Axinæa transversa</i> , (Tuomey & Holmes) Conrad.	S. Car.
138. <i>Axinæa subovata</i> , (Say) Conrad.	Md.

139. *Axinæa tumulus*, *Conrad*. Va.
 140. *Limopsis nitens*, (*Conrad*) *Meek*. Or.
 141. *Barbatia propatula*, *Conrad*. N. Car.
 142. *Barbatia marylandica*, *Conrad*. Md.
 143. *Barbatia hians*, (*Tuomey & Holme*) *Conrad*. S. Car.
 144. *Barbatia cæolata*, *Conrad*. N. Car.; S. Car.
 145. *Striarca centenaria*, *Conrad*. Va.; Md.; N. Car.; S. Car.
 146. *Anadara ? canalis*, (*Conrad*) *Meek*. Cal.
 147. *Anadara ? congesta*, (*Con.*) *Meek*. Cal.
 148. *Anadara incile*, (*Say*) *Meek*. Va.
 149. *Anadara microdonta*, (*Conrad*) *Meek*. Cal.
 150. *Anadara trigintinaria*, (*Conrad*) *Meek*. S. Car.
 151. *Anadara protracta*, (*Rogers*) *Meek*. Va.
 152. *Anadara trilineata*, (*Conrad*) *Meek*. Cal.
 153. *Scapharca arata*, (*Say*) *Conrad*. Md.
 154. *Scapharca æquicostata*, *Conrad*. N. Car.; S. Car.
 155. *Scapharca callepleura*, *Conrad*. Md.
 156. *Scapharca idonea*, *Conrad*. Md.
 157. *Scapharca incongrua*, (*Say?*) *Conrad*. S. Car.
 158. *Scapharca improcera*, *Conrad*. N. Car.; Md. ?
 159. *Scapharca lineolata*, *Conrad*. N. Car.
 160. *Scapharca lineosa*, (*Say*) *Conrad*. S. Car.; N. Car.
 161. *Scapharca plicatura*, *Conrad*. N. Car.
 162. *Scapharca rustica*, (*Tuomey & Holmes*) *Conrad*. S. Car.
 163. *Scapharca stillicidium*, *Conrad*. Md.
 164. *Scapharca scalaris*, *Conrad*. Va.
 165. *Scapharca subsinuata*, *Conrad*. N. Car.
 166. *Scapharca subrostrata*, *Conrad*. Md.
 167. *Scapharca transversa*, (*Say?*) *Conrad*. Va.; N. Car.
 168. *Scapharca triquetra*, *Conrad*. Md.
 169. *Arca* [?] *obispoana*, *Conrad*. Cal.
 170. *Argina pexata*, (*Say*) *Conrad*. S. Car.
 171. *Nœtia carolinensis*, *Conrad*. N. Car.
 172. *Nœtia limula*, *Conrad*. Va.; N. Car.

Trigoniidæ.

173. *Verticordia, Emmonsii*, *Conrad*. N. Car.

Pteriidæ.

174. *Pteria* [?] *multangula*, (*H. C. Lea*) *Meek*. Va.
 175. *Melina montana*, (*Conrad*) *Meek*. Cal.
 176. *Melina torta*, (*Say*) *Meek*. Md.

Mytilidæ.

177. *Mytilus inezensis*, *Conrad*. Cal.
 178. *Crenella æquilatera*, (*H. C. Lea*) *Con.* Va.
 179. *Volsella contracta*, (*Conrad*) *Meek*. Cal.

180. *Volsella* [?] *spinigera*, (*H. C. Lea*) *Meek.* Va.
 181. *Volsella* *Ducatalii*, (*Conrad*) *Meek.* Md.
 182. *Volsella* *inflata*, (*Tuomey & Holmes*) *Meek.* S. Car.
 183. *Volsella* *striata*, *Gabb.* Cal.
 184. ? *Mytiloconcha* *incurva*, *Conrad.* Md.
 185. ? *Mytiloconcha* *incrassata*, *Conrad.* Va. ? S. Car.

Crassatellidæ.

186. *Carditamera* *aculeata*, *Conrad.* N. Jer.
 187. *Carditamera* *arata*, *Conrad.* N. Jer. ; Md. ; Va. ; N. & S. Car.
 188. *Carditamera* *carinata*, *Conrad.* N. & S. Car.
 189. *Carditamera* *protracta*, *Conrad.* Md.
 190. *Venericardia* (*Pteromeris*) *abbreviata*, (*Conrad*) *Meek.* ?
 191. *Venericardia* (*Pteromeris*) *radians*, (*Conrad*) *Meek.* ?
 192. *Venericardia* (*Cardiocardites*) *carinata*, (*Emmons*) *Meek.* N. C.
 193. *Venericardia* (*Cardiocardites*) *sublenta*, (*Conrad*) *Meek.* Or.
 194. *Venericardia* (*Cardiocardites*) *granulata*, *Say* Md. ; Va. ;
 S. Car.
 195. *Venericardia* (*Cardiocardites*) *monilicosta*, (*Gabb*) *Meek.* Cal.
 196. *Venericardia* (*Cardiocardites*) *occidentalis*, (*Conr.*) *Meek.* Cal.
 197. *Venericardia* (*Cardiocardites*) *tridentata*, *Say* N. & S. C.
 198. *Crassatella* *curta*, *Conrad.* ?
 199. *Crassatella* *colina*, *Conrad.* Cal.
 200. *Crassatella* *marylandica*, *Conrad.* Md.
 201. *Crassatella* *melina*, *Conrad.* N. J.
 202. *Crassatella* *turgidula*, *Conrad.* Md.
 203. *Crassatella* *undulata*, *Say.* Va. ; N. Car.
 204. *Erycinella* *ovalis*, *Conrad.* Va.
 205. *Gouldia* *lunulata*, *Conrad.* Va.
 206. *Euloxa* *latisulcata*, *Conrad.* Va.
 207. *Astarte* *arata*, *Conrad.* Va.
 208. *Astarte* *bella*, *Conrad.* Va.
 209. *Astarte* *concentrica*, *Conrad.* Va.
 210. *Astarte* *cuneiformis*, *Conrad.* Md.
 211. *Astarte* *Coheni*, *Conrad.* Va.
 212. *Astarte* *distans*, *Conrad.* Md. ?
 213. *Astarte* *exaltata*, *Conrad.* Md.
 214. *Astarte* *lineolata*, *H. C. Lea.* Va.
 215. *Astarte* *obruta*, *Conrad.* Md.
 216. *Astarte* *perplana*, *Conrad.* Md.
 217. *Astarte* *planulata*, *Conrad.* Md.
 218. *Astarte* *symmetrica*, *Conrad.* Va.
 219. *Astarte* *Thomasii*, *Conrad.* N. J.
 220. *Astarte* *undulata*, *Say.* Md. ; Va. ; N. & S. Car.
 221. *Astarte* *vicina*, *Say.* Md.
 222. *Astarte* *varians*, *Conrad.* Md.
 223. *Astarte* *virginica*, *Conrad.* Va.

Solemyidæ.

224. *Solemya ventricosa*, *Conrad.* Or.

Leptonidæ.

225. *Lepton mactroides*, *Conrad.* Md.

Ungulinidæ.

226. *Kellia lævis*, (*H. C. Lea*) *Conrad.* Va.
 227. *Sphærella subvexa*, *Conrad.* Va.
 228. *Mysia acclinis*, *Conrad.* Va. ; N. Car.
 229. *Mysia elevata*, *Conrad.* N. Car.

Lucinidæ.

230. *Loripes parilis*, *Conrad.* Or.
 231. *Lucina Americana*, *De France.* Md. ; Va. ; S. Car.
 232. *Lucina contracta*, *Say.* Va.
 233. *Lucina crenulata*, *Conrad.* Va.
 234. *Lucina estrellana*, (*Conrad*) *Meek.* Cal.
 235. *Lucina fibrosa*, *Shumard.* Or.
 236. *Lucina Foremani*, *Conrad.* Md. ; N. Car.
 237. *Lucina permacra*, (*Conrad*) *Meek.* Cal.
 238. *Lucina Leana*, *D'Orbigny.* Va.
 239. *Lucina subobliqua*, *Say.* Md.
 240. *Lucina subplana*, *Conrad.* Md.
 241. *Lucina trisulcata*, *Conrad.* N. Car.
 242. *Lucina undulata*, *Conrad.* N. Car.
 243. *Lucina (Codakia) cribraria*, *Say.* Md.
 244. *Lucina (Codakia) multistriata*, *Conrad.* N. Car.
 245. *Lucina (Codakia) speciosa*, *H. D. & W. B. Rogers.* Va.
 246. *Lucina (Cyclas) Conradi*, *D'Orbigny.* Va.
 247. *Thyatira ? bisecta*, (*Conrad*) *Meek.* Or.

Chamidæ.

248. *Chama congregata*, *Conrad.* Md. ; Va. ; S. Car.
 249. *Chama corticosa*, *Conrad.* Va. ; N. & S. Car.
 250. *Chama striata*, *Emmons.* N. Car.
 251. *Chama (Arcinella) arcinella*, *Linnæus.* N. & S. Car.

Glossidæ.

252. *Glossus fraterna*, (*Say*) *Meek.* Md. ; Va. ; N. Car.
 253. *Glossus Markoei*, (*Conrad*) *Meek.* Md.

Cardiidæ.

254. *Cardium (Cerastoderma) acutilaqueatum*, *Conrad.* ?
 255. *Cardium (Cerastoderma) carolinense*, *Conrad.* N. & S. Car.
 256. *Cardium (Cerastoderma) craticuloides*, *Conrad.* Md.

257. <i>Cardium (Cerastoderma) laqueatum, Conrad.</i>	Md.
258. <i>Cardium (Cerastoderma) leptopleura, Conrad.</i>	Md.
259. <i>Cardium (Cerastoderma) virginianum, Conrad.</i>	Va.
260. <i>Cardium (Cerastoderma) modestum, Conrad.</i>	Cal.
261. <i>Cardium (Lævicardium) sublineatum, Conrad.</i>	N. Car.
262. <i>Cardium Gabbii, Remond.</i>	Cal.
263. <i>Cardium muricatum, Linnaeus ?</i>	N. & S. Car.

Cyrenidæ.

264. <i>Corbicula densata, Conrad.</i>	Va. ; N. & S. Car.
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Petricolidæ.

265. <i>Petricola compressa, H. C. Lea.</i>	Va.
266. <i>Petricola carolinensis, Conrad.</i>	S. Car.
267. <i>Pliorytis centenaria, Conrad.</i>	M. ; Va. ; S. Car.

Veneridæ.

268. <i>Mercenaria cancellata, Gabb.</i>	N. Car.
269. <i>Mercenaria capax, Conrad.</i>	Va.
270. <i>Mercenaria violacea, Schum ?</i>	Md. ; Va. ; N. & S. Car.
271. <i>Mercenaria permagna, Conrad.</i>	Va. ; S. Car.
272. <i>Mercenaria Rileyi, Conrad.</i>	Md. ; Va. ; N. & S. Car.
273. <i>Mercenaria submortoni, D'Orbigny.</i>	Md.
274. <i>Mercenaria tetrica, Conrad.</i>	Md.
275. <i>Mercenaria tridacnoides, (Lamk.) Conrad.</i>	Va.
276. <i>Psephis tantilla, (Gould) Gabb.</i>	Cal.
277. <i>Venus ? ascia, H. C. Lea.</i>	Va.
278. <i>Venus securis, Shumard.</i>	Or.
279. <i>Venus Ducatellii, Conrad.</i>	N. Jer.
280. <i>Venus lamellifera, Conrad.</i>	Or.
281. <i>Venus pajaroana, Conrad.</i>	Cal.
282. <i>Chione (Lirophora) athleta, (Conrad) Meek.</i>	Va. ; N. & S. Car.
283. <i>Chione (Lirophora) alveatus, (Conr.) Meek.</i>	Md. ; Va. ; N. & S. C.
284. <i>Chione (Lirophora) latilirata, (Conrad) Meek.</i>	Md.
285. <i>Pachydesma ineza, Conrad.</i>	Cal.
286. <i>Dione albaria, (Say) Conrad.</i>	Md.
287. <i>Dione angustifrons, (Conrad) Meek.</i>	Or.
288. <i>Dione ? brevilineata, (Conrad) Meek.</i>	Or.
289. <i>Dione decisa, (Conrad) Meek.</i>	Cal.
290. <i>Dione marylandica, Conrad.</i>	Md.
291. <i>Dione carolinensis, Conrad.</i>	N. Car.
292. <i>Dione densata, Conrad.</i>	Va.
293. <i>Dione elevata, (H. C. Lea) Conrad.</i>	Va.
294. <i>Dione idonea, Conrad.</i>	Md. ; S. Car.
295. <i>Dione marylandica, Conrad.</i>	Md.
296. <i>Dione obovata, Conrad.</i>	Va.
297. <i>Dione oregonensis, (Conrad) Meek.</i>	Or.

298. <i>Dione reposta</i> , <i>Conrad</i> .	Va. ; N. Car.
299. <i>Dione Sayana</i> , <i>Conrad</i> .	Md. ; N. & S. Car.
300. <i>Dione spherica</i> , (<i>H. C. Lea</i>) <i>Conrad</i> .	Va.
301. <i>Dione staminea</i> , <i>Conrad</i> .	?
302. <i>Dione tularana</i> , (<i>Conrad</i>) <i>Meek</i> .	Cal.
303. <i>Dione subnasuta</i> , <i>Conrad</i> .	Md.
304. <i>Dione uniomeris</i> , (<i>Conrad</i>) <i>Meek</i> .	Cal.
305. <i>Dione virginiana</i> , <i>Conrad</i> .	Va.
306. <i>Dione vespertina</i> , (<i>Conrad</i>) <i>Meek</i> .	Or.
307. <i>Dione</i> (<i>Chamelea</i>) <i>cancellata</i> , (<i>Linnæus</i> ?) <i>Conrad</i> .	S. Car.
308. <i>Dione</i> (<i>Chamelea</i>) <i>cribraria</i> , <i>Conrad</i> .	N. & S. Car.
309. <i>Dione</i> (<i>Chamelea</i>) <i>cortinaria</i> , (<i>H. D. & W. B. Rogers</i>) <i>Conrad</i> .	Va.
310. <i>Gemma spherica</i> , (<i>H. C. Lea</i>) <i>Conrad</i> .	Va.
311. <i>Circe metastrata</i> , <i>Conrad</i> .	N. & S. Car.
312. <i>Dosinia alta</i> , <i>Conrad</i> .	Cal.
313. <i>Dosinia acetabulum</i> , <i>Conrad</i> .	Md. & Va.
314. <i>Dosinia elegans</i> , <i>Conrad</i> .	N. Car.
315. <i>Dosinia intermedia</i> , <i>Conrad</i> .	S. Car.
316. <i>Dosinia longula</i> , <i>Conrad</i> .	Cal.
317. <i>Dosinia montana</i> , <i>Conrad</i> .	Cal.
318. <i>Dosinia subobliqua</i> , <i>Conrad</i> .	Cal.
319. <i>Tapes regularis</i> , <i>Gabb</i> .	Cal.
320. <i>Tapes linteatum</i> , <i>Conrad</i> .	Cal.
321. <i>Tapes montana</i> , <i>Conrad</i> .	Cal.
322. <i>Tapes inezensis</i> , <i>Conrad</i> .	Cal.
323. <i>Clementia inoceramiformis</i> , (<i>Wagner</i>) <i>Conrad</i> .	Md.

Tellinidæ.

324. <i>Tellina arctata</i> , <i>Conrad</i> .	Or.
325. <i>Tellina abrupta</i> , <i>Conrad</i> .	Or.
326. <i>Tellina diegoana</i> , <i>Conrad</i> .	Cal.
327. <i>Tellina emacerata</i> , <i>Conrad</i> .	Or.
328. <i>Tellina congesta</i> , <i>Conrad</i> .	Cal.
329. <i>Tellina eborea</i> , <i>Conrad</i> .	Or.
330. <i>Tellina ocoyana</i> , <i>Conrad</i> .	Cal.
331. <i>Tellina nasuta</i> , <i>Conrad</i> .	Or.
332. <i>Tellina pedroana</i> , <i>Conrad</i> .	Cal.
333. <i>Tellina bitruncata</i> , <i>Conrad</i> .	Or.
334. <i>Tellina oregonensis</i> , <i>Conrad</i> .	Or.
335. <i>Tellina</i> [<i>Angulus</i>] <i>polita</i> , <i>Say</i> ?	S. Car.
336. <i>Tellina</i> [<i>Angulus</i>] <i>declivis</i> , <i>Say</i> .	Va.
337. <i>Tellina</i> [<i>Peronæoderma</i>] <i>alternata</i> , <i>Say</i> ?	S. Car.
338. <i>Tellina</i> (<i>Peronæoderma</i>) <i>arctata</i> , <i>Conrad</i> .	N. Car.
339. <i>Tellina</i> (<i>Peronæoderma</i>) <i>egena</i> , <i>Conrad</i> .	Va.
340. <i>Tellina</i> (<i>Peronæoderma</i>) <i>producta</i> , <i>Conrad</i> .	?
341. <i>Tellina</i> (<i>Peronæoderma</i>) <i>lens</i> , <i>Conrad</i> .	Md.

342. *Tellina* (*Peronæoderma*) *lusoria*, *Say?* Va.; N. & S. Car.
 343. *Arcopagia* (undt.), *Conrad.* Cal.
 344. *Psammocola* (?) *lucinoidea*, *H. C. Lea.* Va.
 345. *Psammocola* (?) *pliocena*, *Tuomey & Holmes.* S. Car.
 346. *Metis* *biplicata*, *Conrad.* Md.; N. & S. Car.
 347. *Strigilla* *carolinensis*, *Conrad.* S. Car.
 348. *Abra* *carinata*, *Conrad.* Md.; N. Car.
 349. *Abra* *equalis*, (*Say*) *Conrad.* N. & S. Car.
 350. *Abra* *æquata*, *Conrad.* N. & S. Car.
 351. *Abra* *protecta*, *Conrad.* N. Car.
 352. *Abra* *subreflexa*, *Conrad.* Va.
 353. *Abra* *subovata*, (*Say*) *Conrad.* Md.
 354. *Abra* *nuculoides*, *Conrad.* N. Car.
 355. *Semele* *orbiculata* (*Say?*) *Conrad.* S. Car.
 356. *Fabella* *constricta*, *Conrad.* N. Car.
 357. *Cumingia* *tellinoides*, *Conrad.* Va.; S. Car.
 358. *Donax* [??] *protecta*, *Conrad.* Or.
 359. *Mesodesma* *incrassata*, *Conrad.* Md.

Mactridæ.

360. *Lutraria* *transmontana*, *Conrad.* Cal.
 361. *Lutraria?* *Traskii*, *Conrad.* Cal.
 362. *Mactra* *albaria*, *Conrad.* Or.
 363. *Mactra* *delumbis*, *Conrad.* Md.
 364. *Mactra?* *gabrotensis*, *Conrad.* Cal.
 365. *Mactra* *ponderosa*, *Conrad.* Md.
 366. *Mactra* *diegoana*, *Conrad.* Cal.
 367. *Spisula* *modicella*, *Conrad.* Va.
 368. *Spisula* *medialis*, *Conrad.* ?
 369. *Spisula* *similis*, (*Say?*) *Conrad.* N. & S. Car.
 370. *Spisula* *confragosa*, *Conrad.* Md.
 371. *Mulinia* *crassidens*, *Conrad.* N. Car.
 372. *Mulinia* [?] *densata*, *Conrad.* Cal.
 373. *Mulinia* *lateralis*, (*Say*) *Conrad.* N. & S. Car.
 374. *Mulinia* *triquetra*, *Conrad.* Va.; N. Car.
 375. *Rangia* *Leonti*, *Conrad.* Cal.
 376. *Rangia* (*Perissodon*) *clathrodonta*, *Conrad.* Va.; N. & S. Car.
 377. *Rangia* (*Perissodon*) *minor*, *Conrad.* N. Car.
 378. *Standella* *fragilis*, *Chemnitz?* N. & S. Car.
 379. *Standella* *subparilis*, *Conrad.* N. Car.

Anatinidæ.

380. *Periploma* *alta*, *Conrad.* N. Jer.
 381. *Periploma* *antiqua*, *Conrad.* Va.
 382. *Thracia* *ventricosa*, *Conrad.* Or.
 383. *Thracia* [?] *transversa*, *H. C. Lea.* Va.
 384. *Thracia* *mactropsis*, *Conrad.* Cal.

385. *Margaritaria abrupta*, *Conrad*. Va.; N. & S. Car.
 386. *Pandora crassidens*, *Conrad*. Va.; N. & S. Car.
 387. *Pandora bilirata*, *Conrad*. Cal.
 388. *Pandorella arenosa*, *Conrad*. Va.

Corbulidæ.

389. *Sphenia bilirata*, *Gabb*. Cal.
 390. *Corbula cuneata*, *Say*. Md.
 391. *Corbula diegoana*, *Conrad*. Cal.
 392. *Corbula elevata*, *Conrad*. N. Jer.
 393. *Corbula Evansana*, *Shumard*. Oreg.
 394. *Corbula idonea*, *Conrad*. Md.
 395. *Corbula inæqualis*, *Say*. Va.
 396. *Cryptomya ovalis*, *Conrad*. Cal.

Myidæ.

397. *Mya corpulenta*, *Conrad*. Va.
 398. *Mya producta*, *Conrad*. Va.
 399. *Mya montereyana*, *Conrad*. Cal.
 400. *Mya reflexa*, *Conrad*. Va.
 401. *Mya ? subsinuata*, *Conrad*. Cal.

Saxicavidæ.

402. *Saxicava bilineata*, *Conrad*. Va.
 403. *Saxicava lancea*, (*H. C. Lea*) *Conrad*. Va.
 404. *Saxicava myæformis*, *Conrad*. N. Jer.
 405. *Saxicava pectorosa*, *Conrad*. Va.
 406. *Saxicava rugosa*, *Lamk ?* Md.
 407. *Panopæa abrupta*, (*Conrad*) *Woodward*. Or.
 408. *Panopæa Americana*, *Conrad*. Md.
 409. *Panopæa dubia*, *H. C. Lea*. Va.
 410. *Panopæa estrellana*, (*Conrad*) *Meek*. Cal.
 411. *Panopæa Goldfussii*, *Wagner*. Md.
 412. *Panopæa porrecta*, *Conrad*. Md.
 413. *Panopæa reflexa*, *Say*. Va.; N. & S. Car.
 414. *Paramya subovata*, *Conrad*. Va. & N. Car.

Solenidæ.

415. *Ensis ensiformis*, *Conrad*. Md.
 416. *Ensis curtus*, (*Conrad*) *Meek*. Or.
 417. *Ensis directus*, *Conrad*. S. & N. Car.
 418. *Ensis magnodentatus*, (*H. C. Lea*) *Conrad*. Va.
 419. *Siliquaria equalis*, *Conrad*. N. Car.
 420. *Siliquaria carolinensis*, *Conrad*. N. & S. Car.

Pholadidæ.

421. *Pholas arcuata*, *Conrad*. Va.; S. Car.
 422. *Pholas producta*, *Conrad*. S. Car.
 423. *Pholas [?] rhomboidea*, *H. C. Lea*. Va.

424. *Teredo calamus*, *H. C. Lea*. Va.
 425. *Teredo fistula*, *H. C. Lea*. Va.

Gastrochænidæ.

426. *Gastrochæna ligula*, *H. C. Lea*. Va.

CLASS GASTEROPODA.

SUBCLASS OPISTHOBRANCHIATA.

Order TECTIBRANCHIATA.

Bullidæ.

427. *Bulla cylindrus*, *H. C. Lea*. Va.
 428. *Bulla subspissa*, *Conrad*. Md.
 429. *Bulla* [??] *jugularis*, *Conrad*. Cal.
 430. *Tornatina cylindrica*, *Emmons*. N. Car.

Cylichnidæ.

431. *Cylichna petrosa*, (*Conrad*) *Meek*. Or.
 432. *Volvula iota*, *Conrad*. Md.

Actæonidæ.

433. *Actæon* [?] *angulatus*, *H. C. Lea*. Va.
 434. *Actæon ellipticus*, (*Trask*) *Meek*. Cal.
 435. *Actæon glans*, *H. C. Lea*. Va.
 436. *Actæon* [?] *globosus*, *H. C. Lea*. Va.
 437. *Actæon melanoides*, *Conrad*. Md.
 438. *Actæon novellus*, *Conrad*. Va.
 439. *Actæon ovooides*, *Conrad*. Md.
 440. *Actæon sculptus*, *H. C. Lea*. Va.
 441. *Actæon* [?] *turbinatus*, *H. C. Lea*. Va.

SUBCLASS PULMONIFERA.

Limnæidæ.

442. *Planorbis vetustus*, *Meek & Hayden*. Dak.
 443. *Planorbis Leidyi*, *Meek & Hayden*. Dak.
 444. *Planorbis* [*Segmentina*?] *nebrascensis*, *Evans & Shumard*. Dak.
 445. *Limnæa Meekiana*, *Evans & Shumard*. Dak.
 446. *Limnæa diaphana*, *Evans & Shumard*. Dak.
 447. *Limnæa nebrascensis*, *Evans & Shumard*. Dak.
 448. *Physa nebrascensis*, *Evans & Shumard*. Dak.
 449. *Physa secalina*, *Evans & Shumard*. Dak.

Auriculidæ.

450. *Melampus* (*Ensiphorus*) *longidens*, *Conrad*. Va.

Helicidæ.

451. *Helix Leidyi*, *Hall & Meek.* Dak.

SUBCLASS PROSOBRANCHIATA.

Order **CYCLOBRANCHIATA.****? Dentalidæ.**

452. *Dentalium attenuatum*, *Say.* Md. ; S. Car.
 453. *Dentalium carolinense*, *Conrad.* N. Car.
 454. *Dentalium duodecenare*, *Emmons.* N. Car.
 455. *Dentalium* [?] *thallus*, *Conrad.* Va. ; N. & S. Car.
 456. *Dentalium pliocenum*, *Tuomey & Holmes.* S. Car.
 457. *Dentalium substriatum*, (*Conrad*) *Woodward.* Or.

Chitonidæ.

458. *Chiton transenna*, *H. C. Lea.* Va.

Patellidæ.

459. *Patella acinaces*, *H. C. Lea.* Va.

Order **RHIPHIDOGLOSSATA.****Fissurellidæ.**

460. *Fissurella alticostata*, *Conrad.* Md.
 461. *Fissurella catilliformis*, *H. D. & W. B. Rogers.* Va.
 462. *Fissurella Griscomi*, *Conrad.* N. Jer.
 463. *Fissurella marylandica*, *Conrad.* Md.
 464. *Fissurella nassula*, *Conrad.* Md.
 465. *Fissurella redimicula*, *Say.* Va.
 466. *Cemoria oblonga*, *H. C. Lea.* Va.
 467. *Cemoria crucibuliformis*, *Conrad.* Cal.

Rotellidæ.

468. *Umbonium carinatum*, (*H. C. Lea*) *Conrad.* Va.
 469. *Umbonium lenticulare*, (*H. C. Lea*) *Conrad.* Va.
 470. *Umbonium subconicum*, (*H. C. Lea*) *Conrad.* Va.
 471. *Umbonium umbilicatum* (*H. C. Lea*) *Conrad.* Va.
 472. *Carinorbis arenosum*, *Conrad.* Va.
 473. *Carinorbis costulatus*, (*H. C. Lea*) *Conrad.* Va.
 474. *Carinorbis distans*, *Conrad.* N. Car.
 475. *Carinorbis lyra*, *Conrad.* Va.
 476. *Carinorbis quadricostatus*, (*Emmons*) *Conrad.* N. Car.

Trochidæ.

477. *Zizyphinus aratus*, (*H. C. Lea*) *Conrad.* Va.
 478. *Zizyphinus armillatus*, (*Tuomey & Holmes*) *Conrad.* S. Car.

479. <i>Zizyphinus armillus</i> , (<i>H. C. Lea</i>) <i>Conrad</i> .	Va.
480. <i>Zizyphinus bellus</i> , <i>Conrad</i> .	Va.
481. <i>Zizyphinus conus</i> , (<i>H. C. Lea</i>) <i>Conrad</i> .	Va.
482. <i>Zizyphinus gemma</i> , (<i>Tuomey & Holmes</i>) <i>Conrad</i> .	S. Car.
483. <i>Zizyphinus humilis</i> , <i>Conrad</i> .	Md.
484. <i>Zizyphinus labrosus</i> , <i>Conrad</i> .	Va.
485. <i>Zizyphinus lens</i> , <i>H. C. Lea</i> .	Va.
486. <i>Zizyphinus Mitchelli</i> , <i>Conrad</i> .	Va.
487. <i>Zizyphinus peralveatus</i> , <i>Conrad</i> .	Md.
488. <i>Zizyphinus philanthropus</i> , <i>Conrad</i> .	Va.
489. <i>Zizyphinus Ruffinii</i> , (<i>H. C. Lea</i>) <i>Conrad</i> .	Va.
490. <i>Zizyphinus reclusus</i> , <i>Conrad</i> .	Md.
491. <i>Zizyphinus torquatus</i> , (<i>H. C. Lea</i>) <i>Conrad</i> .	N. Car.
492. <i>Zizyphinus arenosus</i> , <i>Conrad</i> .	

Turbinidæ.

493. <i>Monilea exoleta</i> , <i>Conrad</i> .	?
494. <i>Monilea (Leiotrochus) distans</i> , <i>Conrad</i> .	Md. ?
495. <i>Monilea (Leiotrochus) eborea</i> , (<i>Wagner</i>) <i>Conrad</i> .	Md.
496. <i>Monilea ? (Leiotrochus) caperatus</i> , <i>Conrad</i> .	Va.
497. <i>Monilea (Leiotrochus) kiawahensis</i> , (<i>Tuomey & Holmes</i>) <i>Conrad</i> .	S. Car.

Order CTENOBRANCHIATA.

Vanikoridæ.

498. <i>Vanikoro diegoana</i> , (<i>Conrad</i>) <i>Meek</i> .	Cal.
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Calyptræidæ.

499. <i>Crucibulum constrictum</i> , <i>Conrad</i> .	Md.
500. <i>Crucibulum costatum</i> , (<i>Say</i>) <i>Conrad</i> .	Md.
501. <i>Crucibulum dumosum</i> , <i>Conrad</i> .	N. & S. Car.
502. <i>Crucibulum grande</i> , (<i>Say</i>) <i>Conrad</i> .	Va.
503. <i>Crucibulum multilineatum</i> , <i>Conrad</i> .	N. Car.
504. <i>Crucibulum ramosum</i> , <i>Conrad</i> .	Va.
505. <i>Trochita centralis</i> , <i>Conrad</i> .	N. & S. Car.
506. <i>Trochita diegoana</i> , <i>Conrad</i> .	Cal.
507. <i>Trochita concentrica</i> (<i>H. C. Lea</i>) <i>Conrad</i> .	Va.
508. <i>Trochita costellata</i> , <i>Conrad</i> .	Cal.
509. <i>Trochita perarmata</i> , <i>Conrad</i> .	Md.
510. <i>Crypta convexa</i> , (<i>Say?</i>) <i>Conrad</i> .	?
511. <i>Crypta costata</i> , (<i>Morton</i>) <i>Conrad</i> .	Md.
512. <i>Crypta cornucopia</i> , (<i>H. C. Lea</i>) <i>Conrad</i> .	Va.
513. <i>Crypta cymbiformis</i> , <i>Conrad</i> .	Va.
514. <i>Crypta densata</i> , <i>Conrad</i> .	N. Car.
515. <i>Crypta fornicata</i> , (<i>Say?</i>) <i>Conrad</i> .	N. & S. Car.
516. <i>Crypta glauca</i> , (<i>Say?</i>) <i>Conrad</i> .	?

517. *Crypta lamina*, (*H. C. Lea*) *Conrad.* Va.
 518. *Crypta plana*, *Say?* (*Sp.*) N. & S. Car.
 519. *Crypta ponderosa*, (*H. C. Lea*) *Conrad.* Va.
 520. *Crypta spinosa*, *Conrad.* Va.
 521. *Crypta praeurupta*, (*Conrad*) *Meck.* Or.
 522. *Capulus Bullii*, *Tuomey & Holmes.* S. Car.

Cæcidæ.

523. *Cæcum annulatum*, *Emmons.* N. Car.

Vermetidæ.

524. *Vermetus carolinensis*, *Conrad.* N. Car.
 525. *Vermetus convolutus*, (*H. C. Lea*) *Conrad.* Va.
 526. *Anguinella virginiana*, *Conrad.* Va.
 527. *Petalococonchus sculptulatus*, *H. C. Lea.* Va.

Turritellidæ.

528. *Turritella æquistriata*, *Conrad.* N. Car.
 529. *Turritella alticostata*, *Conrad.* Va.
 530. *Turritella Burdenii*, (*Tuomey & Holmes*) *Conrad.* S. Car.
 531. *Turritella constricta*, *Emmons.* N. Car.
 532. *Turritella cumberlandia*, *Conrad.* N. Jer.
 533. *Turritella exaltata*, *Conrad.* Md.
 534. *Turritella fluxionalis*, *H. D. & W. B. Rogers* Va.
 535. *Turritella inezana*, *Conrad.* Cal.
 536. *Turritella striata*, (*Tuomey & Holmes*) *Conrad.* S. Car.
 537. *Turritella indenta*, *Conrad.* Md.
 538. *Turritella octonaria*, *Conrad.* Md.
 539. *Turritella ocoyana*, *Conrad.* Cal.
 540. *Turritella plebeia*, *Say.* Md.
 541. *Turritella quadristriata*, *H. D. & W. B. Rogers.* Md.
 542. *Turritella secta*, *Conrad.* N. Jer.
 543. *Turritella terstriata*, *H. D. & W. B. Rogers.* Va.
 544. *Turritella terebriformis*, *Conrad.* ?
 545. *Turritella varieta*, *Conrad.* Cal.
 546. *Turritella variabilis*, *Conrad.* Md.
 547. *Turritella perlaqueata*, *Conrad.* Md.

Viviparidæ.

548. *Viviparus glaber*, (*H. C. Lea*) *Meck.* Va.

Lacunidæ.

549. *Lacuna carinata*, *Gould.* Cal.

Litorinidæ.

550. *Litorina carolinensis*, *Conrad.* S. Car.
 551. *Litorina lineata*, *Emmons.* N. Car.

Cerithiidae.

552. *Cerithium* [Sichar] *moniliferum*, *H. C. Lea*. Va.; N. Car.
 553. *Cerithium* [?] *mediale*, *Conrad*. Or.

Cancellariidae.

554. *Cancellaria alternata*, *Conrad*. Md.
 555. *Cancellaria carolinensis*, *Conrad*. N. Car.
 556. *Cancellaria depressa*, *Tuomey & Holmes*. S. Car.
 557. *Cancellaria engonata*, *Conrad*. Md.
 558. *Cancellaria lunata*, *Conrad*. Md.
 559. *Cancellaria perspectiva*, *Conrad*. Va.
 560. *Cancellaria plagiostoma*, *Conrad*. Va.
 561. *Cancellaria scalarina*, *Conrad*. ?
 562. *Cancellaria venusta*, *Tuomey & Holmes*. S. Car.
 563. *Cancellaria* (*Trigonostoma*) *biplicifera*, *Conrad*. Md.

Cypræidae.

564. *Cypræa carolinensis*, *Conrad*. N. & S. Car.
 565. *Cypræa annulifera*, *Conrad*. ?
 566. *Cypræa pediculus*, *Emmons*. N. Car.

Conidae.

567. *Conus adversarius*, *Conrad*. N. & S. Car.
 568. *Conus diluvianus*, *Green*. Md.
 569. *Conus marylandicus*, *Green*. Md.
 570. *Celatoconus protractus*, *Conrad*.

Solariidae.

571. *Architectonica* (*Phillipia*) *trilineata*, *Conrad*. Md.
 572. *Architectonica* (*Phillipia*) *nupera*, *Conrad*. Va.
 573. *Architectonica* (*Phillipia*) *perspectiva*, *Linnæus?* S. Car.

Cerithiopsidae.

574. *Cerithiopsis annulata*, (*Emmons*) *Conrad*. N. Car.
 575. *Cerithiopsis clavula*, (*H. C. Lea*) *Conrad*. Va.
 576. *Cerithiopsis Emmonsii*, *Conrad*. N. Car.

Eulimidae.

577. *Niso lineata*, *Conrad*. Md.
 578. *Eulima eborea*, *Conrad*. Va.
 579. *Eulima migrans*, *Conrad*. Va.

Pyramidelidae.

580. *Obeliscus arenosus* *Conrad*. Va. & N. Car.
 581. *Obeliscus reticulatus* (*Emmons*) *Conrad*. N. Car.

582. <i>Odostomia</i> ? <i>glans</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
583. <i>Odostomia</i> ? <i>curta</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
584. <i>Odostomia</i> <i>dedælia</i> (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
585. <i>Odostomia</i> <i>granulata</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
586. <i>Odostomia</i> <i>nitens</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
587. <i>Odostomia</i> <i>ovula</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
588. <i>Odostomia</i> <i>turbinata</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
589. <i>Odostomia</i> ? <i>turbinopsis</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
590. <i>Odostomia</i> ? <i>sculpta</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
591. <i>Turbonilla</i> <i>perlaqueata</i> , <i>Conrad.</i>	Md.
592. <i>Turbonilla</i> <i>papillosa</i> , (<i>Trask</i>) <i>Meek.</i>	Cal.
593. <i>Turbonilla</i> <i>reticulata</i> , (<i>Emmons</i>) <i>Conrad.</i>	N. Ca.
594. <i>Bittium</i> <i>aspèrum</i> , <i>Gabb.</i>	Cal.
595. <i>Auriculina</i> <i>eburnea</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
596. <i>Auriculina</i> <i>exarata</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
597. <i>Auriculina</i> <i>ornata</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
598. <i>Auriculina</i> <i>subula</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
599. <i>Menestho</i> (?) <i>limnæa</i> , <i>Conrad.</i>	Va.

Terebridæ.

600. <i>Terebra</i> (<i>Acus</i>) <i>carolinensis</i> , <i>Conrad.</i>	N. Car.
601. <i>Terebra</i> (<i>Acus</i> ?) <i>clavula</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
602. <i>Terebra</i> (<i>Acus</i>) <i>curvilineata</i> , <i>Conrad.</i>	Md.
603. <i>Terebra</i> (<i>Acus</i>) <i>indentata</i> , <i>Conrad.</i>	N. Car.
604. <i>Terebra</i> (<i>Acus</i>) <i>neglecta</i> , <i>Emmons.</i>	N. Car.
605. <i>Terebra</i> (<i>Acus</i>) <i>simplex</i> , <i>Conrad.</i>	?
606. <i>Terebra</i> (<i>Acus</i>) <i>sublirata</i> , <i>Conrad.</i>	?
607. <i>Terebra</i> (<i>Acus</i>) <i>unilineata</i> , <i>Conrad.</i>	N. & S. Car.

Scalaridæ.

608. <i>Scala</i> <i>arctata</i> , <i>Conrad.</i>	?
609. <i>Scala</i> <i>aciculata</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
610. <i>Scala</i> <i>clathra</i> , (<i>Lamarck</i> ?) <i>Con.</i>	Va.
611. <i>Scala</i> <i>curta</i> , <i>Emmons.</i>	N. Car.
612. <i>Scala</i> <i>distans</i> , <i>Conrad.</i>	?
613. <i>Scala</i> <i>micropleura</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
614. <i>Scala</i> <i>microstoma</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.
615. <i>Scala</i> <i>procera</i> , <i>Conrad.</i>	Va.
616. <i>Scala</i> <i>multistriata</i> , (<i>Say</i> ?) <i>Conrad.</i>	N. & S. Car.
617. <i>Scala</i> (<i>Sthenorytis</i>) <i>expansa</i> , <i>Conrad.</i>	Md.
618. <i>Scala</i> (<i>Sthenorytis</i>) <i>pachypieura</i> , <i>Conrad.</i>	Md.; Va.

Naticidæ.

619. <i>Natica</i> <i>ocoyana</i> , <i>Conrad.</i>	Cal.
620. <i>Natica</i> <i>plicatella</i> , <i>Conrad.</i>	N. & S. Car.
621. <i>Natica</i> <i>inezana</i> , <i>Conrad.</i>	Cal.
622. <i>Natica</i> <i>caroliniana</i> , <i>Conrad.</i>	N. & S. Car.

623. <i>Neverita duplicata</i> , <i>Say?</i>	Md. ; Va. ; N. & S. Car.
624. <i>Neverita percallosa</i> , <i>Conrad.</i>	N. Car.
625. <i>Natica</i> [?] <i>geniculata</i> , <i>Conrad.</i>	Cal.
626. <i>Natica</i> [?] <i>saxea</i> , <i>Conrad.</i>	Or.
627. <i>Lunatia catenoides</i> , (<i>Wood</i>) <i>Conrad.</i>	Md. ; Va. ; S. Car.
628. <i>Lunatia interna</i> , (<i>Say</i>) <i>Conrad.</i>	Md.
629. <i>Lunatia perspectiva</i> , (<i>H. D. & W. B. Rogers</i>) <i>Conrad.</i>	Va.
630. <i>Sigaretus fragilis</i> , (<i>Say</i>) <i>Conrad.</i>	?
631. <i>Sigaretus scopulosus</i> , <i>Conrad.</i>	Or.

Doliidæ.

632. <i>Dolium galea</i> , <i>Lamarck?</i>	S. Car.
633. <i>Dolium petrosum</i> , <i>Conrad.</i>	Or.
634. <i>Dolium</i> ? <i>octocostatum</i> , <i>Emmons.</i>	N. Car.

Ficidæ.

635. <i>Ficus</i> [??] <i>ocoyanus</i> , (<i>Conrad</i>) <i>Meek.</i>	Cal.
636. <i>Ficus reticulatus</i> (<i>Lamarck?</i>)	S. Car.
637. <i>Ficus modestus</i> (<i>Conrad</i>) <i>Meek.</i>	Or.

Cassidæ.

638. <i>Semicassis cælata</i> , <i>Conrad.</i>	Md.
639. <i>Sconsia Hodgei</i> , <i>Conrad.</i>	N. & S. Car.

Volutidæ.

640. <i>Voluta solitaria</i> , <i>Conrad.</i>	Md.
641. <i>Voluta Trenholmii</i> , <i>Tuomey & Holmes.</i>	S. Car.
642. <i>Voluta obtusa</i> , <i>Emmons.</i>	N. Car.
643. <i>Voluta</i> (<i>Volutifusus</i>) <i>mutabilis</i> , <i>Conrad.</i>	N. & S. Car.
644. <i>Megaptygma sinuosa</i> , (<i>Gabb</i>) <i>Conrad.</i>	Tex.
645. <i>Pleioptygma carolinensis</i> , <i>Conrad.</i>	N. & S. Car.

Marginellidæ.

646. <i>Marginella</i> (<i>Volutella</i>) <i>conulus</i> , <i>H. C. Lea.</i>	Va.
647. <i>Marginella</i> (<i>Volutella</i>) <i>distans</i> , <i>Conrad.</i>	?
648. <i>Marginella</i> (<i>Volutella</i>) <i>oliviformis</i> , (<i>Tuomey & Holmes</i>) <i>Emmons.</i>	N. & S. Car.
649. <i>Marginella constricta</i> , <i>Emmons.</i>	N. Car.
650. <i>Marginella denticulata</i> , <i>Conrad.</i>	Md.
651. <i>Marginella eburneola</i> , <i>Conrad.</i>	Va.
652. <i>Marginella</i> [?] <i>exilis</i> , <i>H. C. Lea.</i>	Va.
653. <i>Marginella limatula</i> , <i>Conrad.</i>	Va.
654. <i>Marginella ovata</i> , <i>Emmons.</i>	N. Car.
655. <i>Marginella</i> (<i>Porcellanella</i>) <i>bella</i> , <i>Conrad.</i>	?
656. <i>Erato</i> [?] <i>lævis</i> , <i>Emmons.</i>	

Olivida.

657. *Olivella ancillariformis*, (*H. C. Lea*) *Meek.* Va.
 658. *Olivella duplicata*, *Conrad.* N. Car.
 659. *Oliva canaliculata*, *H. C. Lea.* Va.
 660. *Oliva carolinensis*, *Conrad.* Va.
 661. *Oliva eborea*, *Conrad.* Va.
 662. *Oliva idonea*, *Conrad.* N. Car.

Purpurida.

663. *Purpura (Stramonita) petrosa*, *Conrad.* Cal.
 664. *Cronia? tridentata*, (*Tuomey & Holmes*) *Conrad.* S. Car.
 665. *Ecphora quadricostata*, *Conrad.* Md.; Va.; N. & S. Car.

Buccinida.

666. *Tritia altilis*, *Conrad.* Va.
 667. *Tritia anomala*, (*H. C. Lea*) *Conrad.* Va.
 668. *Tritia ovata*, (*Say*) *Conrad.* Md.
 669. *Tritia bidentata*, (*Emmons*) *Conrad.* N. Car.
 670. *Tritia bilix*, *Conrad.* Va.
 671. *Tritia fossulata*, *Conrad.* ?
 672. *Tritia impressa*, (*H. C. Lea*) *Conrad.* Va.
 673. *Tritia haspuloides*, *Conrad.* ?
 674. *Tritia interrupta*, *Conrad.* N. Car.
 675. *Tritia irrorata*, *Conrad.* S. Car.
 676. *Tritia moniliformis*, (*Emmons*) *Conrad.* N. Car.
 677. *Tritia multilineata* (*Emmons*) *Conrad.* N. Car.
 678. *Tritia multirugata*, *Conrad.* N. Car.
 679. *Tritia porcina*, (*Say*) *Conrad.* Md.; N. & S. Car.
 680. *Tritia prærupta*, *Conrad.* Md.
 681. *Tritia scalaris*, *Conrad.* ?
 682. *Tritia sexdentata*, *Conrad.* ?
 683. *Tritia trivitata*, (*Say?*) *Conrad.* Md.; Va.; S. Car.
 684. *Tritia Tuomeyi*, (*H. C. Lea*) *Conrad.* Va.
 685. *Tritia laqueata*, *Conrad.* Va.
 686. *Tritia (Bulliopsis) integra*, *Conrad.* Md.
 687. *Tritia (Bulliopsis) anomala*, (*H. C. Lea*) *Conrad.* Va.
 688. *Tritia (Bulliopsis) marylandica*, *Conrad.* Md.
 689. *Tritia (Bulliopsis) ovata*, *Conrad.* Md.
 690. *Tritia (Bulliopsis) quadrata*, *Conrad.* Md.
 691. *Buccinum [?] divinctum*, *Conrad.* Or.

Tritoniida.

692. *Bursa (Eupleura) caudata*, (*Say*) *Conrad.* Md.; S. Car.

Pleurotomida.

693. *Turris [??] transmontana*, *Conrad.* Cal.
 694. *Surcula bicatenaria*, *Conrad.* Md.

695. <i>Surcula bella-crenata</i> , <i>Conrad.</i>	Md.
696. <i>Surcula communis</i> , <i>Conrad.</i>	Md.
697. <i>Surcula engonata</i> , <i>Conrad.</i>	Va.
698. <i>Surcula gracilis</i> , <i>Conrad.</i>	Md.
699. <i>Surcula marylandica</i> , <i>Conrad.</i>	Md.
700. <i>Surcula nodulifera</i> , <i>Conrad.</i>	Va.
701. <i>Surcula parva</i> , <i>Conrad.</i>	Md.
702. <i>Surcula rotifera</i> , <i>Conrad.</i>	Md.
703. <i>Surcula rugata</i> , <i>Conrad.</i>	Md.
704. <i>Surcula tricatendaria</i> , <i>Conrad.</i>	Va.
705. <i>Surcula virginiana</i> , <i>Conrad.</i>	Va.
706. <i>Drillia arata</i> , <i>Conrad.</i>	Va.
707. <i>Drillia bella</i> , <i>Conrad.</i>	Va.
708. <i>Drillia distans</i> , <i>Conrad.</i>	Va.
709. <i>Drillia dissimilis</i> , <i>Conrad.</i>	Md.; Va.?
710. <i>Drillia eburnea</i> , <i>Conrad.</i>	Va.
711. <i>Drillia elegans</i> (<i>Emmons</i>) <i>Conrad.</i>	N. Car.
712. <i>Drillia flexuosa</i> , (<i>Emmons</i>) <i>Conrad.</i>	N. Car.
713. <i>Drillia impressa</i> , <i>Conrad.</i>	Va.
714. <i>Drillia limatula</i> , <i>Conrad.</i>	Md.
715. <i>Drillia lunata</i> , (<i>H. C. Lea</i>) <i>Conrad.</i>	Va.; S. Car.
716. <i>Drillia multisecta</i> , <i>Conrad.</i>	Va.
717. <i>Drillia pyrenoides</i> , <i>Conrad.</i>	Va.
718. <i>Drillia tuberculata</i> , (<i>Emmons</i>) <i>Conrad.</i>	N. Car.
719. <i>Mangelia virginiana</i> , <i>Conrad.</i>	Va.

Fascioliariidæ.

720. <i>Fasciolaria alternata</i> , <i>Emmons.</i>	N. C.
721. <i>Fasciolaria gigantea</i> , <i>Keiner?</i>	S. Car.
722. <i>Fasciolaria nodulosa</i> , <i>Emmons.</i>	N. Car.
723. <i>Fasciolaria Tuomeyi</i> , <i>Holmes.</i>	S. Car.
724. <i>Fasciolaria</i> [?] <i>parvula</i> , <i>Lea.</i>	Va.
725. <i>Fasciolaria rhomboidea</i> , <i>H. D. & W. B. Rogers.</i>	Va.; N. & S. Car.
726. <i>Fasciolaria Sparrowi</i> , <i>Emmons.</i>	N. Car.
727. <i>Fasciolaria Woodii</i> , <i>Gabb.</i>	Tex.
728. <i>Fasciolaria</i> [<i>Terebraspira</i>] <i>acuta</i> , <i>Emmons.</i>	N. Car.
729. <i>Fasciolaria</i> [<i>Terebraspira</i>] <i>elegans</i> , <i>Emmons.</i>	N. C.
730. <i>Fasciolaria</i> (<i>Lyrosoma</i>) <i>sulcosa</i> , <i>Conrad.</i>	?
731. <i>Peristernia filicata</i> , <i>Conrad.</i>	Va.; S. Car.

Muricidæ.

732. <i>Busycon adversarium</i> , <i>Conrad.</i>	S. Car.
733. <i>Busycon carinatum</i> , <i>Conrad.</i>	Va.
734. <i>Busycon carica</i> , (<i>Gmelin</i>) <i>Bolten?</i>	S. Car.
735. <i>Busycon contrarium</i> , <i>Conrad.</i>	N. Car.

736. <i>Busycon coronatum</i> , <i>Conrad</i> .	Md.
737. <i>Busycon canaliferum</i> , <i>Conrad</i> .	N. & S. Car.
738. <i>Busycon excavatum</i> , <i>Conrad</i> .	N. Car.
739. <i>Busycon filosum</i> , <i>Conrad</i> .	Va.
740. <i>Busycon fusiforme</i> , <i>Conrad</i> .	Md.
741. <i>Busycon incile</i> , <i>Conrad</i> .	Va.
742. <i>Busycon maximum</i> , <i>Conrad</i> .	?
743. <i>Busycon</i> ? <i>oregonensis</i> , (<i>Conrad</i>) <i>Meek</i> .	Or.
744. <i>Busycon rugosum</i> , <i>Conrad</i> .	Md.
745. <i>Busycon tuberculatum</i> , <i>Conrad</i> .	?
746. <i>Busycon scalarispira</i> , <i>Conrad</i> .	N. Jer.
747. <i>Busycon striatum</i> , <i>Conrad</i> .	?
748. <i>Busycon tritonis</i> , <i>Conrad</i> .	Va.
749. <i>Fusus arctatus</i> , (<i>Conrad</i>) <i>Meek</i> .	Cal.
750. <i>Fusus barbarendis</i> , <i>Trask</i> .	Cal.
751. <i>Fusus</i> [?] <i>geniculus</i> , <i>Conrad</i> .	Or.
752. <i>Fusus</i> [?] <i>corpulentus</i> , <i>Conrad</i> .	Or.
753. <i>Fusus rugosus</i> , <i>Trask</i> .	
754. <i>Fusus</i> (<i>Scalarispira</i>) <i>strumosus</i> , <i>Conrad</i> .	Va.
755. <i>Tritonifusus migrans</i> , (<i>Conrad</i>) <i>Meek</i> .	Md.
756. <i>Neptunea deveixa</i> , <i>Conrad</i> .	Md.
757. <i>Neptunea exilis</i> , <i>Conrad</i> .	Va.; S. & N. Car.
758. <i>Neptunea equalis</i> , (<i>Emmons</i>) <i>Conrad</i> .	N. Car.
759. <i>Neptunea filosa</i> , <i>Conrad</i> .	?
760. <i>Neptunea lamellosa</i> , (<i>Emmons</i>) <i>Conrad</i> .	N. Car.
761. <i>Neptunea parilis</i> , <i>Conrad</i> .	Md.
762. <i>Neptunea rustica</i> , <i>Conrad</i> .	Md.
763. <i>Neptunea trossula</i> , <i>Conrad</i> .	Va.
764. <i>Trophon tetricus</i> , <i>Conrad</i> .	Va.
765. <i>Typhis acuticostata</i> , <i>Conrad</i> .	Md.
766. <i>Murex</i> [?] <i>fragilis</i> , <i>Trask</i> .	Cal.
767. <i>Murex globosus</i> , <i>Emmons</i> .	N. Car.
768. <i>Murex ponderosus</i> , <i>Gabb</i> .	Cal.
769. <i>Murex</i> (<i>Pterorytis</i>) <i>umbriferus</i> , <i>Conrad</i> .	N. Car.
770. <i>Murex perlaminosus</i> <i>Conrad</i> .	Cal.

CLASS CEPHALOPODA.

Order TETRABRANCHIATA

Nautilida.

771. ? <i>Aturia angustata</i> , (<i>Conrad</i>) <i>Meek</i> .	Or.
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SUBKINGDOM **ARTICULATA.**CLASS **CRUSTACEA.**

SUBCLASS ENTOMOSTRACA.

Order **CIRRIPEDIA.****Balanidæ.**

772. *Balanus proteus*, *Conrad.* Md. & Va.
 773. *Balanus estrellanus*, *Conrad.* Cal.

Order ? **LOPHYROPODA.****Cypridæ.**

774. *Cypris Leidyi*, *Evans & Shumard.* Dak.

SUBCLASS DECAPODA.

Order **MACRURA.****Callianassidæ.**

775. *Callianassa oregonensis*, *Danu.* Oreg.

NOTES AND EXPLANATIONS.

(MIOCENE LIST.)

- 1 and 2 — Are not true *Astræas*.
3 = *Columnaria? sexradiata*, LONDSALE, Quart. Journ. Geol. Soc. VI, 1845, 497.
6 = *Lithodendron lineata*, CONRAD, Trans. Geol. Soc. Pa. I, 1835, 340, xiii, 4.
43 = *Orbicula lugubris*, CONRAD, Mioc. Foss. 75, 43, 2.
44 = *Orbicula multilineata*, CONRAD, ib. fig. 3.
45 = *Terebratula nitens*, CONRAD, U. S. Expl. Exp. X, 726, 19, 1a, I see Mr. Carpenter, in his valuable report to the British Association on the Moll. West Coast N. A. (1863, 680), expresses the opinion that this is very probably identical with the recent *Waldheimia pulvinata*, Gould.¹ On examining the typical spe-

¹ The extensive and critical knowledge of the living Mollusks of the Western Coast of North America, possessed by this able conchologist, renders his remarks on the relations of Tertiary and existing species of that region unusually interesting to the palæontologist. It is to be regretted, however, that his comparisons were, in most cases, necessarily made with very imperfect figures of the fossil species; the type specimens not being accessible at the time he was in this country. Hence, his suggestions that so large a proportion of the Miocene shells of the Pacific slope are, probably, identical with living species should not be too hastily accepted. Particularly since the questions involved are of far greater importance than that of the mere-specific difference or identity of certain forms, for if wrongly decided, they may lead to very erroneous conclusions in regard to the age of these tertiary deposits; while they have a direct and important bearing on the discussions respecting the duration of specific types in time. Consequently, I have carefully compared the types of Mr. Conrad's Western Coast Tertiary species, with their living representatives, in all cases where authentic examples of each were at hand, and give the results of these comparisons under each of the species in these notes.

In most of these cases, it will be observed, I have arrived at the conclusion that the fossil shells are distinct species from the recent. This accords with the conclusions, in many cases, adopted by those who have, of late years, instituted careful comparison of the Miocene species formerly supposed to be identical with living forms.

cimens, however, from Astoria, I find that they show, under the microscope, no traces of the punctate structure characterizing the *Terebratulida*, although they exhibit, by transmitted light, very distinctly the usual fibrous texture. From this I infer that the species can neither be a *Terebratula*, nor a *Waldheimia*, but belongs to the genus *Rhynchonella*. None of the specimens are in a condition to show the nature of the foramen, nor any of the internal characters of the shell; but from all that can be determined, I am inclined to think it related to the recent *R. psittacea*, though it seems to be more finely striated, and has apparently a less prominent beak.

53—Since the foregoing list of Miocene shells was partly stereotyped, Mr. Conrad informs me that he now thinks his *Ostrea Hermannii* probably a cretaceous species.

65 — Mr. Carpenter refers this species with doubt, in his British Association Report, to the recent *Placunomia macroschisma*, Deshayes. The type specimen, however, is too imperfect to be satisfactorily compared with anything.

70 — Referred with doubt by Mr. Carpenter to the recent *H. giganteus* Gray. On comparison, I am inclined to think they may be identical, but the specimens of the fossil are by no means sufficient to decide such a question, particularly in a genus like this.

77 = *Janira affinis*, TROMBY and HOLMES, Plioc. Foss. S. Car. 26, 8, 56. I do not adopt the name *Janira*, because it was founded upon the typical forms of the older genus *Pecten*, Müller.

79 — This and most of the following species here retained under the name *Pecten* are distinct from that genus, as properly restricted by Lamarck, to such forms as *P. Jacobius*, and *P. maximus*, though it is not considered desirable to attempt to distribute them into proper groups with the material at hand.

84 = *Janira bella*, CONRAD, Pacific R. R. Rept. VI, 71, III, 16.

95 — This should probably have been printed *Amussium propatulum* in the list; it differs, however, from the typical species of that genus in the possession of large external radiating costæ, and a distinct byssal sinus.

I observe Mr. Carpenter suggests that if not identical with the recent *Amussium caurinum*, Gould, this shell is most closely related. It is undoubtedly related to that species, as many of our Miocene shells are to their living representatives; but on comparison, I find that they may be readily distinguished. In the first place the *A. caurinum* has from 20 to 22 costæ to each valve; while the fossil species has uniformly only about 16, which are also wider in proportion to the depressions between. Again, when the surface of the fossil shell is well preserved it shows, under a magnifier, a very peculiar and beautiful style of sculpture resembling somewhat the regularly

disposed asperities on the surface of a rasp, and entirely unlike any markings seen on the living species.

- 108 — Is referred by Mr. Carpenter to *Janira* (= typical *Pecten*, Müller), and is one of the forms upon which Mr. Conrad proposed to establish a new genus *Lyropecten*. It differs from the typical *Janiras*, in having both valves distinctly and very nearly equally convex, and the hinge provided with three strong diverging teeth on each side of the cartilage pit, but feebly represented by the slender ridges in the hinge of *Janira*.
- 111 = *Nucula impressa*, CONRAD, U. S. Expl. Expd. X, 722.
- 113 = *Leda Willamettensis*, SHUMARD, Trans. St. Louis Acad. Sci. I.
- 117 = *Nucula penita*, CONRAD, Am. Jour. Sci. V, (2), 433, Fig. 9.
- 119 = *Leda Oregona*, SHUMARD, Trans. St. Louis Acad. I.
- 127 = *Nucula divaricata*, CONRAD, Am. Jour. Sci. V, (2) 1848, 432: (not *N. divaricata*, Hinds, 1844). The name of this species should have been *Nucula (Acila) Conradi*, in the list, since it belongs to H. and A. Adams' group *Acila*.

Since the foregoing list was partly stereotyped, I see Mr. Carpenter refers this species to the recent *Nucula castrensis*, of Hinds, 1844. I have no specimens of the recent shell at hand for comparison, and have seen only imperfect examples of the fossil species. On comparing the latter and Mr. Conrad's figures in the Journal of Science, and the Report of the U. S. Exploring Expedition, with Dr. Hind's figure of *N. castrensis*, I find that the fossil shell, in addition to being much larger, with more prominent beaks, differs in having the imaginary line from which the surface striæ divaricate, extending directly from the beaks to the posterior basal margin; while in the figure of *N. castrensis*, it is represented as curving down so as to intersect the base near the middle. Again, the divaricating markings are proportionally larger, and less numerous on the figure of *N. castrensis*, while on the posterior dorsal region they are drawn as if extending back nearly parallel to the dorsal margin, instead of curving gracefully upwards so as to intersect the cardinal border, as in the fossil shell. I am aware these differences may be due to errors in Dr. Hind's figure, but when we bear in mind that the fossil shell is also so nearly like another found associated with *Baculites*, *Ammonites*, and other cretaceous types in California, that even Mr. Conrad, on comparing specimens, pronounced them identical, we may be also excused for hesitating to admit the identity of the Miocene and recent forms, until verified by the comparison of good examples of each, showing all the internal and external characters.

- 140 = *Pectenculus nitens*, CONRAD, U. S. Expl. Exp. X, 726, 18, 9, a, b. In Mr. Carpenter's first Report to the British Association on

West Coast Shells, 1856, 367, Mr. Woodward states that this species "resembles *Limopsis*."

In Mr. Carpenter's later Report of 1863, he remarks that it "resembles *Psephis tantilla* (= *Venus* (*Trigona*) *tantilla*, Gould). On examining the type specimens, I find the shell to be a true *Limopsis*, as surmised by Mr. Woodward, and very closely allied to a common species in the well-marked cretaceous rock of the upper Missouri country.

- 146 = *Arca canalis*, CONRAD, Pacific R. R. Report VI, 70.
 147 = *Arca congesta*, CONRAD, ib.
 148 = *Arca incile*, SAY, Jour. Acad. N. Sci. IV, 8.
 149 = *Arca microdonta*, CONRAD, Pacific R. R. Report V, 323.
 150 = *Anomalocardia trigintinaria*, CONRAD, Proceed. Acad. N. Sci. 1862, 289. This and the other species ranged in the list under the name *Anadara*, Gray, of course belong to *Anomalocardia*, Klein, 1753, which latter name I do not adopt from its ante-Linnean date, and its author's irregular system of nomenclature.
 151 = *Arca protracta*, H. D. and W. B. Rogers, Tr. Am. Phil. Soc. V, 332.
 152 = *Arca trilineata*, CONRAD, Pacific R. R. Report, V, 70.
 174 = *Avicula multangula*, H. C. LEA, Tr. Phila. Soc. IX, 1846, 245, 51, 31.
 Probably belongs to an undescribed genus.
 175 = *Perna montana*, CONRAD, Pacific R. R. Report VII, 195. The specimen for which this name was proposed is a very imperfect cast, probably belonging to some other genus.
 176 = *Perna terta*, SAY, Am. Jour. Sci. II, 38.
 179 = *Modiola contracta*, CONRAD, Pacific R. R. Rept. V, 325. If Adanson's ante-Linnean names are to be adopted (with his first species of each as the type), all the shells in the list under the name *Volsella* should be ranged under the name *Perna*, Ad. (1757.) If neither his nor *Scopoli's* names are to be adopted, then they would have to be included under *Modiolus*, Lamarck, 1779.
 180 = *Modiola spiniger*, H. C. LEA, Trans. Am. Phil. Soc. IX, 244, 35, 30.
 181 = *Modiola ducatellii*, CONRAD, Mioc. Foss. 53, 28, 2.
 182 = *Mytilus inflatus*, TOMEY and HOLMES, Plioc. Foss. S. Carr. 33, 14, 3.
 190 = *Cardita abbreviata*, CONRAD, Am. Jour. Sci. XLI. (2), 2, 17. This and all the other species in the list under the name *Venericardia* belong to *Actinobolus*, Klein, 1753. But, I do not adopt his names for reasons already stated. They also all belong to sections of *Venericardia*, Lamarck, 1801, and cannot be properly included in *Cardita*, Bruguiere, 1789, as restricted

by Lamarck in 1799 to such forms as *Chama calyculata*, Lin., subsequently (1824) called *Mytilicardia*, by Blainville.

191 = *Cardita radians*, CONRAD, Am. Jour. Sci. XLI, (2) 2, 16.

192 = *Cardita carinata*, EMMONS, Geol. N. Car. 302.

193 = *Cardita subtenta*, CONRAD, U. S. Expl. Exp. X, 726. Mr. Carpenter refers this to the recent *C. borealis*, Conrad. On comparison of the fossil form with typical eastern coast examples of the recent shell, I am led to regard them as distinct. The fossil species is more gibbous, and has uniformly from five to seven more costæ. In form, it is much nearer the western coast species or variety *ventricosa*, Gould, but it has smaller and more numerous ribs.

195 = *Cardita monilicosta*, GABB, Proceed. Acad. N. Sci. 1861, 371, is included with doubt in the Miocene list.

196 = *Cardita occidentalis*, CONRAD, ib. 1855.

224—Mr. Carpenter, misled by an imperfect figure, suggests that this species "has the aspect of a large *Lazaria*." It is, however, a true *Solenya*, with an extremely thin shell, and nearly obsolete postero-dorsal radiating costæ. *Lazaria*, Gray, 1853, is a synonym of *Carditamera*, Conrad, 1838.

230½ = *Lucina occidentalis*, CONRAD, U. S. Expl. Exp. X, 725, from the Astoria (Oregon) beds, was inadvertently omitted in its proper place between Nos. 230 and 221, in the list. It is a little remarkable that the specimen figured in the Xth Vol. U. S. Expl. Exp. pl. 18, fig. 8 and 8 a, as *Pectunculus patulus*, represents an internal cast of this species of *Lucina*.

I see Mr. Carpenter expresses the opinion that *Lucina occidentalis*, of CONRAD, is identical with the common recent *L. borealis* of authors; and that *Pectunculus patulus*, Conrad, founded as above stated on an internal cast of *Lucina occidentalis*, may be the recent *Pectunculus septentrionalis*, Middendorf. In regard to the identity of *Lucina occidentalis*, Conrad, with the recent *L. borealis*, I scarcely feel prepared to express an opinion, having but a single specimen of the fossil shell (the original type) in even a moderately good state of preservation for comparison. They are certainly much alike, but as species in this genus are often very similar, I have little doubt but on comparing a good series of each they will be found specifically distinct. The suggestion in relation to the supposed *Pectunculus patulus*, is obviously an error.

237 = *Cyclas permacra*, CONRAD, Pacific R. R. Rept. VII, 192.

247 = *Venus bisecta*, CONRAD, U. S. Expl. Exp. X, 724, 17, 10, 10a.

Although there are several good specimens of this species in the Astoria collections, none of them show the hinge. From markings on some of the internal casts, however, I am nearly convinced that its pallial line is simple, from which fact, together

- with the thinness and general aspect of the shell, I am led to refer it to the genus *Thyatira*, (Leach) Lamarck, 1818. If we adopt Turton's name, it should be written *Cryptodon bisectus*; or, following Sowerby, it would be *Axinus bisectus*.
- 252 = **Isocardia fraterna**, SAY, Jour. Acad. Nat. Sci. Phila. IV, 143: (= *I. rustica*, Conrad). I do not adopt *Bucardia*, Lister, 1678, on account of its ante-Linnæan date, nor *Isocardia*, Lamarck, 1799, because Polis' name *Glossus* 1795, has priority.
- 253 = **Isocardia Markoi**, CONRAD, Bul. Nat. Inst. 193, 2, 1.
- 260 = **Cardium modestum**, CONRAD. Mr. Carpenter suggests that this may be the young of the recent *Cardium biangulatum*. In this, however, he was misled by a very imperfect figure, for I find, on comparison, that the two shells are very distinct in form, and other surface characters.
- 276 — Mr. Gabb described this shell as a Miocene species (Proceed. Acad. Nat. Sci. Phila. 1861) under the name *Venus rhysonia*. It is now believed by him and Mr. Carpenter to be identical with the recent *Venus (Trigona) tutilia*, Gould.
- 282 = **Venus athleta**, CONRAD, Proceed. Acad. N. Sci. 1862, 586.
- 283 = **Venus alveata**, CONRAD, Mioc. Foss. 9, 5, 2.
- 284 = **Venus latilirata**, CONRAD, ib. 68, 38, 3.
- 287 = **Venus angustifrons**, CONRAD, U. S. Expl. Exp. X, 724, 17, 11.
- 288 = **Venus brevilineata**, CONRAD, ib. Fig. 13.
- 289 = **Meretrix decisa**, CONRAD, Pacific R. R. Rept. V, 323.
- 297 = **Cytherea oregonensis**, CONRAD, Am. J. Sci. V, (2), 432.
- 302 = **Meretrix tularana**, CONRAD, Pacific R. R. Rept. V. 323.
- 304 = **Meretrix uniomeris**, CONRAD, ib.
- 306 = **Cytherea vespertina**, CONRAD, Am. Jour. Sci. Vol. V, (2) 1848, 433.
- 358 — This is certainly not a *Donax*, but doubtless a *Solemya*, as suggested by Mr. Woodward (Brit. Asso. Rept. 1856, 366), and should have been printed *Solemya protexta* in the list. It is clearly distinct from its associate *S. ventricosa*, Conrad.
- 367 — Mr. Conrad originally described this and the other species of *Spisula* in the list, under the name *Maetra*, and subsequently referred them to *Hemimaetra*. He now agrees with me that Gray's name *Spisula* should be retained for this group, and authorized me to make the changes in his name.
- 410 = **Glycimeris estrellanus**, CONRAD, Pacific R. R. Rept. VII, 194. Mr. Carpenter (Brit. Assoc. Rept. 1863) refers this species with doubt, to the recent *Panopæa generosa*, Gould. The fossil is only known from a single imperfect cast, giving no idea of its internal characters. It is much smaller than the recent species alluded to, but resembles it in form, not more, however, than it resembles other fossil species, which from their geological position must be distinct, and would not be suspected to be identical with any living species. The *P. generosa* agrees more

- nearly in size and most of its other characters with the eastern Miocene *P. Americana*, but can be readily distinguished.
- 416 = *Solen curtus*, CONRAD, Am. J. Sci. V, (2) 433.
- 431 = *Bulla petrosa*, CONRAD, ib. 432, Fig. 11.
- 434 = *Tornatella elliptica*, TRASK, Proceed. Cal. Acad. Sci. 1856, 41.
- 455 — The name of this species should have been *Helonyx thallus*, (Conrad) Meek, in the list, since it belongs to the genus *Helonyx*, founded by Dr. Stimpson for the reception of the recent *Dentalium clavatum*, of Gould. This genus dates back to the Cretaceous epoch, and includes *Dentalium (Ditrupa?) pusillum*, Gabb, from the California Cretaceous.
- 467 = *Diodora crucibuliformis*, CONRAD, Proceed. Acad. N. Sci., Feb. 1855. I am authorized by Mr. Conrad to place this species in his name under *Cenoria*, Leach. The propriety of making the change, however, may be doubted, since it is questionable whether or not Leach's M. S. name was published previous to Gray's name *Diodora*.
- 498 = *Narica diegoana*, CONRAD, Pacific R. R. Rept. V, 326. Doubtful Miocene species.
- 521 = *Crepidula prærupta*, CONRAD, U. S. Expl. Exp., X, 727, 19, 9, 9a. Mr. Carpenter refers this to the recent *C. princeps*, Middendorf. Mr. Conrad's specimens agree in size and form, and apparently in surface markings with the recent shell, but they are unfortunately too imperfect, and there are not enough of them to make a satisfactory comparison in a genus like this.
- 548 = *Turbo glabra*, H. C. LEA. Tr. Am. Phil. Soc., IX, 267, 37, 87. (= *Vivipara glabra*, Conrad, Synop. Miocene Foss. Proceed. Acad. 1862, 567).
- 621 = *Natica inezana*, CONRAD, Pacif. R. R. Rept. VII, 195, 10, 5, 6. This should probably have been printed *Lunatia inezana*, in the list. I see Mr. Carpenter refers it with doubt to the recent *Lunatia Lewisii*, Gould. On comparison, however, I find they can be readily distinguished. The specimens of the fossil species are imperfect, but present, at least, one character, which is alone sufficient to separate the species. That is, a peculiar truncation and horizontal flattening of the upper part of the whorls, just below the suture; the flattened or slightly concave shoulder being bounded by a revolving angular ridge. Unfortunately, Mr. Conrad's figure represents an internal cast, which does not show this character. Good specimens would doubtless present other differences.
- 631 — If we go back to pre-Linnæan names, that is, to names proposed previous to the issue of Linnæus' 10th ed. Syst. Nat. 1758, the name of this species would have to be *Stomatia scopulosa*, or *Catinus scopulosus*, the former generic name having been pro-

posed for this group by Hill, 1752, and adopted by Browne, 1756, while the latter was used for it by Klein, 1753. As it is not the generally approved practice, however, to go behind Linnæus, the rule of priority will probably require us to write it *Sinum scopulosum*, since Bolten's name *Sinum* (1798) has priority over *Sigaretus*, Lamarck (1799).

635 = *Sycotypus ocoyanus*, CONRAD, Pacif. R. R. Rept. V, 329.

637 = *Pyrula modesta*, CONRAD, Am. Jour. Sci. V, (2) 1848, 433, 12.

657 = *Oliva ancillariformis*, H. C. Lea, Trans. Phila. Soc. IX (N. S.), 274, 37, 105.

743 = *Fusus oregonensis*, CONRAD, ib. fig. 13.

749 = *Colus arctatus*, CONRAD, Pacif. R. R. Rept. V, 322.

755 = *Fusus migrans*, CONRAD, Proceed. Acad. N. Sci. I, 309.

771 = *Nautilus angustatus*, CONRAD, U. S. Expl. Exp. X, 728. Mr.

Woodward places this (Brit. Ass. Rept. 1856, 567) with doubt as synonymous with the well known *Nautilus zizac* of Sowerby; and so far as can be determined from imperfect specimens, I am much inclined to agree with him. The name *Aturia*, or *Aganides*, however, will have to be used for the genus.