parabola, the theory of elliptic integrals becomes simply common trigonometry, or parabolic trigonometry with the theory of logarithms.

These views will suggest to us the reflection, how very small is the field of that vast region, the Integral Calculus, which has hitherto been cultivated or even explored! When we find that the highest and most abstruse of known functions, not only circular functions and logarithms, but also elliptic integrals of the three orders, are exhausterl, "used up," in representing the symmetrical intersections of surfaces of the second order, who shall exhibit and tabulate the integrals of those functions which represent the unsynimetrical sections of surfaces of the second order, or generally those curves of double curvature in which surfaces of the third and higher orders intersect? Considerations such as these but add fresh evidence to the truth, how small even in mathematics is the proportion which the known bears to the unknown!
Cheltenham, August 8, 1856.

In revising this memoir for publication among the Reports of the British Association, I have supplied several numerical examples to illustrate the theory. I have added some new theorems, such as the curious properties of the polygon of $n$ sides circumscribing the parabola, p. 95; the theorem which connects the corresponding points of the parabola and the equilateral hyperbola, p. 94; a new trigonometrical form for the roots of a cubic equation, p. 81 ; and the geometrical expressions for the $2 n$ roots of a trinomial equation, in the excepted case, by the help of parabolic trigonometry, p. 99. I have also made a few other additions, and several corrections.-J. B.

The Vicarage, Wandsworth, Nov. 10, 1856.

Report on the Marine Testaceous Mollusca of the North-east Atlantic and neighbouring Seas, and the physical conditions affecting their development. By Robert MacAndrew, F.R.S.

In the following Report, prepared in compliance with a wish expressed by the Committee of the Natural History Section of the British Association at the Glasgow Meeting last year, I have endeavoured to embody the results of personal research, obtained principally by means of the dredge, at various intervals during the past twelve years.

The field of my labours has extended from the Canary Islands to the North Cape (about 43 degrees of latitude), and with reference to the following Tables, it should be explained that when a species is stated to extend northwards to the latter, or southwards to the former of these limits, it is not to be inferred that it does not range further; and this it is more important to bear in mind, because a large proportion of the Mollusca inhabiting the coasts of Finmark are known to be widely distributed in the Arctic Seas, while a considerable number of the Canary species extend to, and in some cases attain their maximum of development in, the tropical region.

It is hardly necessary to add, that even within the district to which my observations have been confined, many species of mollusca are recorded to have been obtained which it has not been my good fortune to meet with or identify, and that of all such I have taken no note.
Report on Mollusca of the North-east Atlantic, \&c.


| Peripioma, Nenum. prætenuis, Pulteney .... | Britain to Nordland | 10 fathoms. | ZetlandandNorway | sand. | local. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Saxicava, F. de Bellevue. arctica, Lin. |  | low water to 160 faths. | Arctic seas an |  | frequent. |  |
|  |  |  | Zetland, 4 to 10 fathoms. |  |  |  |
| rugosa, Lin. | Britain, Asturias, Spain | low water to 20 faths. | South of England, low water. | limestone rock .. |  | abundant in Torbay. |
| Panopæa, Menard dela Groye Aldrovandi, Mont.......... | Portugal, Mediterranean | shallow water | Faro in Portugal .. |  | Iocal. |  |
| Poromya, Forbes. granulata, Nyst \& West... | Hebrides and Madeira | 20 to 40 fathoms |  |  |  |  |
| Korenii (Embla), Lovén... | Finmark | 40 to 80 fathoms. | Finmark | sand and gravel | unfrequent. |  |
| Neæra, Gray. cuspidata, Olivi $\qquad$ | Canary Islands to Hammerfest. | 12 to 80 fathoms | Firth of Clyde, 20 to 40 fathoms. | muddy sand |  | generally coated with mud when living. |
| costellata, Deshay | Canary Islands to Drontheim | 10 to 100 fathom | Mediterranean, 20 | sand and | local. |  |
| abbreviata, Deshayes...... | Loch Fyne .................... | 40 to 80 fathoms. | uncertain | mud | local.... | I have only obtained it in one locality. |
| obesa, Lovén | Finmark, Hammerfest | 20 to 40 fathoms | uncertain ............ | n1 | moderate. |  |
| Corbula, Bruguière. nucleus, Lam. |  | 6 to 30 fathoms |  |  |  |  |
|  | Canary Islands, Drontheim... | 6 to 30 fathoms | diterranean. |  | very abund | as though they were all young. |
| rosea, Brown ... Sphænia, Turton. |  | fathoms.............. |  |  |  | requent in Port Mahon. |
| Binghami, Turton | Mediterranean, North Spain, Britain. | 35 fathom | uncertai | sand | local \& | one specimen obtained in the Gulf of Tunis. |
| Mya, Lin. |  |  |  |  |  |  |
| truncata, Lin | Britain, Finmark............... | lowwater to 100 faths. | Britain, atlow water to 6 fathoms. |  | abundant | obtained by digging at low water, and by thedredgein roots of Laminaria. |
| arenaria, Lin. .............. | Britain, Finmark........ | low water |  | sand and gravel. | abundant. |  |
| Solen, Lin. siliqua, Lin.. | Britain, Mediter | low water and sub- | Scotland and |  | frequen |  |
|  |  | littoral. | of Ireland. |  |  |  |
| ensis, Lin. | Mediterranean, Nordlan | littoral and sublit- toral. | Britain |  | abundant. |  |
|  | Mediterranean, Britain | littoral and sublittoral. | Spain .... ......... |  |  |  |
| pellucidus, Pennant | Mediterranean to Nordland... | 5 to 100 fathoms | North Britain |  | frequent | largest in Zetland and Norway ; very small in Mediterranean. |




| Species. | Geographical range. | Vertical range. | Locality of principal development. | Ground. | Frequency. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Acephala (continued). <br> Mactra, Lin. <br> subtruncata, Da Costa ... <br> stultorum, Lin. | Britain to Canary Islands ... Britain to Canary Islands | shore to 30 fathoms. shallow water | Britain ? Mediterranean. | sand and mud... <br> sand and mud... | frequent. frequent ... | At Teneriffe only one valve from 35 fathoms, several varieties in Mediterranean. |
| helvacea, Chem. Petricola, Lam. | Portugal and Mediterranean. s | shallow water ......... | South of Europe... |  | ra | I have never obtained alive. |
| Petricola, Lam. <br> lithophaga, Retzius. | North of Spain, South of lit Portugal. | littoral ................... | Portugal ? .........l | limestone......... | frequent. |  |
| Venerupis, Lam. irus, Lin. | Sonth of England to Canaries li | littoral | Spain and Portugal | limestone......... | frequent. |  |
| Tapes, Muhlfeldt. <br> decussata, Lin. $\qquad$ | Cardigan Bay to Mediterranean. | littoral and sublittoral. | Spain and Portugal | sand and gravel. | abundant ... | Much esteemed, and sought as an esculent. |
| pullastra, Wood............ | Nordland to Mogador Islands | shore to 10 fatlioms. | Bantry Bay, Vigo. | sand and gravel. | abundant. |  |
| virginea, Gmel. ............. | Nordland to Gibraltar and 4 Mediterrancan. | 4 to 40 fathoms ...... | Zetland, Vigo ...... | sand and mud... | abundant. |  |
| anrea, Gmel. | Sonth of Scotland to Medi-1 terranean. | littoral and sublittoral | Vigo, Gibraltar ... | so | local. |  |
| nitens, Scacchi ............ | Mediterranean. | 10 fathoms | Sicily, Algiers | sa | rare. frequent. |  |
| geographica, Lin. ...... | Cadiz and Mediterranean ... | sublitto | Gibralt |  | abundant. |  |
| $\left.\begin{array}{l}\text { florida, Lam. ............. } \\ \text { Beudantii, Payr. ...... }\end{array}\right\}$ | Cadiz and Mediterranean ... | subittor |  |  | frequent. |  |
| Lucinopsis, Forbes. undata, Pennant | Britain to Mediterranean | 3 to 30 fathoms ...... | Britain............... | sand and mud... | moderate. |  |
| Artemis, Poli. exoleta, Lin. ...... | Nordland to Mediterranean | . shore to 20 fathoms | .Vigo.................. | sand | abundant | at Vigo dug up at low tide for food. |
| lincta, Pulteney | Nordland to Mediterranean. | . shore to 60 fathoms | Britain............... | sand | frequent ... | Mediterranean variety, more compressed. |
| Cytherea, Lam. chione, Lin. $\qquad$ | Carnarvon Bay to Canary Islands, Azores, and Madeira Islands. | sublittoral to $40 \mathrm{fa}-$ thoms. | Spain <br> Mediterranean | sand ............ | frequent .. | Canaries and Madeira, variety small. |
| venetiana, Lam............. | Mediterranean to Canaries... | sublittoral to 40 fa thoms. | Mediterranean...... | . mud............... | moderate. |  |



| Species. | Geographical range. | Vertical range. | Locality of principal development. | Ground. | Frequency. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Acephala (continued). |  |  |  |  |  |  |
| crebricostata, Forbes...... | Arctic Norway | 20 to 160 fathoms ... | Hammerf | mud | frequent | described as British on the faith |
| elliptica, Brown............ | Clyde to Finmark | 4 to 16 fathoms ...... | Nordland | Nullipore \& mud | frequeut | of the fossil specimens dredged |
| bipartita, Phil. | Gulf of Tunis, Pantellaria ... | 35 fathoms ............ | uncertain............ | sand | very rare. | in the Sound of Skye. |
| sp. ined...................... | Zembretta (Gulf of Tunis) ... | 35 fathoms | unknown | sand | very rare.. | small, sulcated. |
| Circe, Schumacher. minima, Mont. | West of Scotland to Canary Islands. | 8 to 50 fathoms | Mediterranean, Madeira. | sand | frequent. |  |
| Cyprina, Lam. <br> Islandica, Lin. $\qquad$ | Finmark to Scilly ............ | 5 to 80 fathoms | Scotland | sand and mud | frequent. |  |
| Galeomma, Turton. Turtoni, Sowerby | South of England to Medi- | littoral and sublittoral | Spain? | rock |  | in crevices of stones, and roots of |
|  | terranean. | (50 fathoms, dead). |  |  |  | Laminariæ. |
| Lepton, Turton. <br> squamosum, Mont. | Irish sea to Gibraltar | 8 to 12 fathoms, shore at Gibraltar. | uncertain | sand <br> sand | rare. |  |
| convexum, Alder <br> Montacnta, Turton. | Bantry Bay | 15 fathoms ... | unknow | san | very rare.... | detected by Mr. Hanley among some small shells dredged by me in the locality named. |
| substriata, Mont. .. | Drontheim to Mediterranean | 10 to 100 fathoms ... | Zetland, 10fathoms | sand and mud... | frequent | on species of Spatangus purpureus, and in Norway occasionally on another species of Ecbinoderm. |
| ferruginosa, Mont. | North of Scotland to Magador and Madeira. | 3 to 40 fathoms ...... | Murray Firth | sand and mud . | rare ......... | Naples, \&c., in Mediterranean. |
| bidentata, Mont. ... | Arctic Circle, Norway to Mogador. | shore to 50 fathoms | North Britain | sand and mud... | frequent. |  |
| Kelfia, Turton. suborbicularis, Mont. | Drontheim to Canary Islands | sublittoral to 50 fathoms. | Scotland | mud, \&c. ......... | moderate. |  |
| corbuloides, Phil. | Portugal to Mogador ......... | littoral | Gibraltar ? | stones | frequen | under stones, liviug. |
| complanata, Phil. | Gibraltar and Mogador ...... | shore |  |  | very rare ... | valves on the shore. |
| rubra, Mont. ..... | England to Canary Islands and Madeira. | littoral | England . | rocks | abundant... | rare in Mediterranean and Canaries. |
| Pythina, Hinds. <br> sp. $\qquad$ | Atlantic coasts of Spain and Portugal. | littoral ... | South of Portugal | stones ........... | local. |  |



| Species. | Geographical range. | Vertical range. | Locality of principal development. | Ground. | Frequency. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Acephala (continued). Cardium, Lin. <br> pygmæum, Dons............ |  |  |  |  |  |  |
|  | Britain to Mediterranean and Azores. <br> Britain to Finmark $\qquad$ | 2 to 10 fathoms 20 to 100 fathoms ... shore to 30 fathoms. | South of England, Vigo. <br> Drontheim $\qquad$ | mud$\qquad$ sand and mud | local <br> frequent | most common in weedy ground of estuaries, largestspecimensat Vigo, small in Mediterranean. |
|  |  |  |  |  |  |  |
| Norvegicum, Spengler | Britain to Canary lslands | shore to 30 fathoms .. | Drontheim ......... <br> South of England and Ireland. |  | frequent. | small in Mediterranean. |
| papillosum, Poli. | Vigo to Canaries ............... | 10 to 50 fathoms | Gibraltar ? ......... | sand and niud |  |  |
| punctatum, Brocc | Gibraltar, Canaries, Madeira | 20 to 30 fathoms | unknown | and and ma |  |  |
| minimum, Phil. | Gibraltar | 30 fathoms | unknow |  | very rare. |  |
| elegantulum, Möller | Hammerfes <br> Mageroe ls | 30 f | on |  |  |  |
| Chama, Lin. gryphoides, | Mediterranean to Canaries. | shore to 20 fathoms | uncertain | nd and mud | frequent. |  |
| Solemya, Lam. <br> Mediterranea, Lam. | Mediterranean to Canaries. | shore to 12 fathoms.. | Mediterranean...... | sand and mud ... | moderate. |  |
| Yoldia, Möller. pygmæa, Munster | Hebrides to Arctic Circle, Norway. | 20 to 120 fathoms | Aretic seas ?......... | sand and mud... | local. |  |
| lucida, Bland | Drontheim to North Cape . | 30 to 160 fathoms | Finmark ?.......... | and and mud... | frequent. |  |
| limatula, Say |  | 120 fathoms | unknown | and......... | very rare. |  |
| Leda, Schumacher. caudata, Donovan | Britain to Finmark | 10 to 160 fathoms | Scotland, Norway... | sand and mud | frequent. |  |
| pernula, Miller.. | Drontheim to North Cape ... | 35 to 160 fathoms | Nordland and Finmark. | sand and mud | frequent ... | dead specimens (fossil?) frequent in the Sound of Skye. |
| emarginata, Lam. | South-east of Portugal and Mediterranean. | 4 to 8 fathoms | Mediterranean...... | mud... | moderate. |  |
| striata, Lam. .............. | Mediterranean. | 35 to 40 fathoms | Gibraltar, Algiers. | ne sand | requent. |  |
| Nucula, Lam. nucleus, Lin. | Nordland to Mediterranean |  |  |  | abundant. |  |
| nucleus, Lin. | Nordland to Mediterranean and Mogador. | 6 to 80 fathoms | Britain | and and mud... | abundant. |  |
| nitida, Sow. radiata, Hanley | Britain to Mediterranean Britain to Mediterranean | 4 to 40 fathoms. | South of England... | and and mud |  |  |
| decussata, Sow. | West of Scotland to Mediter- |  | Malaga ? ......... |  | moderate. |  |
| tennis, Mont | ranean. <br> Scotland, Finmark | 40 to 150 fathoms |  |  | frequent. |  |
| corticata, Müller ? | Nordland and Finmark . | 100 to 150 fathoms.. | uncertain | and and mud. | very rare. |  |




| ниуuns, sisucyucuvray ...... | Hourch Argyteshite ............. | smure lo iv ratioms... | juan ............... | stones and Laml- |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| pusio, Pennant ............ | North Drontheim, Canaries, Azorcs, and Madeira. | shore to 90 fathoms... | Britain(IsleofMan), <br> 12 to 15 fathoms. | gravel and stones | frequent. |  |
| striatus, Müller ............. | Finmark to Mediterranean | 5 to 90 fathoms | Seotland, Norway... | stones, Laminaria, \&c. | frequent. |  |
| tigrinus, Mül | Finmark to Gibraltar | 10 to 100 fathoms ... | Seotland, Norway... |  | frequent. |  |
| Danicus, Chem. | Finmark to West of Scotland | 20 to 100 fathoms ... | uncertain | gravel and mud.. |  |  |
| similis, Laskey ............ | Finmark to Mediterranean and Madeira. | 10 to 60 fathoms ... | Hebrides? | sand, mud, and gravel. | local. |  |
| maximus, Lin. | Orkney to Canaries and Madeira. | 5 to 30 fathoms ...... | Britain | gravel | frequent . | not in the Eastern Mediterranean, where it is replaced by next |
| Jacobæus, Lin. | Mediterranean, from Balearic Islands eastward. | 12 to 15 fathoms | Mediterranean | gravel and sand.. | frequent. | pecies. |
| opercularis, Lin. | Nordland to Canary and Madeira. | 5 to 100 fathoms | Britain | san | frequent | only one small specimen in Canary Islands at 60 fathoms. |
| Islandicus, Müller .. | Norway .............. | 5 to 100 fathoms | Norway, 10 to 20 fathoms. | sand............... | frequent. |  |
| polymorphus, Bronn ...... | Lisbon,Cadiz,Mediterranean, and Madeira. | 6 to 40 fathoms ...... | Cadiz and Gibraltar | sand, mud, and gravel. | frequent. |  |
| hyalinus, Poli.. | Mediterranean, from Cartha. gena eastward. | 6 to 8 fathoms | Malta and Sicily ... | mud | frequent | not found at Gibraltar or Malaga. |
| sulcatus, Lam. | Malta, Algiers .... | 6 to 40 fathoms ...... | Mediterranean...... | sand................ | local. moderate. |  |
| testo Bivon |  | 10 |  |  | moderate |  |
| testa, Bivon ............... | Mediterranean Cadiz, Mediterranean, Teneriffe. $\qquad$ | shore to 50 fathoms (dead). | Malta, \&c. uneertaia... | sand <br> sand................ | moderate ... very rare. | var. of P. striatus ? |
| gibbus, Lin. ?................ | Mediterranean, Canaries, Madeira. | 15 to 50 fathoms. | Mediterranean, Madeira. | sand................ | rare. |  |
| Gronlandicus, Sow. ...... | Nordland and Finmark | 90 to 150 fathoms | Aretic Sea | sand............... | rare. |  |
| sp. ined. | Nordland, lat. $66^{\circ}$ | 70 fathoms ............ | uncertain | sand............... | very rare | one spccimen living. |
| sp. ined. ...................... | Nordland and Finmark | 90 to 150 fathoms ... | nnknown | sand............... | ra |  |
| sp. ined. ..................... | Nordland and Finmark ...... | 90 to 150 fathoms ... | unknown |  |  |  |
| corallinoides, $D^{\prime}$ Orb....... | Canary and Madeira Islands.. | 12 to 50 fathoms...... | nncert | sa | moderate. |  |
| Spondylus, Lin. <br> gædaropus, Lin. | Mediterranean, Canary Islands. | shore to 60 fathoms... | Mediterranean...... | rock and stones.. | frequent. |  |
| Anomia, Lin. ephippium, Lin. $\qquad$ | Finmark to Mediterranean and Madeira. | shore to 160 fathoms. | South of Ireland, North of Spain. | gravel, mud, and sand. | frequent. <br> frequent |  |
| patelliformis, Lin. ......... | Nordland to Mediterranean.. | 4 to 50 fathoms ...... | Britain | stones and sand. | frequent. |  |






| Species. | Geographical range. | Vertical range. | $\left\lvert\, \begin{array}{l\|} \text { Locality of prin- } \\ \text { cipal development. } \end{array}\right.$ | Ground. | Frequency. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gasteropoda (continued). Lepeta, Gray.. ancyloides, Forbes. |  |  |  |  |  | probably a stunted variety of fol- |
|  | West of Scotland Northern Norway | 30 to 90 fathoms | Nuncertain .......... | sand and shells | rare |  |
| Pilidium, Forbes. | Sout | 0 to 80 fathoms | Northern Norway |  | frequent. | North Cape. |
| Patella, Lin. |  |  |  |  |  |  |
| vulgata, Lin. | Nordland to Mediterranean, Azores, Mogador? | shore | Brita | rocks | abundant. |  |
| cxrulea, Lam. | Giluratar, Algiers, \&c. ...... | sho | Mediterranean | rocks | abundant. |  |
| athletica, Bean crenata, ${ }^{\prime}$ 'Orb. |  | shore shore | Canaries \& Madeira |  |  |  |
| guttata, $D^{\prime}$ Orb. | Canaries and Madeira |  | Canaries \& Madeira |  | frequent. |  |
| aspera, Lam. | Gibraltar, \&c. | shore | Mediterranean...... |  | frequent. |  |
| Lowei, D' ${ }_{\text {drb }}$ scutellaris, Lam. | Canaries aud Madeira |  | Canaries \& Madeira |  |  |  |
| Candei, ${ }^{\text {a }}$ ' Orb . | Canaries and Madeira |  | Canaries \& Madeira |  | frequent. |  |
| tenuis, Dillwynn | Madeira | shore | Madeira | rocks | requent. |  |
| Gussonii, Costa . | Cauarics, Madeira, and A zores | 12 to 20 | Canaries (Lance- rotte). | eed | frequent | not many specimens living, these upon a red fucus. |
| nigropunctata, | Algiers, \&c. | shore | Mediterranean | rocks | frequent. |  |
| Pipllucida, Lin. | North Cape to Mogador.. | shore to 12 fathoms | Britain and Norway | Laminaria | frequent. |  |
| Pileopsis, Ham Hamarica, Lin. | Nordland to Mediterrancan | 15 to 80 fathoms | Britain (South) | she | moderate | ern specimens are |
| Crepidula, Lam. |  |  |  |  |  |  |
| ungniformis, gibbosa, Def. | Carthagena, Algiers, \&c. Mediterraneau......... | shore | Mediterranean? | shells | moderate. |  |
| Calyptraa, Lam. |  | do to fathoms |  |  |  |  |
| Sinessis, Lin. | Milford Haven to Canary | hore to 10 fathoms | Spain | hells | bundant. |  |
| Emarginula, Lam. | Islands. |  |  |  |  |  |
| reticulatal , rosea, Bell..... | Nordland to Canary Islands. South of England and Vigo. | 6 to 20 fathoms | uncertain. | stones and shells |  |  |
| crassa, J. Sowerby | Carnarvon Bay to Drontheim | 10 to 40 fathoms. | Loch Fyne? | ston |  |  |
| elongata, Costa .......... | Mediterranean and Canary Islands. |  | Mediterranean ? | stones and shells | moderate. |  |
| pileolus, Michaud....... | Mediterranean | 35 to 50 fathoms... | Mediterranean. | shells and sand . | ocal. |  |



| Species. | Geographical range. | Vertical range. | Locality of principal development. | Ground. | Frequency. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gasteropoda (continued). Trochus, Lan. granulatus, Born. ......... | 1sle of Man to Canary and Madeira Islands. <br> Sonth of England and Ireland, Canaries, Madeira, and Azores. | 5 to 50 fathoms ..... shore to 15 fathoms . | uncertain <br> Gibraltar and Mediterranean, shore to 4 fathoms | sand ............... | moderate.. abundant. | a beautiful variety from decp water, Tencriffe. |
| Montagui, Gray | Britain to Mediterrancan .. | 7 to 60 fathoms ...... 5 to 100 fathoms ... | South of England and Ireland ? <br> West of Scotland | sand and mud sand and mud | moderate frequent. | living in 15 fathoms, Gibraltar; 35 fathoms, Gulf of Tunis ; 40 fa thoms, Malta. |
| millegranus, Phil. exiguus, Pulleney | Mediterrancan to Nordland <br> South of Eugland to Canary and Madeira Islands. | 5 to 100 fathoms ... <br> 4 to 50 fathoms ...... | West of Scotland . North of Spain ... | sand and mu sand | rrequent. frequent. | thoms, Malta. |
| crenulatus, Phil. | Cadiz to Canaries \& Madeira | shore to 20 fathoms 2 to 80 fathoms ..... |  | sand and mud... <br> sand, gravel, \&e. | frcquent. <br> abuudant |  |
| tumidus, Mont. . | North Cape to Vigo ......... | 2 to 80 fathoms ...... | Zetland and Nor- way. | sand, gravel, de. | abuudant | most frequent on Laminaria. |
| cinerarius | North Cape to Vigo | ore to 20 fathoms |  | sand and Laminaria. | a | many varieties, particularly on the north coast of Spain. |
| umbilicatus, $\lambda$ | West of Britain, North of Spain, Lisloon, Mogador. | shore ................. | Isle of Man, Anglesea. | rocks | bundan | a western species, not found in the Mediterranean. |
| magus, Lin. | Zetland to Canary and Madeira Islands. | low water to 25 faths. | uncerta | g | abundant ... | largest size in England, deeper colours to southward. |
| lineatus, $D a$ | South of England, North of Spain, Mogador? | shore | South-west of England. | rocks | undant ... | does not enter the Mediterranean |
| canaliculatus, Phil. | South of Portugal and Mediterrancan. | shore, 2 fathoms | Mediterrancan...... | gravel a | abundant. |  |
| fanulum, Gmel. | Mediterranean. | 6 to 8 fathoms. | Mediterranean | mud............... | moderate. |  |
| fragaroides, Lam. | Mediterrancan, Canarics...... | shore | Mediterral | rocks |  | sold in the streets at algiers. |
| indecorus, Phil | Canary and Salvage Islands.. |  |  | rocks |  |  |
| Saulcyi, W. © Richardi, Payr. | Lanccrotte ................... | shore shore | Mediterr | rocks | unda | much variety in size and colour. |
| Laugieri, Payr. ............ | Vigo to Mediterrancan and Azores. | 4 to 12 fathoms ...... | Faro and Gibraltar. | mud | bundant |  |
| Vieillotti, Pay | Gibraltar and Mediterranean. | shore | Mediterra | rocks |  |  |
| Jussieui, Payr. . | Malta and Sicily .............. | 8 to 12 fathoms | uncertain .. | sand ................. | frequeut |  |
| urticulatus, Lam. ......... | South of Portugal and Mcditerranean. | shore, 3 fathoms | Mediterranean ? ... | sand, mud, \&c.... | frequent ... | N.B. several species of Trochus from the coast of Asturias and |
| divaricatus, Lin............. | Gibraltar and Mediterranean. | shore | Mediterranean...... | rock and stones.. | frequent ... | 1 |


| sanguineus, Lin villicus, Phil. | Malta .......................... | 12 to 15 fathoms...... <br> 10 fathoms $\qquad$ | E. Mediterranean? uncertain. $\qquad$ | sand.. <br> sand.. | local local | identificd. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bertheloti (Monodonta) D'Orb. | Canary, Madeira Islands, and Azorcs. | shore .................. | Canary Islands ... | rocks | frequent . |  |
| Phasianella, Lam. pullus, Lin. | South and West of Britain, to Mogador, Madeira, and Azores. | 3 to 5 fathoms......... | Asturias ............ | weed ............ | abundunt. |  |
| intermedia, Scacchı | South of Portugal and Mediterranean. | 4 and 5 fathoms ...... | Mediterranean $\quad .$. | on Zostera marina. | local. |  |
| Vieuxii, Payr. Turbo, Lin. | Malta and Sicily | 5 to 12 fathoms | Eastern Mediterranean. | sand. | frequent. |  |
| rugosu | Asturias to Canaries and Azores. | 5 to 60 fathoms ...... | Gibraltar, 8 faths... | mud | abundant | rare in Asturias, small in Canaries. |
| sp. ined. .- | Mogador | shore | unknown ............ | rocks ............ | moderate | smallish, compressed. |
| Neritina, Lam. viridis, Lin....... | Mediterranean, Canaries, and | 4 to 20 fathoms ...... | uncertain. | sand............... | abundant | on Zostera, near Malaga. |
| Truncatella, Lowe. truncatula, Drap. | Madeira. <br> Malaga and Canaries | shore | M |  |  | on Zostera, near Malaga. |
| Skenea, Fleming. |  |  |  |  | local. |  |
| planorbis, | Britain, No | shore | liebrides | weed | abundant. |  |
| sp. ........................... | Orotava | 60 fathoms | unknown | sand............... | rare. |  |
| sp. ........................... | Norway | 15 to 40 fathoms...... | Norway ? ............ | mudand gravel... | frequent. |  |
| Rissoa, Frem. striatula, Mont. $\qquad$ |  |  |  |  |  |  |
| lactea, Michaud............ | Vigo and Mediterranean, Mogador. | shore, 4 fathoms ...... | Vigo and Cadiz ... | sand and mud ... | abundant. |  |
| Zetlandica, Mon | Zetland, Hebrides ........... | 20 to 70 fathoms...... | uncertain | sand | r'are. |  |
| crenulata, Mich. | South of England to Canaries, Madcira, and Azores. | shore to 50 fathoms.. | Spain ............... | sand................ | frequent. |  |
| Beanii, Manley ............ | West of Scotland and Wales. | 15 to 30 fathoms...... | uncertain | sand and mud... | local. |  |
| abyssicola, Forbes ......... | West of Scotland and South of Ireland. | 50 to 150 fathoms ... | Loch Fyne .......... | mud ............ | moderate. |  |
| calathus, Forbes \& Hanley | Drontheim? South and West of Britain and Ireland, Vigo, and Azores. | 8 to 50 fathoms ...... | uncertain............ | sand............... | moderate. |  |
| granulata, Plit. ............ | Cadiz, Mediterranean, and Azores. | shore (dead) ......... | Mediterranean? | sand.............. | abundant | not R. calathiscus of Mont |
| sculpta, Phil. | Hebrides, Scilly | 30 to 50 faths. (dead). | uncertain ........... | sand |  |  |
| punctura, Mont. | Scilly | 50 fathoms (dead) ... | South of England.. | sand | frequent. |  |






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| Montagui, Forbes <br> clausa, Sow. <br> aperta, Lovén ? <br> intricata, Don. <br> textilis, Reeve. <br> olla, M. de Serres <br> millepunctata, Lam. <br> Guilleminii, Payr. <br> macilenta, Phil. <br> porcellana, Webb \& Berth. <br> Sagrana, D'Orb. <br> sp. ined. <br> sp. ined. <br> Ovulum, Lam. <br> patulum, Pennant <br> spelta, Lin. <br> carneum, Lin. <br> ? acuminatum, Brug. <br> Erato, Risso. <br> lævis, Doñovan <br> Cyprea, Lin. <br> Europea, Mont. <br> pulex, Solander <br> candidula, Gaskoin spurca, Lin. <br> pyrum, Lin. <br> moneta, Lin. $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ | Scotland and Ireland to Finmark. <br> Nordland and Finmark <br> Pinuıark <br> Portugal, Cadiz, Mediterranean, and Azores ? <br> Cadiz and Gibraltar <br> Naples and Sicily Mediterranean and Canaries <br> South of Portugal and Mediterranean. <br> Gibraltar and Mediterranean, Mogador. <br> Canary and Madeira <br> South of Portngal to Canaries <br> Canaries $\qquad$ Canaries and Madeira. <br> South-west of Cornwall Mediterranean and Canary Islands. <br> Algiers. Britain, Mediterranean $\qquad$ $\qquad$ Zetland to Mediterranean ... <br> Vigten Islands in Norway to the Mediterranean. <br> Cadiz, Mediterranean, Canaries, Madeira, and Azores. <br> Canary and Madeira Islands.. <br> Eastern Mediterranean and Canary Islands. <br> Cadiz, Mediterranean, and Canaries. <br> Cadiz ? Canaries ? $\qquad$ $\qquad$ | 4 to 50 fathoms <br> shore to 10 fathoms 15 to 20 fathoms. shore to 5 fathoms <br> shore to 4 fathoms 8 to 12 fathoms shore to 40 fathoms... shore to 40 fathoms... <br> 30 to 40 fathoms. <br> shore to 60 fathoms... <br> shore to 20 fathoms... <br> 12 to 20 fathoms. shore to 20 fathoms... <br> 20 fathoms <br> 8 to 60 fathoms <br> 35 fathoms 30 to 40 fathoms <br> 12 to 50 fathoms <br> low water to 20 faths. <br> shore to 24 fathoms... <br> 12 to 24 fathoms. <br> low water and sub. littoral. <br> shore (dead) <br> shore (dead) $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ | 20 fathoms. Hebrides, 20 faths.. <br> Finmark uncertain Mediterranean...... <br> Cadiz? <br> Naples <br> Algiers ? <br> Gibraltar, 12 faths.. <br> Mediterranean. <br> Canaries, 12 to 16 fathoms. <br> Malaga, shore to 8 fathoms. <br> Canary Islands. uncertain <br> uncertain <br> Mediterranean, 8 to <br> 10 fathoms. <br> Mediterranean. <br> unknown <br> Mediterranean...... <br> Britain <br> Malta, \&c <br> uncertain <br> Canaries <br> uncertain <br> tropical $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ | sand, mud, and Nullipore. stones and rock.. sand sand and mud <br> sand and mud sand and mud sand and mud sand and mud <br> sand and mud <br> sand and mud <br> sand and mud <br> sand and mud sand and mud... <br> sand <br> sand <br> sand <br> sand <br> sand and mud <br> rocks and stones <br> sand <br> rocks <br> rocks $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ $\qquad$ | frequent. <br> frequent rare. frequent. <br> frequent. moderate. frequent ... frequent. <br> frequent ... <br> frequent. <br> frequent ... <br> frequent. moderate. <br> rare <br> rare <br> moderate. rare. <br> rare <br> abundant. <br> frequent ... <br> moderate. moderate. <br> rare. $\qquad$ $\qquad$ $\qquad$ $\qquad$ | on Algæ between tide marks, in company with Littorinæ, Tromsoe. <br> rare in Canary Islands. <br> possibly a variety of the last. <br> rare, except at Gibraltar and Malaga. <br> only once obtained living. on Gorgonia. <br> ranges by Scilly and West of Ireland to the Hebrides and Zetland. <br> I have not obtained it living. <br> dead on the shoreat the two localities named, not in the Mediterranean. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |

* I omit numerous species of Odostomia, all enumerated in the 'British Mollusca' of Forbes and Hanley, which I have obtained in the British Seas, but not identified in any foreign locality.

| Species. | Geographical range. | Vertical range. | Locality of prin- cipal development | Ground. | Frequency. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Canary Islands | shore (dead) | uncert | - |  | of large size. I have not ottainea |
|  | Canay | ( |  |  |  |  |
|  | Cadiz to Canary S Sland. | shore 15 to 6 fathoms. | cancertain | san | frequent. |  |
|  | mary and Madeira silinds...\| | 12 to 40 forathan | Canary | sand |  |  |
|  | Gin Glands. |  |  |  |  |  |
| ${ }_{\text {che }}$ glabella,, in. | Mogador, Canary Islands Nogador.anal | shore to 1 fathoms. | uncertain | sanul |  | a Moga |
|  |  |  |  |  |  |  |
| columbellaria, Scacchi ebeneus, Lam......... | to Canary 1slands. <br> Gibraltar and Mediterranean | 60 | terrancan. |  | frequer |  |
| Lam | Cadiz and Mediterranean to | fatho |  |  | reque |  |
| Sarignii, Payr | Algiers, Tunis, Malta | 12 to 45 fathoms | Eastern |  | erate. |  |
| fusca, | Canary, Madera, and Azore | Ore | Canaries, cc. | cks | frequent. |  |
| lutescens, Lam | East coast of Sicily | fathoms |  |  |  |  |
| zebrina, $D^{\prime}$ Orb | Mogador to Canary, Madeira | shore | Canaries |  | requent. |  |
| sp. ined. | Canaries and Maderira | 12 t |  |  |  |  |
|  |  | shore (dead) | unknown. | and |  | Br |
| onla, Lin. | Rock of Lisbon to Canary | to 15 fath | South of Portugal |  | requent |  |
| Lachesis, $\begin{gathered}\text { Risso. } \\ \text { minima, Mont }\end{gathered}$ | Cornalals. Co Mogador |  | Spain ... |  | requent | or Malagar drobablymore than one species under |
| Defrancia, Milet. | Madeira. |  |  |  |  | this uame. |
| linearis, Mont... | Norrland to co can | to 80 fathoms | Britain, spain. | sanil and mud | frequent. |  |
| purpurea, Mon | Scotland to Goibral tar, Ma-s |  | Britain ? | and and grave |  |  |
|  | del $\begin{aligned} & \text { deira, and Mogador. } \\ & \text { Mediterranean, Canariss, and }\end{aligned}$ |  | Mediterran | sand... |  |  |
| Pubort, Michand |  |  |  |  |  | in southern la |



| Species. | Geographical range. | Vertical range. | Locality of principal development. | Ground. | Frequency. | Remarks. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gasteropoda (continued). <br> Mangelia, Leach. <br> nivale, Lovén. | Nordland and Finmark Algiers, Tencriffe ..... | 30 to 150 fathoms 30 and 60 fathoms .. | Nordland and Fin- mark. necrtain ............ | sand and mud <br> sand $\qquad$ | rare. <br> very rare. |  |
| Conus, Lin. Mediterraneus, Brug. .. | South of Portugal to Canary Islands. | shore .......... | Mediterran | rocks and mud... | abundant. |  |
| papilionaceus, Columbella, Lam. rustica, Lin. ... $\qquad$ | South of Portugal, Canary, Madeira. and Azore Islds. | shore .......... |  | rock | abundant. |  |
| scripta, Lin. | Meditcrranean to Mogador... | shore to 20 fathows. | Gibraltar and Mediterrancan. | sand and mud ... | moderate. | many varieties. |
| minor, Scacchi <br> cribraria, Lin. | Mediterranean to Canary and Madeira Islands. Canary and Madeira Islands. | shore to 20 fathoms | Malaga, \&c........ | sand and mud ... | abundant | abundant on Zostera. |
| ${ }_{\text {Broderipii, }}$ Sow | Mogador, Canaries ........... | 4 fathoms | uncertai |  | frequent. |  |
| sp. ined. | Madeira | 18 to 24 fathoins | unkn | sand and mud |  |  |
| sp. ined. | Madeira | 18 to 24 fathoms | unknow | sand and m | rare. |  |
| sp. ined.... Doliun, Lam. galea, Lin. | East Meditcrranean and Ca- | 12 to 40 fatho |  |  |  | ot found |
| Cassidaria, Lam. echinophora, |  |  |  |  |  | ranean. |
| Cassis, Lam. |  |  |  |  |  |  |
|  | Mediterranean, Canaries, and Madeira. | shore to 10 fathoms. | . Medi |  | frequent. |  |
| saburon, Lam. | Atlantic shores of Spain and | d, 8 fathoms |  |  |  | Iving at Gijon, Asturias, rare. |
| Purpura, Lam. lapillus, Lin . | $\begin{aligned} & \text { Portugal. } \\ & \text { North Cape to Vigo } \end{aligned}$ | living. shore to 10 fathoms | . Britain |  |  |  |
| hæmastoma, Lin. | Asturias to Canary, Madeira and Azores Islands. |  | $\begin{aligned} & \text { Canaries and Ma- } \\ & \text { deira? } \end{aligned}$ | rocks | frequent | mmon on the Atlantic coasts, very rare in Mediterranean. |
| iveratoides, $W$ Well \& Berth. | Cauary Islands (Lancerotte). |  |  |  |  | ot ontained Mving. |
| $\begin{aligned} & \text { lingicula, Desh. } \\ & \text { auriculata, Menke } \end{aligned}$ | Vigo to Mediterranean, Ca . | 4 to 60 fathoms | uncertain |  | abundant. |  |




|  | Mediterranean to Azores .. | littoral <br> littoral | Mediterranean and Azores. Sicily and Malta ... | rocks <br> rocks | abundant. frequent. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Typhis, Montfort. | Malta | 40 | nncertain |  |  |  |
| Murex, Lin. |  |  | uncertain |  |  |  |
| erinaceus, Lin. | Britain, Mediterranean, Ca. naries and Madeira. | shore to 30 fathoms . | Vigo, shore | ad and rocks . | frequent. |  |
| trunculus, $L$ | Faro, Cadiz, and Mediterranean. | 4 to 8 fathoms | Mediterranea | saud, gravel, and mud. | abundant. |  |
| brandaris, Lin. | Faro, Mediterranean to Ca nary Islands. | 4 to 35 fathoms ...... | Malaga, Naples, \&c. | sand and mud... | frequent | large size in the Canary Islands. |
| corallinus, Seaceh | Vigo to Canaries, Madeira, and Azores. | 4 to 30 fathoms ...... | Vigo and Gibraltar. | sand | frequent. |  |
| Edwardsii, Payr | Asturias to Canary Islands and Madeira. | shore to 15 fathoms | Vigo and Mediterranean. | ocks | frequent. |  |
| cristatus, Brocchi | Mediterranean and Madcira | shore to | Malta and | vel an | frequent | st Mediterranean and |
| torosus, sp. ined. . . | Mogador ...................... | shore | Mogador | sand.............. | frequent. | Madeira. |
| sp. ined. .... | Madeira and Canary Islands. | shore | uncertain | rock and stones. | moderate.. | white. |
| Cephalopoda. <br> Spirula, Lam. <br> Peronii, Lam |  |  |  |  |  |  |
|  | Bay of Biscay to Azores and Canary Islands. | shore | Canary Islands |  | abundant. |  |

Additional Observations which could not be conveniently embodied in the foregoing Table.

Saxicava arctica, Lin.-Absent from no district within the range of my researches, but is much more frequent and larger in the northern than in the southern latitudes. The large solid variety, now living only in the Arctic seas, is found dead (fossil?) in deep water on the coasts of Scotland.
Gastrocha:na modiolina, Lam.; Gastrochæna cuneiformis, Lum.-Not having been able to detect any specific difference between the British specimens and those from the south of Europe, I treat then as identical. In the Canaries the specimens are smaller and inhabit greater depths than in other localities.
Ceratisolen legumen, Lin.-Is of much smaller size in southern localities; frequent at Malaga, but not eastward in the Mediterranean.
Donax anatinus, Lam.-I have dredged abundantly from 15 fathoms on the Dogger Bank, a remarkable exception from its ordinary habitat.
Donax venustus, Poli.-Is closely allied to Donax anatinus, of which it takes the place at Lisbon, Mogador and in the Mediterranean; in latter associated with D. trunculus.
Tellina solidula, Pulteney.-Is reported to be frequent in the Mediterranean, but I have never met with it south of Britain.
Mactra subtruncata, Da Costa. - There are two distinct varieties (? species), the one larger, solid and strongly rudely striated concentrically, is sublittoral, and most abundant on some of the Scottish shores; the other, small, smooth and thin, is more generally distributed, both as regards depth and climate.
Venus striatula, Don.-On the Mediterrauean coasts of Spain and to the southward, it is comparatively rare and confined to deep water; in the British seas it frequents all the zones of depth.
Astarte arctica, Gray.-A valve obtained from west of Zetland, 50 fathoms, by Prof. E. Forbes and myself, and recorded in the 'British Mollusca,' is in my possession, and I have every reason to believe it to be fossil. The reasons which induce me to believe that this species is not an actual inhabitant of the British seas are, that it is a shallow-water species, very gregarious, and not met with on the coast of Norway, south of the Arctic Circle.
Astarte compressa, Mont.-Subject to great variety in form, size, \&c. I believe $A$. Banksii to be only a variety of this species.
Kellia suborbicularis, Mont.-I incline to think that there are two species included under this name, if not, they are well cmarked varieties; the one smaller, more orbicular and more pellucid; the other much larger, more elliptical and, when fully grown, less transparent. It is the last which is found imbedded in very fine mud contained in dead bivalves.
Cardium edule, Lin.-Varies greatly in size, form, number of ribs, \&c. Near Tunis a narrow neck of land divides the bay from a shallow saltwater lake, at the head of which the city of Tunis is situated; on the one side of this neck of land (that facing the bay) all the specimens of Cardium edule were strong, triangular, and with few ribs, while on the side towards the lake, they were thinner, wider and nuch more numerously ribbed. The northern varieties attain the largest size.
Modiola Pctagnæ, Scacchi.-In shallow water in the harbour of Carthagena,
free. In the Canary Islands, at 12 to 15 fathoms, small and distorted, imbedded in Nullipore.
Crenella discors, Lin.-The largest British specimens I have obtained were on the north coast of the Isle of Man, 10 fathoms. At Southampton the pale green variety is frequent about low-water mark, adhering to the leaves of Zostera marina. Near Tromsoe in Finmark it is most abundant in beds covering the under surfaces of ledges of rock. Though reported to be found in the Mediterranean I have not met with it south of the British Channel, and believe it to have been confounded with C. costulata by Mediterranean authors.
Lithodomus caudigerus, Sow.-The authors of the 'British Mollusca' state that this is a South American species. It is frequent on the coast of Asturias, Bay of Biscay, also at Faro in the south of Portugal, at low water burrowed in limestone rocks, but not found in the south of Spain or Mediterranean, where its place is occupied by L.dactylus. . I have never obtained them together in any locality.
Pecten Jacobæus, Lin.-Notwithstanding that this species is named after the Saint of Compostella, I have not been able to detect it on the coasts of Galicia, or the north of Spain.
Pecten Danicus, Chem.-This species would appear to have been formerly much more abundant on the west coasts of Scotland than it is at present, as the number of dead valves bears no proportion to that of living specimens. It is met with throughout the Hebrides, but is most frequent in Loch Fyne, the normal form in mud at about 70 fathoms, the smaller and strongly striated variety upon hard ground at about 40 fathoms. It is extremely rare in Finmark, and I only met with small dead specimens north of Drontheim.
Pecten Islandicus, Müller.-Is doubtless extinct in the British seas, though dead valves are frequent in the Firth of Clyde, Hebrides, Zetland, Murray Frith and North Sea. In Norway, north of Drontheim, it is by far the most abundant species of Pecten.
Anomia ephippium, Lin.-Unlike most testaceous mollusca, which only require to be better known to be esteemed as delicacies for the table, the Anomia is not to be eaten with impunity. On one occasion, having sent my yacht round from a neighbouring port to that of Villaviciosa in Asturias, where I pur'posed joining her after an excursion inland, my crew, having been told that there were oysters in the harbour, determined to dredge on their own account in miy absence, and procured abundance of the Anomia in large agglomerated masses. Seeing by the complexion of the animals that they were not corimiton oysters, only one of the men would venture upon eating thent, and he suffered in consequence severe vomiting, \&e., with swelling of the abdomen, from which he did not entirely recover for two or three days.

The most beautiful yellow and purple varieties are found in the sunny seas of the Mediterranean.
Ostrea edulis, Lir.-Subject to much variation, which has occasioned the making of one or two questionable species, and rendered uncertain the limits of its distribution. The common English or Welsh oyster is, however, certainly abundant and of excellent quality at Redoindela, situated at the head of Vigo Bay ; and I have likewise dredged it off Cape Trafalgar in sand, and off Malaga in mud, but have not noticed it further eastward in the Mediterranean.
Chiton fascicularis, Lin.; Chiton discrepans, Brown.-I must acknowledge my inability to discriminate satisfactorily between these species.

Chiton cancellatus, Sav.-ls more nearly allied to C. Rissoi of the Mediterranean than to C. asellus, of which it has been supposed to be a variety.
Chiton fulvus, Wood.-This fine species differs as much in its habits as in appearance from its European congeners. It enjoys greater powers of locomotion than any other Chiton of my acquaintance, creeping freely in the sand between tide marks in Vigo Bay, where it is very abundant, and where several were found adhering to the chain cable every time it was raised from our anchorage abreast of the town of Vigo. It is, nevertheless, extremely local, not recorded to be obtained in any locality hut those I hare named, unless from Patagonia, whence there are specimens in the British Museum under another name, but in no way to be distinguished from the present species.
Chiton Cajetanus, Poli.-Inhabits the Mediterranean and Bay of Biscay, but has not been detected in any intermediate locality, nor on the sonth coasts of Spain.
Patella vulgata, Lin.-Becumes a local species on the northern coasts of Norway, and I did not meet with it in Finmark.
Fatella pellucida, Lin.-The distribution of this species is regulated by that of the Laminaria, on which it feeds. It is not unfrequent in the north of Spain; is absent from the south of Spain and Mediterranean, but unexpectedly appears again in the harbour of Mogador, where it is of small size. In high northern latitudes it is much paler in colour.
Patella Gussonii, Phil.-Among some hundreds of dead specimens I only took one or two living, and these were upon a deep-water red fucus.
Calyptræa Sinensis, Lin.-I have never obtained British specimens in less than 8 or 10 fathoms, whereas on the coasts of Spain it is generally found about the sea margin, and in shallow water.
Trochus crenulatus, Phil.-I believe to be specifically distinct from T. exiguus, is subject to great variation in colour; the grey variety is more common to the eastward.
Trochus millegranus, Phil.-Of this species there are two very distinct varieties, of which the smaller and more conical inhabits the Mediterranean and south coast of England and Wales, while the larger is common to the north-west coasts of Britain and Norway.
Rissoa abyssicola, Forbes.-A specimen received from Captain Spratt, dredged by him in 3.50 fathoms, about 40 miles from Malta.
Turritella communis, Risso.-The ordinary British form is wider in proportion and possesses fcwer volutions than that of the Mediterranean. A large variety with numerous volutions is found in Cork Harbour and in Bressa Sound, always in shallow water, while the ordinary variety inhabits all the zones of depth. I have taken white specimens of both the forms, consequently absence of colour is not always the consequence of great depth.
Conus Mediterraneus, Brug.-Is very frequent at Lancerotte, but does not extend westward to Teneriffe or to the Salvage or Madeira Islands.
Purpura lapillus, Lin.-Though generally littoral, inhabits the depth of 8 or 10 fathoms in certain localities, and in these cases undergoes considerable modification of form; from deep water and mud, it is large and fusiform, from 8 fathoms and rough ground the specimens are beautifully imbricated.
Ringicula auriculata, Menke.-At Vigo, the northern limit of its range, it attains the greatest dimensions and is very abundant, but not striated as in the Mediterranean and Madeira.
Nassa trifasciata, A. Adams.-Most abundant at Vigo, but smaller than in
the Mediterranean ; in latter district it undergoes considerable variation in colour.
Fusus gracilis, $D_{a}$ Costa.-Notwithstanding the opinion of Middendorf, adopted by Forbes and Hanley, that this is only a variety of F. Islandicus of Chemnitz, I am quite satisfied of the contrary after obtaining the true Fusus Islandicus in the neighbourhood of the North Cape. It was from about 100 fathoms, and measured $4 \frac{1}{2}$ inches in length, while adult specimens of Fusus gracilis from the same locality did not measure more than $2 \frac{1}{10}$ inches in length.
Spirula Peronii, Lam.-This shell, possessing a peculiar aptitude for floating on the surface of the sea when dead, is liable to be drifted to localities very remote from its native habitat. A chance specimen has occasionally been picked up on the shores of Britain; on the south coast of the Bay of Biscay it is still rare, is nore frequent at Gibraltar and Malaga, and abundant in the Canary Islands. I am not aware of its having been found in the eastern Mediterranean.

The following Table will be of assistance in a comparison of the Geographical range of the species and the number obtained in each of the districts.


| Species. |  |  |  |  |  |  |  |  |  |  | 景 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Acephala (continued). |  |  |  |  |  |  |  |  |  |  |  |
| Periploma, Schum. pretenuis, Putteney | * | * | * | * |  |  |  |  |  |  |  |
| Saxicava, F. de Bellevue. arctica, Lin.. $\qquad$ rugosa, Lin $\qquad$ | * | * | * | * | * | * | * | * | * | * |  |
| Panopæa, Menard de la Groye. <br> Aldrovandi, Menard |  |  | ..... |  |  | * | * |  |  |  |  |
| Poromya, Forbes. grauulata, Nyst and Weslendorp Korenii (Embla), Lovén. | * | ..... | * |  |  |  | $\cdots$ | ..... | ...... | * |  |
| Neæra, Gray. <br> cuspidata, Olivi <br> costellata, Desh.. <br> abbreviata, Desh. $\qquad$ <br> obesa, Lovén $\qquad$ | * $\ldots .$. *.. * | * | * | ...... | * | ...... | * | ...... | * | * |  |
| Corbula, Bruguière. uucleus, Lam. rosea, Brown $\qquad$ |  | * | * | * | * | * | * | * | * |  |  |
| Sphenia, Turton. <br> Binghami, Turton |  |  | * | * | * |  | * |  |  |  |  |
| Mya, Lin. truncata, Lin. $\qquad$ arenaria, Lin. $\qquad$ | * | * | * | * |  |  |  |  |  |  |  |
| Solen, Lin. <br> siliqua, Lin. |  |  | * | * | * | * | * |  |  |  |  |
| ensis, Lin. .. | * | * | * | * | * | * | * |  |  |  |  |
| margiuatus, Pulteney ...... |  |  |  | * | * | * | * |  |  |  |  |
| pellucidus, Pennant ......... | * | * | * | * | * | * | * |  |  |  |  |
| Ceratisolen, Forbes. legumen, Lin. |  |  |  | * | * | * | * | * |  |  |  |
| Solecurtus, Blainville. coarctatus, Gmel. $\qquad$ candidus, Renieri $\qquad$ strigilatus, Lin. $\qquad$ |  | ...... | * | * |  | * | * | ..... | * | * |  |
| Syndosmya, Rechuz. <br> alba, ${ }^{\circ}$ ood | * | * | * | * | * | * | * | * |  |  |  |
| prismatica, Mont. ............ | * | * | * | * | * | * | * |  |  |  |  |
| intermedia, Thompson ...... <br> Renieri, Brown | * | * | * |  |  |  |  | * |  |  |  |
| Renieri, Brown tenuis, Mont.. |  |  | ........ | * | * |  | * | * |  |  |  |
| Scrobicularia, Schumacher. piperata, Gmel. $\qquad$ Cottardi, Payr $\qquad$ |  |  | * | * | * | * | * |  |  |  |  |
| Donax, Lin. <br> anatinus, Lam. $\qquad$ |  | * | * | * | * |  |  |  |  |  |  |
| trunculus, Lin. venustus, Poli politus, Poli |  |  |  | * |  | $\begin{aligned} & * \\ & * \\ & * \end{aligned}$ | $\begin{aligned} & * \\ & * \\ & * \end{aligned}$ | * | *? |  |  |
| Ervilia, Turton. castanea, Mont. ................ nitens?, Mont. |  |  |  | * |  | * |  | $\cdots \cdots$ | * | * | * |


| Species. |  | $\begin{aligned} & \text { 邑 } \\ & \text { 馬 } \\ & \text { ㅇ․ } \\ & \end{aligned}$ |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Acephala (continued). |  |  |  |  |  |  |  |  |  |  |  |
| Mesodesma, Desh. donacilla, Desh. |  |  |  |  | * |  | * |  |  |  |  |
| Psammobia, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| vespertina, Chem. |  |  |  | * | * | * | * |  | * |  |  |
| telliuella, Lam. ... | * | * | * | * | * |  |  |  |  |  |  |
| costulata, Turton |  |  | * | * |  | ...... | * | ...... | * | * |  |
| Ferroensis, Chem. costata, Hanley | * | * | * | * | ...t. | * | * | ...... | * |  |  |
| Gastrana, Schumacher. fragilis, Lin. |  | * | ....6: | * | * | * | ..... | * |  |  |  |
| Tellina, Lin. |  |  | * |  |  |  | * |  |  |  |  |
| crassa, Pennant |  | ...... | * | * | * | * | * |  |  |  |  |
| balaustiua, Lin. ........t...... | , | ...... | * |  |  | ...... | * | .....6. | * | * |  |
| donacina, Lin. .............. |  | ...... | * | * | * | :.i... | * | ...... |  | * |  |
| pygmæa, Phil.. |  |  | * |  |  |  |  |  |  |  |  |
| incarnata, Lin. |  |  | * | * |  |  | * |  | * | * |  |
| tenuis, Da Costa |  |  | * | * | * | * | * | *? |  |  |  |
| fabula, Gronovius ............ | * | * | * | * | ...... |  | * | *? |  |  |  |
| solidula, Pulteney ............ | * | * | * | * |  |  |  |  |  |  |  |
| proxima, Brown. | * | * | * |  |  |  |  |  |  |  |  |
| distorta, Poli .................. |  | ...... | ...... | ...... |  | ....6 | * | ...... | * | * |  |
| serrata, Brocchi............:.: |  |  |  |  | * | * | * | :\%... | * |  |  |
| pulchella..... |  | ...:. | ..... | ... | ...... | ...... | * |  |  |  |  |
| Costæ, Phil. |  |  |  |  |  | * | * | * |  |  |  |
| planata, Lin. |  |  |  | ...... | ...... | * | * |  |  |  |  |
| punicea?, Lin. |  |  |  |  |  | ...... | * |  |  |  |  |
| sp. ined. |  |  |  |  |  | ....: | * |  |  |  |  |
| sp. iued. |  |  |  |  |  |  |  | * |  | * |  |
| Lutraria, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| elliptica, Lam. ............... |  |  | * | * | * | * | * |  |  |  |  |
| oblonga, Chem: ${ }^{\text {c............. }}$ |  |  |  | * | * | * | * |  |  |  |  |
| Mactra, Lin. |  |  |  |  |  |  |  |  |  |  |  |
| rugosa, Chem. ................ |  |  |  |  | * | * | * | * |  |  |  |
| solida, Lin. ...................... |  |  | * | * | * |  |  |  |  |  |  |
| elliptica, Brown ............ | * | * | * | * |  |  |  |  |  |  |  |
| subtruncata, Da Costa ...... |  |  | * | * | * |  |  |  |  |  |  |
| stultorum, Lin. ............... |  |  | * | * | * | * | * | * | * |  |  |
| helvacea, Chem................ |  |  |  |  |  | * | * |  |  |  |  |
| Petricola, Lam. <br> lithophaga, Retzius |  |  |  |  | * | * |  |  |  |  |  |
| Venerupis, Lam. irus, Lin. $\qquad$ |  |  |  | * | * | * | * |  | * | *. |  |
| Tapes, Muhlfeldt. |  |  |  |  |  |  |  |  |  |  |  |
| decussata, Lin. . $1 . . . . . . . . . . .$. |  |  |  | * | * | * | * |  |  |  |  |
| pullastra, Wood............... | * | * | * | * | * | * | * | * |  |  |  |
| virginea, Gmel. | * | * | * | * | * | * | * |  |  |  |  |
| aurea, Gmel. .. |  |  |  | * | * | * | * |  |  |  |  |
| nitens, Scacchi .. |  |  |  | .... | ....... | ...... | * |  |  |  |  |
| geographica, Lin. |  |  |  |  |  |  | * |  |  |  |  |
| florida, Lam. ................. |  |  |  |  |  |  | * |  |  |  |  |
| Beudantii, Payr. ............ |  |  |  |  |  |  | * |  |  |  |  |
| Lucinopsis, Forbes. undata, Pennant. |  |  | * | * | * |  | * |  |  |  |  |







| Species. |  | $\begin{aligned} & \text { 邑 } \\ & \text { 荡 } \\ & \text { an } \end{aligned}$ |  | British Channel. |  |  |  |  | Canary Islands. |  | ¢ ¢ N 4 |
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| Gasteropoda (continued). |  |  |  |  |  |  |  |  |  |  |  |
| Scaphander, Montfort. |  |  |  |  |  |  |  |  |  |  |  |
| lignarius, Lin., ............... |  | * | * | * | * |  | * |  |  |  |  |
| librarius, Lovén ................ | * | * |  |  |  |  |  |  |  |  |  |
| Amphisphyra, Lovén. hyalina, Turton. | * | * | * |  |  |  |  |  | * | * |  |
| Cylichna, Lovén. |  |  |  |  |  |  |  |  |  |  |  |
| cylindracea, Pen. | * | * | * | * | * | ... | * | * | * | * |  |
| truncata, Mont................ | *? | ..... | * | * | * | * | * | * | * |  |  |
| obtusa, Mont. ............... |  |  | * | * |  |  |  |  |  |  |  |
| mamillata, Phil................ |  |  | .... | * | ...... |  | * | .... | * |  |  |
| umbilicata, Mont. | * | * | * | * | * | ...... | * |  |  |  |  |
| fragilis, Jeffreys. alba, Lovén | * | * |  |  |  | ...... | * | . | * |  |  |
| Akera, O. F. Mülter. |  | * |  |  |  |  |  |  |  |  |  |
| bullata, Müll. |  |  | * | * | * | * |  |  |  |  |  |
| Hanleyi, A. Ad. |  |  | * |  |  |  |  |  |  |  |  |
| Bulla, Lin. |  |  |  |  |  |  |  |  |  |  |  |
| hydatis, Lin. |  |  |  | * | * | * | * |  |  |  |  |
| Cranchii, Leach |  |  | * | * |  | ...... | * | .... | * |  |  |
| ovulata, Phit. |  |  |  |  |  |  | * |  |  |  |  |
| sp. nov.? .. |  |  |  | ..... |  |  | ...... | ..... | * |  |  |
| sp. nov. ? |  |  |  |  |  | * |  |  |  |  |  |
| sp. nov. ? |  |  |  | ...... |  |  |  | ..... | * | * |  |
| striata, Brug. |  |  |  |  |  | * | * |  |  |  |  |
| ampulla ?, Lin. ............... |  |  |  |  |  |  |  | . | * | * |  |
| Tornatella, Lam. fasciata, Lam. | * | * | * | * | * | * | * | * |  |  |  |
| Auricula, Lam. <br> alba, Jeffreys |  |  | * | * | . $\cdot$ |  |  |  |  |  | * |
| denticulata, Mont.... |  |  | * | * | .... | ...... | ...... | ...... |  | ..... | * |
| Ferminii, Payr................ |  |  |  | ...... | ...... | ...... | ...... | . | * |  |  |
| Pedipes, Adanson. <br> sp. $\qquad$ |  |  |  |  |  |  |  |  | * | ...... | * |
| Chiton, Lin. |  |  |  |  |  |  |  | ...... |  | ...... |  |
| fascicularis, Lin. .......... $\}$ <br> discrepans, Brown |  | .... | * | * | * | * | * | * | * | * | * |
| Hauleyi, Bean ............... | * | * | * |  |  |  |  |  |  |  |  |
| ruber, Lin...................... | * | * | * |  |  |  |  |  |  |  |  |
| cinereus, Lin................... | * | * | * | * | * | ...... | ..... | * |  |  |  |
| albus, Lin. ..................... | * | * | * |  |  |  |  |  |  |  |  |
| asellus, Chem. ............... | * | * | * | * | * |  |  |  |  |  |  |
| cancellatus, Sow. ............. |  | * | * |  | * |  |  |  |  |  |  |
| lævis, Pen...................... | * | * | * | * | * | ..... | * |  |  |  |  |
| marmoreus, O. Fab. .......... <br> fulvus, Wood | * | * | * |  | * |  |  |  |  |  |  |
| fulvus, Wood .................. |  | ....... |  | …… | * |  | * |  |  |  |  |
| Rissoi, Payr. |  |  |  |  |  |  | * |  |  |  |  |
| siculus, Gray. |  |  |  |  |  |  | * |  |  |  |  |
| Poli, Phil. ..................... |  |  |  |  |  |  | * |  |  |  |  |
| Canariensis, Webb \& Berth. |  |  |  |  |  |  |  |  | * |  |  |
| alveolus, Sars sp. ined | * | * |  |  |  |  |  | * | * |  |  |


| Species. |  | $\begin{aligned} & \text { gi g } \\ & \text { d } \\ & \text { du } \\ & \text { a } \end{aligned}$ |  |  |  | 長 |  |  |  |  | 葡 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gasteropoda (continued). Dentalium, Zin. |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| tarentinum, Lam. ........... $\}$ | * | * | * | * | * | * | * | * |  |  |  |
| dentalis, Lin. .......... |  |  |  |  | * | * | * | * | * | * |  |
| rubescens, Desh. |  |  |  |  |  |  | * |  | * | * |  |
| sp. ined. ......................................... sp. ined. . |  |  |  |  | * |  |  |  |  |  |  |
| sp. ined. ......................Siphonaria, Poli. |  |  |  |  |  |  |  |  |  |  |  |
| Algesira, Quoy |  |  |  |  |  |  | * | * |  |  |  |
| Gadinia, Gray. |  |  |  |  |  |  |  |  |  |  |  |
| Garnoti, Payr. |  |  |  |  |  |  | * |  |  |  |  |
| Acmæa, Eschscholtz. |  |  |  |  |  |  |  |  |  |  |  |
| testudinalis, Mïller |  |  | * |  |  |  |  |  |  |  |  |
| virginea, Mïller.... | * | * | * | * | * | ..... | * | * |  |  |  |
| Lepeta, Gray,ancyloides, Forbes... |  |  |  |  |  |  |  |  |  |  |  |
| сæca, Müller ................. | * | * |  |  |  |  |  |  |  |  |  |
| Pilidium, Forbes. |  |  |  |  |  |  |  |  |  |  |  |
| Patella, Lin. |  |  |  |  |  |  |  |  |  |  |  |
| vulgata, Lin. crerulea, Lam. | * | * | * | * | * | * | * | *? |  |  | *? |
| athletica, Bean |  |  |  | * |  |  | *? |  |  |  |  |
| crenata, ${ }^{\text {' }}$ Orb. |  |  |  |  |  |  |  |  | * | * |  |
| guttata, D'Orb. |  |  |  |  |  |  |  |  | - | * |  |
| aspera, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| Lowei, D'Orb. |  |  |  |  |  |  |  | *? | * | * |  |
| scutellaris, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| tenuis, Dillwynn |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Gussonii, Costa .. |  |  |  |  |  |  |  |  | * | * | * |
| nigropunctata, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| Pileopsis, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| Hungarica, Lin. | * | * | * | * | * |  | * |  |  |  |  |
| Crepidula, Lam.unguiformis, Lam............c....................... |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| gibbosa, Defr. |  |  |  |  |  |  | * |  |  |  |  |
| Calyptrea, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| Emarginula, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| reticulata, Sow. | * | * | * | * | * | * | * |  | * | * |  |
| rosea, Bell ..... |  |  |  | * | * |  |  |  |  |  |  |
| crassa, J. Sow. |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Noachina, Lin. | * | * | * |  |  |  |  |  |  |  |  |
| Fissurella, Lam. reticulata, Don. rosea, Lam. |  |  | * | * | * | * | * | * | * | * |  |
| rosea, Lam. ... |  |  |  |  |  |  | * | * |  |  |  |


| Species. |  |  |  |  |  |  |  |  |  |  |  |
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| Gasteropoda (continued). |  |  |  |  |  |  |  |  |  |  |  |
| Fissurella, Lam. gibba, Phil. |  |  |  |  | * | * | * | . | * |  |  |
| Ianthina, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| communis, Lam. |  |  |  |  | ... |  |  |  | * | * | * |
| prolongata, Blainv. |  |  |  |  |  |  | * |  | .... | * |  |
| exigua, Lam. .......... |  |  |  |  |  |  | ..... |  | * | * | * |
| sp. ? .......................... |  |  |  | ...... | * |  |  |  |  |  |  |
| Scissurella, D'Orb. crispata, Flem. | * | * | * |  |  |  |  |  |  |  |  |
| Bertheloti, D'Orb |  |  |  |  |  |  |  |  | * |  |  |
| angulata, Lovén .. | * |  |  |  |  |  |  |  |  |  |  |
| Haliotis, Lin. |  |  |  |  |  |  |  |  |  |  |  |
| tuberculata, Lin. |  |  |  | * | * | * | * | * | *? | *? | *? |
| lamellosa, Lam. ............... |  |  |  |  |  |  | * |  |  |  |  |
| sp. ? .......................... |  |  |  |  |  |  | ...... | ...... | * |  |  |
| Adeorbis, Searles Wood. subcarinatus, Mont. |  |  |  | * | * |  |  | * |  |  |  |
| Margarita, Leach. |  |  |  |  |  |  |  |  |  |  |  |
| helicina, O. Fab. ............ | * | * | * |  |  |  |  |  |  |  |  |
| undulata, Sow. ............... | * | * | * |  |  |  |  |  |  |  |  |
| alabastrum, Beck ............ | * | * | * |  |  |  |  |  |  |  |  |
| cinerea, Couthouy ............ | * | * |  |  |  |  |  |  |  |  |  |
| Trochus, Lin. |  |  |  |  |  |  |  |  |  |  |  |
| zizyphinus, Lin. |  |  | * | * | * | * | * | *? | * | * | * |
| conulus, Lin. |  |  |  |  |  |  | * | ..... | * | * |  |
| granulatus, Born. |  |  |  | * | ...... | . | * | ... | * | * |  |
| striatus, Lin. .................. |  |  | .... | * | * | * | * | ..... | * | * | * |
| Montagui, Gray ............ |  |  | * | * | * | * | * | , |  |  |  |
| millegranus, Phil. ............ | * | * | * | * |  |  | * |  |  |  |  |
| exiguus, Pulteney ............ |  |  |  | * | * | * | * | ... | * | * |  |
| crenulatus, Phil. ............ |  |  |  |  |  |  | * | * | * | * |  |
| tumidus, Mont. ............... | * | * | * | * | * |  |  |  |  |  |  |
| cinerarius, Lin. ............... | * | * | * | * | * |  |  |  |  |  |  |
| umbilicatus, Mont. ......... |  |  | * | * | * | * | ... | * |  |  |  |
| magus, Lin..................... |  |  | * | * | * | . $\cdot \cdot$ | * | ...... | * | * |  |
| lineatus, Costa ............... |  |  |  | * | * |  |  | * |  |  |  |
| canaliculatus, Phil. ......... |  |  |  |  | ..... | * | * |  |  |  |  |
| fanulum, Gmel. |  |  |  |  |  | .. | * |  |  |  |  |
| fragaroides, Lam. ............ |  |  |  |  |  |  | * |  | * |  |  |
| indecorus, Phil................ |  |  |  |  |  |  | ...... |  | * |  |  |
| Saulcyi, Webb \& Berth. ... |  |  |  |  |  |  |  |  | * |  |  |
| Richardi, Payr. ............ |  |  |  |  | ... | .... | * |  |  |  |  |
| Laugieri, Payr. ............... |  |  |  |  | * | * | * | ..... |  |  | * |
| sp. ......... |  |  |  |  | *** |  |  |  |  |  |  |
| Vieillotti, Payr................ |  |  |  |  |  |  | * |  |  |  |  |
| Jussieui, Payr. ............... |  |  |  |  |  | ..... | * |  |  |  |  |
| articulatus, Lam. ............ |  |  |  |  |  | * | * |  |  |  |  |
| divaricatus, Lin. ............ |  |  |  |  |  |  | * |  |  |  |  |
| dubius?, Phil. . .............. |  |  |  |  |  |  | * |  |  |  |  |
| sanguineus, Lin. ............ |  |  |  |  |  | ..... | * |  |  |  |  |
| villicus, Phil......... |  |  |  |  |  |  | * |  |  |  |  |
| Bertheloti (Monodonta), D'Orb. |  |  |  |  |  |  | ...... | ...... | * | * | * |



| Species． |  | $\begin{aligned} & \text { 品 } \\ & \text { 品 } \\ & \text { B } \end{aligned}$ |  |  |  | 皆 |  |  |  |  | 易 |
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| Gasteropoda（continued）． |  |  |  |  |  |  |  |  |  |  |  |
| Lacuna，Turton． <br> labiosa，Lovén $\qquad$ <br> crassior，Mont． $\qquad$ | ＊ | ＊ | ＊ |  |  |  |  |  |  |  |  |
| luteum，Lam．．． |  |  |  |  | ＊ |  |  |  |  |  |  |
| stramineum，Gmel．．．．．．．．． |  |  |  |  | ＊ |  | ＊ |  | ＊ | ＊ |  |
| pseudoperspectivum，Brocc． |  |  |  |  |  |  | ＊ |  |  |  |  |
| Bifrontia，Desh． <br> zanclæa，Phil． |  |  |  |  |  |  |  |  |  | ＊ |  |
| Fossarus，Philippi． <br> Adansoni，Phil． $\qquad$ |  |  |  |  |  |  |  | ＊ | ＊ | ＊ | ＊ |
| Littorina，Fér． neritoides，Lin． $\qquad$ |  |  | ＊ | ＊ | ＊ | ＊ | ＊ | ＊ | ＊ | ＊ |  |
| littorea，Lin．．．．．．．．．．．．．．．．．． | ＊ | ＊ | ＊ | ＊ | ＊ | ＊ |  |  |  |  |  |
| littoralis，Lin．．．．．．．．．．．．．．．．．．． | ＊ | ＊ | ＊ | ＊ | ＊ | ＊ | ＊ |  |  |  |  |
| rudis，Don．．．．．．．．．．．．．．．．．．．．．． | ＊ | ＊ | ＊ | ＊ | ＊ |  |  |  |  |  |  |
| tenebrosa，Mont．．．．．．．．．．．．． | ＊ | ＊ | ＊ | ＊ | ＊ |  |  |  |  |  |  |
| saxatilis，Johnslon．．．．．．．．．．．． | ＊ | ＊ | ＊ | ＊ | ＊ |  |  |  |  |  |  |
| patula，Jeffreys ．．．．．．．．．．．．．．． | ＊ | ＊ | ＊ | ＊ | ＊ |  |  |  |  |  |  |
| Syriaca，Phil．．．．．．．．．．．．．．．．．．． |  |  |  |  | ＊ |  | ＊ |  |  |  |  |
| striata．．．．．．．．．．．．．．．．．．．．．．．．．．． |  |  |  |  |  |  |  |  | ＊ | ＊ | ＊ |
| Scalaria，Lam． |  |  |  |  |  |  |  |  |  |  |  |
| Turtonis，Turton |  | ， | ＊ | ＊ | ＊ | ．．．．．．． | ＊ |  |  | ＊ |  |
| communis，Lam．．．．．．．．．．．．． |  |  |  | ＊ | ＊ |  | ＊ |  |  |  |  |
| clathratula，Mont ．．．．．．．．．．．． |  |  |  | ＊ | ＊ | ＊ | ＊ | ＊ | ＊ |  | ＊ |
| Groenlandica，Chem．．．．．．．．．． | ＊ | ＊ | ＊？ |  |  |  |  |  |  |  |  |
| Lovéni，A．Ad．．．．．．．．．．．．．．．．． | ＊ | ＊ |  |  |  |  |  |  |  |  |  |
| Trevelliana，Leach ．．．．．．．．．．．． |  |  | ＊ | ＊ |  |  |  |  |  |  |  |
| crenata，Lin．．．．．．．．．．．．．．．．．．． |  |  |  |  |  |  | ＊ | ＊ | ＊ |  |  |
| pseudoscalaris，Brocchi．．．．．． |  |  | ．．．．．． | ．．．．．． |  |  | ＊ | ＊ | ＊ |  |  |
| cochlea，Sow．Jun． |  |  |  |  |  |  |  |  | ＊ | ＊ |  |
| Webbii，D＇Orb．．．．．．．．．． |  |  |  |  |  |  |  |  | ＊ |  |  |
| Macandrei，Forbes，MSS．．．．．．． |  |  |  |  |  |  |  |  | ＊ |  |  |
| sp．ined．．．．． |  |  |  |  |  |  | ＊ |  |  |  |  |
| sp．ined． |  |  |  |  |  |  |  |  | ＊＊＊＊ |  |  |
| sp．ined．．．．．．．．．．．．．．．．．．．．．．．．． |  |  | ．．．．．． |  |  |  |  |  |  | ＊＊ |  |
| Vermetus，Adanson． gigas，Bivon |  |  |  |  |  |  |  |  |  |  |  |
| glomeratus，Lin．．．．．．．．．．．．．． |  |  |  |  |  |  | ＊ |  |  |  |  |
| corneus，Forbes ．．．．．．．．．．．．．．．．． |  |  |  |  |  | － | ＊ |  |  |  |  |
| Cæcum，Fleming． |  |  |  |  |  |  |  |  |  |  |  |
| trachea，Mont．．．．．．．．．．．．．．．． |  |  | － | ＊ | ＊ | ．．．．．． | ＊ |  |  |  |  |
| glabrum，Mont．．．．．．．．．．．．．．． |  |  |  | ＊ | ．．．．． |  | ＊ |  |  |  |  |
| elegantissimum，Carpenter．．． |  |  |  | ．．．．．． | ．．．．．． |  | ．．．．．． |  | ＊ |  |  |
| Searles－Woodii，Carpenter．．． | ． |  |  |  | ．．．．．． |  |  |  | ＊ |  |  |
| vitreum，Carpenter ．．．．．．．．． |  |  |  |  | ．．．．．＊ |  |  |  | ＊ |  |  |
| Aclis，Loven． ascaris，Turton |  |  | ＊ | ＊ | ＊ |  |  |  |  |  |  |
| supranitida，Searles Wood．．． |  |  |  | ＊ | ＊ | ．．．．．． | ＊ |  |  |  |  |
| sp．ined．．．．．．．．．．．．．．．．．．．．．．．．． |  |  |  |  |  |  |  | ．．．．．． | ＊ |  |  |
| ？Genus uncertain． |  |  |  |  |  |  |  |  |  |  |  |
| sp．ined．．．．．．．．．．．．．．．．．．．．．．．．．．．． |  |  |  |  |  |  | ＊ |  |  |  |  |


| Species. |  |  | 覀 |  |  |  |  |  | Canary Islauds. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gasteropoda (continued). |  |  |  |  |  |  |  |  |  |  |  |
| Turritella, Lam. communis, Risso triplicata, Brocchi $\qquad$ | * | * | * | * | * | * | * | * | * |  |  |
| Mesalia, Gray. |  |  |  |  |  |  |  |  | * |  |  |
| brevialis, Lam. striata, $A$, $A d$ |  | . |  |  |  | * | * | * |  |  |  |
| Aporrhais, Aldrovandus. |  |  |  |  |  |  | * |  |  | * |  |
| pes-pelecani, Lin. ............. pes-carbonis, Brongniart | * | * | * | * | * | * | * |  |  |  |  |
| Triforis, Deshayes. adversa, Mont. | * |  | * | * |  |  |  |  |  |  | * |
| perversa, Brug. |  |  |  |  | * | * | * | * | * | * |  |
| Cerithiopsis, Forbes. <br> tubercularis, Mont. | * | * | * | * |  |  | * |  | * ? |  |  |
| Cerithium, Brug. reticulatum, Costa |  | * | * | * | * | * | * | * | * | * | * |
| metula, Lovén | * | * | * |  |  |  |  |  |  |  |  |
| lacteum, Phil. |  |  |  |  |  |  | * |  |  |  |  |
| angustinum, Forbes |  |  |  |  |  |  | * |  | * | * |  |
| vulgatum, Brug. |  |  |  |  |  | * | * |  | * |  |  |
| fuscatum, Costa |  |  |  |  |  |  | * |  | * |  |  |
| Stylina, Flem. |  |  |  |  |  |  |  |  |  |  |  |
| sp. .............................. |  |  |  |  |  |  |  |  | **? |  |  |
| Eulima, Risso. <br> polita, Lin. |  |  |  |  |  |  |  |  |  |  |  |
| distorta, Desh | * | * | * | * | * | ..... | * |  | * |  |  |
| sululata, Donoven |  |  | ...... | * | * | * | * |  | * | * | * |
| bilineata, Alder | * | * | * |  |  |  |  |  |  | * |  |
| nitida, Lam. |  |  |  |  |  |  | * |  | * | * |  |
| sp. ined. |  |  |  |  |  |  |  |  | * | * | * |
| Chemuitzia, D'Orb. |  |  |  |  |  |  |  |  |  |  |  |
| elegantissima, Mont. |  |  |  | * | * | * | * | * | * |  | * |
| rufa, Phil. ... |  |  |  |  |  | * | * | ... | * | * |  |
| formosa, Jeff... |  |  |  | * | * |  |  |  |  |  |  |
| fenestrata, Forbes \& Jeff. ... |  |  |  | * | * |  |  |  |  |  |  |
| fulvocincta, Thompson |  |  | * | * | * | * |  |  |  |  |  |
| scalaris, Phil...... |  |  |  | * | * | ...... | * |  |  |  |  |
| rufescens, Forbes |  | * | * |  |  |  |  |  |  |  |  |
| indistincta, Mont. |  | ...... | * | * | * | ...... | * | ...... | * |  |  |
| sp, ined. ...... <br> sp. ined. $\qquad$ | * |  |  |  |  |  | *** |  |  |  |  |
| Eulimella, Forbes. |  |  |  |  |  |  | *** |  |  |  |  |
| acicula, Phil. ... |  |  | * | * |  |  | * |  |  |  |  |
| afinis, Phil..... | * | * | * |  |  |  |  |  |  |  |  |
| Scillæ, Phil.................... |  | * | * |  |  |  | * | .... | * | * |  |
| conoidea, Brocchi |  |  | * | * | * | * | * | * | * |  |  |
| acuta, Jeff. . |  |  |  | * |  |  | * |  | * |  |  |
| spiralis, Mont... |  |  | * | * |  |  | * |  |  |  |  |
| interstincta, Mont. |  |  | * | * |  |  | * |  | * | * |  |
| conspicua, Alder ............. |  |  |  |  |  | * |  |  |  |  |  |
| plicata, Mont. ............... | * | * | * | * |  |  |  |  | *? | * |  |





| Species. |  |  |  |  |  |  |  |  |  | $\begin{aligned} & \text { 品 } \\ & \text { 覂 } \\ & \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gasteropoda (continned). Fusus, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| Berniciensis, King |  |  |  |  |  |  |  |  |  |  |  |
| antiquus, Lam. .............. | * | * | * | * |  |  |  |  |  |  |  |
| Norvegicus, Chem. contrarius, Lam. | * |  | * |  | * |  |  |  |  |  |  |
| Syracusanus, Lin. ............. |  |  |  |  |  |  | * |  |  |  |  |
| corneus, Lin. . |  |  |  |  |  |  | * |  |  |  |  |
| pulchellus, Phil. |  |  |  |  |  |  | * |  | * |  |  |
| rostratus, Olivi |  |  |  |  |  |  | * |  | * |  |  |
| craticulatus, Phil. |  |  |  |  |  |  | * |  |  |  |  |
| moroccanus ...... |  |  |  |  |  |  |  |  | * |  |  |
| Trophon, De Montfort. |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| muricatus, Mont. ........... |  |  | * | * | * |  |  |  |  |  |  |
| Barvicensis, Johnston ...... | * | * | * |  |  |  |  |  |  |  |  |
| Gunneri, Lovén ................ craticulatus, Fab. | $\begin{aligned} & * \\ & * \end{aligned}$ | * |  |  |  |  |  |  |  |  |  |
| Trichotropis, Brod. borealis, Sow. |  | * | * |  |  |  |  |  |  |  |  |
| Cancellaria, Lam.cancellata, Lam. ......................................................* |  |  |  |  |  |  |  |  |  |  |  |
| assimilis, Sow. |  |  |  |  |  |  | * |  |  |  |  |
| sp. ined. ...................... |  |  |  |  |  |  | * |  | * | * |  |
| sp. ined...................... |  |  |  |  |  |  |  |  | * | * |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| corrugatus, Lam. ............ |  |  |  |  | * | * | * |  |  |  |  |
| cutaceus, Lam. |  |  |  |  | * | * | * | ..... | * |  |  |
| olearius?, Lin. ..... |  |  |  |  |  |  | * |  |  |  |  |
| scrobiculatus, Lam. pilearis, Lam. |  |  |  |  |  |  | * |  |  |  | * |
| pilearis, Lus, Lam. |  |  |  |  |  |  |  |  | * | * | * |
| Ranella, Lam. |  |  |  |  |  |  |  |  |  |  |  |
| levigata, Lam. |  |  |  |  |  |  |  |  | * |  |  |
| Pisania, Biron.D'Orbignii, Payr |  |  |  |  |  |  |  |  |  |  |  |
| maculosa, Lam. . |  |  |  |  |  |  | * |  |  |  | * |
| Typhis, Montf. |  |  |  |  |  |  |  |  |  |  |  |
| Sowerbii, Brod. |  |  |  |  |  |  | * |  |  |  |  |
| Murex, Lin. |  |  |  |  |  |  |  |  |  |  |  |
| erinaceus, Lin. |  |  | * | * | * | * | * | ...... | * | * |  |
| trunculus, Lin. . <br> brandaris, Lin. |  |  |  |  | ... | * | * |  |  |  |  |
| corallinus, Scacchi. |  |  |  |  | * | * | * | * | * | * | * |
| Edwardsii, Payr. |  |  |  |  | * | * | * | $\ldots$ | * | * |  |
| cristatus, Brocchi |  |  |  |  |  |  | * |  |  | * |  |
| torosus, Lam..................... |  |  |  |  |  |  |  | * |  |  |  |
| sp. ined....................... |  |  |  |  |  |  |  |  | * | * |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Peronii, Lam. .............. |  |  |  |  | * | .... | * | .... | * | ..... | * |

Number of species enumerated :-
Acephala, 275 ; Pteropoda, 14 ; Gasteropoda, 460 : Total 750.
Number of species obtained in the most northern district (Finmark and Nordland) :88 Acephala, 100 Gasteropoda; total 188 species, of which

72 Acephala, 88 Gasteropoda $=160$, were found as far sonth as North Drontheim.

| 64 | " | 71 |  | $=135$ |  |  | Scotland. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 50 | ", | 43 | ", | $=93$ | ", | " | British Channel. |
| 37 | " | 36 | " | $=73$ | ", | ", | North of Spain. |
| 35 | " | 25 | " | $=60$ | " | " | Portugal. |
| 35 | " | 24 | " | $=59$ | " | " | S. of Spain \& Mediterranean. |
| 19 | " | 15 | " | - 34 | " | " | Mogador. |
| 8 | " | 8 | " | $=16$ | " | " | Canary Islands. |
| 6 | " | 4 | " | $=10$ | " |  | Madeira. |

Of 83 Acephala and 93 Gasteropoda $=\mathbf{1 7 6}$ species from the coast of North Drontheim-
77 Acephala and 80 Gasteropoda $=157$ found as far sonth as Scotland.

| 60 | $"$ | 51 | $"$ | $=111$ | $"$ | British Channel. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 45 | $"$ | 43 | $"$ | $=88$ | $"$ | North of Spain. |
| 41 | $"$ | 30 | $"$ | $=71$ | $"$ | Portugal. |
| 41 | $"$ | 29 | $"$ | $=70$ | $"$ | Mediterranean. |
| 23 | $"$, | 18 | $"$, | $=41$ | $"$ | Mogador. |
| 16 | $"$ | 11 | $"$ | $=27$ | ", | Canary Islands. |
| 10 | $"$ | 8 | $"$ | $=18$ | Madeira. |  |
| 69 | $"$ | 82 | $"$ | $=151$ | $"$ north as Nordland and Finmark. |  |

Of 117 Acephala, 1 Pteropod, and 142 Gasteropoda $=260$ species found on the coasts of Scotland-

97 Acephala, 103 Gasteropoda $=200$, extend south to the British Channel.

| 81 | $"$ | 86 | $"$ | $=167$ | $"$ | North of Spain. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 76 | $"$ | 69 | $"$ | $=145$ | $"$ | Portugal. |
| 76 | $"$ | 65 | $"$ | $=141$ | $"$ | Mediterranean. |
| 47 | $"$ | 46 | $"$ | $=93$ | $"$ | Mogador. |
| 36 | $"$ | 36 | $"$ | $=72$ | $"$ | Canary Islands. |
| 26 | $"$ | 25 | $"$ | $=51$ | Ma |  |
| 70 | $"$ | 83 | $"$ | $=153$ | extend as far north as Drontheim. |  |
| 59 | $"$ | 72 | $"$ | $=138$ | $"$ | Nordland and Finmark. |

Of 122 Acephala, 136 Gasteropoda $=258$ species from the south coast of England103 Acephala, 114 Gasteropoda $=227$, are found as far south as the North of Spain.

| 98 | $"$ | 94 | $"$ | $=192$ | $"$ | $"$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 98 | $"$ | 90 | $"$ | $=188$ | $"$ | $"$ |
| 59 | $"$ | 59 | $"$ | $=118$ | $"$ | Portngal. |
| 45 | $"$ | 48 | $"$ | $=93$ | $"$ | Mediterranean. |
| 30 | $"$ | 33 | $"$ | $=63$ | Mogador. |  |
| 91 | $"$ | 99 | $"$ | $=190$ | $"$ | Canary Islands. |
| 51 | $"$ | 49 | $"$ | $=107$ | $"$ | north as |
| 46 | $"$ | 42 | $"$ | $=88$ | $"$ | Madeira. |
|  |  | Scotland. |  |  |  |  |
| Drontheim. |  |  |  |  |  |  |

Of 94 Acephala, 123 Gasteropoda $=217$ from the north coast of Spain, including Vigo-
88 Acephala, 95 Gasteropoda $=183$, are found as far south as Portugal.

|  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 86 | " | 89 | " | $=171$ | " | " | Mediterranean. |
| 49 | " | 61 | " | $=110$ | " | " | Mogador. |
| 35 | " | 46 | " | = 81 | " | " | Canary Islands. |
| 22 | " | 34 | " | $=56$ | " |  | Madeira. |
| 81 | " | 91 | " | $=172$ | " | north | South of England. |
| 62 | " | 66 | " | $=128$ | " | " | Scotland. |
| 38 | " | 38 | " |  | " | " | North Drontheim. |
| 30 | " | 33 |  |  |  |  | Nordland and Fin |

Of 90 Acephala, 74 Gasteropoda $=164$ species of Mollusca from the coast of Portugal-
88 Acephala, 65 Gasteropoda $=153$, extend to the $S$. of Spain and Mediterranean.


Of 184 Acephala, 7 Pteropoda, 233 Gasteropoda, I Cephalopod $=425$ species from south of Spain and Mediterranean-
91 Accphala, 6 Pteropoda, 116 Gasteropoda, 1 Cephalopod $=214$, extend S.to Mogador.

| 69 | $"$ | 6 | $"$ | 100 | $"$ | 1 | $"$ | $=176$ |  |
| ---: | ---: | ---: | ---: | ---: | ---: | :--- | :--- | :--- | :--- |
| 46 | $"$ | 6 | $"$ | 64 | $"$ | 1 | $"$ | $=117$ | Canary Islands. |
| 122 | $"$ | .. | $"$ | 120 | $"$ | 1 | $"$, | $=243$ | Madeira. |
| 109 | $"$ | .. | $"$ | 103 | $"$, | 1 | $"$, | $=213$ | N. to Portugal. |
| 99 | $"$ | . | $"$ | 82 | $"$ | . | $"$ | $=181$ | North of Spain. |
| 73 | $"$ | . | $"$ | 57 | $"$ | $\cdots$ | $"$ | $=130$ | S. of England. |
| 42 | $"$ | . | $"$ | 26 | $"$, | $\cdots$ | $"$, | $=61$ | Scotland. |
| 33 | $"$ | .. | $"$ | 20 | $"$ | .. | $"$ | $=53$ | North Drontheim. |

Of 44 Acephala, 64 Gasteropoda $=108$ species obtained at Mogador-


Of 78 Acephala, 9 Pteropoda, 179 Gasteropoda, and 1 Cephalapod $=267$ species of Mollnsea obtained in the Canary Islands-
48 Acephala, 5 Pteropoda, 86 Gasteropoda $=139$, were found in Madeira.


Of 56 Acephala, 6 Pteropoda, 107 Gasteropoda $=169$ species from Madeira48 Acephala, 5 Pteropoda, 86 Gasteropoda $=139$, are found in the Canary Islands.

| 10 |  |  | " | 27 | " | $=37$ | " | Mogador. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 46 | " | 6 | " | 64 | " | $=116$ | " | Mediterranean. |
| 24 | " | . | " | 27 | " | $=51$ | ," | Portugal. |
| 22 | " | .. | " | 34 | " | $=56$ | , | North of Spain. |
| 30 | " | .. | " | 33 | " | $=63$ | " | South of England. |
| 26 | " | . | " | 25 | " | $=51$ | " | Scotland. |
| 10 | , | .. | " | 8 | " | $=18$ | " | North Drontheim. |
| 6 | " | . | " | 4 | " | $=10$ | " | Nordland and Finmark. |

To judge of the marine Mollusca of the Azores from the few species received from thence, they appear to be generally identical with those of the Mediterranean, except a very few species not identified, and several littoral species, such as Littorina striata, IIitra fusca, Mitra zebrina, Pedipes, which are not European, but common to Madeira and the Canary Islands.

## Concluding Olservations.

The acephalous or bivalve Mollusca possess generally a capacity to exist through a greater bathymetrical range than univalves, several species of the former being to be found in all the zones of depth from the margin of the sea to a hundred or more fathoms, and it is these same species which are most widely distributed geographically, as might indeed be reasonably inferred, it being evident that the depths of the ocean can be comparatively but slightly affected by changes of temperature and of climate, and that, consequently, a species removed to a distance northward or southward from its most congenial habitat, would encounter less change in climatal conditions by seeking a greater depth.

Those species which inhabit a great vertical range, such as Saxicava arctica, Venus striatula, Venus ovata, Lucina borealis, \&c., have generally their maximum of development and attain their greatest dimensions in shallow water; and I call the attention of geologists to this fact as it may occasionally be of service in determining the depth at which strata have been deposited. Another importantpoint, deserving attention on account of its bearing on geology, is the modifications of growth, incident to all the individuals taken from a great depth, as compared with individuals of the same species taken from a moderate depth. Some of these vary in different species, but the general characteristics of deep-water specimens are deficiency of colour and of solidity, and smallness of size.

Northern species generally diminish greatly in size as they approach southern latitudes; but the converse of the rule cannot be so generally applied to southern species, for while some of these are smaller, others increase in dimensions as they approach the northern limit of their range. As examples of the latter, I may mention Ringicula auriculata and Mactra rugosa, which attain their maximum size in Vigo Bay, Haliotis tuberculata in Guernsey, and Tellina balaustina in the West of Ireland and the Hebrides.

To give an idea of the comparatively small number of species existing in high northern latitudes, I may mention that I obtained 50 per cent. more of species in the Canary Islands than in the northern provinces of Norway, although I bestowed at least thrice the amount of time and labour in dredging the latter, under more favonrable circumstances, and through a greater range of latitude.

The correct division of the marine Mollusca into provinces, or as they are called "Faunas," is a subject deserving consideration, as it may be of assistance to us in our endeavours to become aequainted with the laws regulating the distribution of species.

The Arctic and Tropical faunas are tolerably well defined by the zones after which they are named, except that the former, on the European side of the Atlantic, recedes a few degrees within the Arctic Circle, in consequence of the current which sets northward along the coast of Norway. It is the division of the temperate zone into the Boreal, Celtic, and Lusitanian or Mediterranean provinces, which offers some difficulty, and I take the liberty of submitting the fellowing suggestions with reference to it.

Two sets of Mollusca of very different type advance from the sub-arctic and sub-tropical regions towards each other. In the course of their progress each loses by the way many of its most characteristic members, which one after another become extinct, so that when they reach their point of contact, the species are comparatively few in number, and not the most characteristic of their northeru or southern origin. In order to remedy this state of things and to accomplish an equable distribution of Mollusca throughout the temperate zone, it is necessary that there should exist an intermediate fauna, pervading more or less the ground occupied by both the others, and having
its principal development at their point of meeting, and this I believe to be neither more nor less than what actually nccurs. The point at which the north temperate or boreal, and the south temperate faunas meet, I conceive to be about lat. $50^{\circ}$, or at the British Channel, which marks the limit of some of the most characteristic northern forms, viz. Buccinum undatum, Fusus antiquus, Cyprina Islandica, \&c., as well as of the genera Haliotis, Lachesis, Calyptraa, Venerupis, Gastrochana, Auricula, and numerous species of southern type. Supposing my view to be correct, it is at once seen why there can be no peculiar species in the Celtic (or as I would rather call it), the English or intermediate fauna. It is difficult to lay down an exact line of division between one animal province and another, the transition being gradual; but I would consider the "internediate" fauna to be contained between the 45 th and 55 th parallels of latitude, which will include the larger portion of the Bay of Biscay and a considerable part of the North Sea. All species which attain their maximum of development within these limits I would consider legitimately to belong to it, and among the most characteristic of these may be mentioned Purpura lapillus, Natica monilifera and $N$. nitida, Trochus zizyphinus, Lacuna puteolus, L.pallidula, all the 13ritish Pholades, Mactra solidr, Tellina crassa, Peeten opercularis, P. pusio, and Venus striatula.

Although, as already stated, the transition from one fauna to another takes place gradually, the change is much greater at certain geographical points than at others, and the neighbourhood of Cape St. Vincent is remarkable as the northern limit on the Atlantic coast of about a hundred sonthern species, including the following genera :-

| Solemya. | Siphonaria. | Ranella. | Conus and |
| :--- | :--- | :--- | :--- |
| Cardita. | Sigaretus. | Mitra. | Cypræa (except the |
| Chama. | Crepidula. | Columbella. | sub-genus Trivia). |
| Spondrlus. | Cancellaria. | Pollia. |  |

Though Cardita and Mitra reappear in the Polar seas represented each by a single species, and Cancellaria under the form Admete. Cymba extends to the neighbourhood of the rock of Lisbon; Ringicula to Vigo; Triton, Turbo, Cassis, and Lithodomus to Asturias; Adeorbis, Haliotis, Calyptraa, Lachesis, Gastrochena, Venerupis, Galeomma, and Avicula to the south coast of England.

The circumstance of so many characteristic forms disappearing at Cape St. Vincent, may perhaps be accounted for by the change which there takes place in the direction of the coast and consequent set of the current. It will be noticed that the disappearance of species is all in one direction, and that the point in question is not known to form the southern limit of a single species; also that nearly all the genera enumerated as not passing it are to be found six or seven degrees further north in the Mediterranean.

A circumstance analogous to what occurs at Cape St. Vincent takes place about the South of Scotland with reference to northern forms of Mollusca. Of 135 Norwegian species which extend to Scotland, no less than 42 are absent from the Soutly of England; and this fact is, I conceive, to be explained by the change in the nature of the sea-bottom, which may also account for the circuinstance that many species, and among them the peculiarly northern forms of Trichotropis, Cemoria, and Pilidium, are common to the coast of Norway and the Hebrides, and even extend as far south as the Clyde, while they are altogether absent from, or but very rarely found upon the east coast of Scotland.

The Mediterranean fauna may be considered a brauch of the north temperate Atlantic, agreeing with it in its general character, though possessing some peculiarities, a natural result of its isolated condition.

