

prove simply this, viz. that the Edentata are allied to the Reptiles, and that more nearly than to Birds.

It would have been absurd to expect any other result from this investigation than such as the present: a group is never related to one other group only: "The true affinities of organic structures branch out irregularly in all directions."

I cannot conclude without observing, that it is highly remarkable and interesting that affinities should be found to prevail amongst creatures often remotely situated one from the other in the Animal Kingdom; that these relations often appear subtle and irrespective of functional similarity; and that whilst their final cause will probably ever remain unknown to man, we cannot consider them without deeply appreciating the order, the unity and dependence which prevail throughout all parts of nature.

EDW. FRY.

MISCELLANEOUS.

A new genus of Sea-Snake from Port Essington.

By J. E. GRAY, F.R.S.

THE snake here described formed part of the extensive collection brought home by Mr. Jukes, the naturalist to H.M.S. Fly. It is remarkable as having the compressed shape, the short blunt head, the peculiar lunate valvular nostrils on the upper surface of the nose, the small superior eyes, the head-shields and the compressed tail of *Hydrus*, but differs from it in having large polished smooth keelless scales, and the broad band-like ventral shields of the vermiform terrestrial snakes (*Elaphina*). In this respect it agrees with the genus *Aipisurus*, but it is at once distinguished from that genus by the ventral shields being broader in proportion and acutely keeled along the middle line, and by having the head-shields of *Hydrus*; in fact it is exactly intermediate between the genus *Hydrus* of *Hydridæ* and *Aipisurus* of *Elaphina* in *Colubridæ*. It may be called *HYPOTROPIS*.

Scales large, smooth, six-sided; head short, truncated in front; nasal large, with the lunate nostrils in the middle of their hinder part; crown shields small, superciliary numerous, labial shield high, loreal none; throat scaly; ventral shields broad, band-like, folded together and keeled in the middle, notched behind at the keel; tail compressed, covered with large broad six-sided smooth scales.

Hypotropis Jukesii. Olive, yellowish below.

Hab. Sea, near Darnley Islands. "Merad sand-bank, while at anchor, May 1845."

On the Pulmograde Medusæ of the British Seas.

By Prof. E. FORBES*.

At the Birmingham Meeting in 1839, the author, in conjunction with Prof. Goodsir, brought forward a first essay towards an investigation of the British Acalephæ, selecting the ciliograde species for illustration. Since that time he has yearly availed himself of every opportunity of pursuing the inquiry, but has abstained from publish-

* Read at the Southampton Meeting of the British Association.

ing, hoping to gain more complete knowledge of a difficult and much-confused branch of zoology. Having now however examined more than twice the recorded number of British Medusæ, and become acquainted with numerous new specific and several new generic forms of great interest to the naturalist, he ventures to lay before the Section an outline of the data in his possession. These data are in great part due to the opportunities afforded him by his voyages round the coasts of Britain with his friend Mr. M'Andrew. After pointing out the difficulties attending the study of these animals, and giving a brief view of the present state of the subject generally, Prof. Forbes insisted on the necessity in future of naturalists abstaining from publishing imperfect observations respecting them, and urged the adoption of the descriptions of Milne Edwards, Sars and Will as models for those who were ready seriously to engage in the study. He called attention to the important observations on their development lately made by his friend Prof. Reid of St. Andrews, and expressed a hope that ere long the return of the Arctic expedition would bring a great mass of new materials of the most accurate description through the observations of Mr. H. Goodsir. In grouping the British species, Prof. Forbes calls attention to the mutual correspondence of certain characters; viz. of the condition of the reproductive, digestive and sensitive systems. He proposes to group all the British Medusæ under such as have hooded and such as have naked ocelli. The first character is combined with a conspicuous and comparatively complicated reproductive system, and a ramified gastro-vascular apparatus. All the Pulmograda with naked ocelli have simple vessels, with one exception,—a new and most beautiful generic form, the type of a subsection by itself. The remainder form three natural groups, as will be seen in the following general table, exhibiting the arrangement of the British Pulmograda Medusæ :—

1st Section.—Hooded-eyed; ramified gastro-vascular system.

1st Genus.—*Rhizostoma* (Cuvier). 1 species, *R. Aldrovandi*.

2nd Genus.—*Cassiopea* (Peron). 1 sp. *C. lunulata*.

3rd Genus.—*Pelagia* (Peron). 1 sp. *P. cyanella*, one of the most phosphorescent and beautiful of European Medusæ, now first announced as British, having been taken during the past month by Mr. M'Andrew and Prof. Forbes off the coast of Cornwall.

4th Genus.—*Chrysaora* (Peron). 1 sp. *C. hysoscella*.

5th Genus.—*Cyanea* (Peron). 2 sp. *C. capillata* and *C. Lamarckii*, both common; very large, stinging Medusæ.

6th Genus.—*Medusa* (Linnaeus, Escholtz; *Aurelia*, Peron). 2 sp. *M. aurita* and *M. cruciata* (the latter is the Medusa so abundant in Southampton Harbour). It has white ocelli.

Many more spurious species of *Cyanea*, *Medusa* and other genera are recorded by Peron, Lesson and others, and enumerated as inhabitants of the British Channel. After careful consideration, they have been rejected as mere varieties from this arrangement. Certain forms belonging to this section recorded by Pennant and Templeton are also rejected as too imperfectly observed to be of any service to science.

2nd Section.—Pulmograda with naked ocelli.

1st Family.—Vessels branched.

7th Genus.—*Willsia* (new sp. *W. stellata*, founded on a beautiful little Medusa with six starlike ovaries and branched vessels). It is abundant in the British Channel and on the west coast of Scotland.

2nd Family.—Vessels simple; ovaries convoluted and lining the pedunculated stomach.

8th Genus.—*Turris* (Lesson; *Eirene*, Escholtz), 2 sp. *T. digitale* of O. Fabricius (Zetland) and *T. neglecta*, Lesson, the *Cyanea coccinea* of Davis; British Channel. Very highly organized Medusæ, closely approaching Actiniæ.

9th Genus.—*Saphenia* (Escholtz). 1 sp. *S. dinema*, Peron. Devon. Zetland.

10th Genus.—*Oceania* (Peron—*Tiara*, Lesson). 4 sp., one being the "*Geryonia octona*" of Fleming; the other three are new.

3rd Family.—Vessels simple; ovaries in the course of the vessels, on the subumbrella.

a.—With eight vessels.

11th Genus.—*Æquorea* (Peron), or perhaps deserving of a distinct appellation. 1 sp., common on the Scotch coast; it is the "*Melicertum campanulatum*" of Ehrenberg (not of Escholtz), "*Oceania octocostata*" of Sars, and "*Thaumantias Milleri*" of Mr. Landsborough, and "*Æquorea octocostata*" of Lesson. It has long yellow ovaries.

12th Genus.—*Circe* (Mertens). Ovaries 8, minute. 1 sp. *C. rosea*. Zetland, new.

b.—With four vessels.

13th Genus.—*Thaumantias* (Escholtz); ovaries four, ovate, clavate or linear, stomach short; 19 British species, of which 12 are new and undescribed. All very distinct from each other.

14th Genus.—*Slabberia* (new), founded for a singular little Medusa remarkable for its extremely linear ovaries, long proboscis, and the development of an ocellated bulb at the end as well as at the base of each tentacle: *S. halterata*; coast of Cornwall.

15th Genus.—*Geryonia* (Peron). 1 sp., new, *G. appendiculata*. British Channel.

16th Genus.—*Tima*? (Escholtz) *T. Bairdii* of Johnston; common on the east coast of Scotland.

4th Family.—Vessels simple; ovary in substance of peduncle. Gemmiparous.

A.—Peduncle with lateral lobes; tentacula fasciculated.

17th Genus.—*Bougainvillia* (Lesson—*Hippocrene*, Brandt), with 4 fascicles of tentacles. 3 sp., 2 new.

18th Genus.—*Lizzia* (new, with 8 fascicles of tentacles and unequal lobes to peduncle), founded for the *Cytæis octopunctata* of Sars, which, with two other undescribed species, inhabits the Zetland seas.

B.—Peduncles inflated; tentacula not fasciculated.

19th Genus.—*Modeeria* (new). 1 sp. from the Hebrides.

C.—Peduncle elongate; tentacula not fasciculated.

a. With four tentacles.

20st Genus.—*Sarsia* (Lesson). 4 British sp.

b. With one tentacle only developed.

21nd Genus.—*Steenstrupia* (new). 3 sp.

In all there are fifty species of British Pulmograda known to Prof. Forbes, excluding doubtful forms and varieties. Of these nine only had been previously recorded as British, and of the remainder, all but five are undescribed.

METEOROLOGICAL OBSERVATIONS FOR AUG. 1846.

Chiswick.—August 1. Uniformly overcast: hot and dry: 2 P.M. almost continued thunder: at 3 P.M. rain in torrents: at 4^h 40^m vivid lightning and rain, mixed with large hail: overcast at night 2. Sultry: thunder and rain: clear. 3. Rain: showery. 4. Cloudy and fine. 5. Heavy rain. 6. Cloudy and fine. 7. Overcast. 8, 9. Cloudy and fine. 10, 11. Very fine. 12. Rain: cloudy. 13. Cloudy: heavy rain. 14. Very fine. 15. Clear: fine: rain. 16, 17. Cloudy: fine. 18. Fine: rain. 19. Fine: drizzly. 20. Overcast: rain. 21. Densely clouded: rain. 22—25. Cloudy and fine. 26. Overcast. 27. Fine. 28—31. Very fine.

Mean temperature of the month 64°·16

Mean temperature of Aug. 1845 59·30

Average mean temperature of Aug. for the last twenty years 62·23

Average amount of rain in Aug. 2·41 inches.

Boston.—Aug. 1. Cloudy: rain P.M., with thunder and lightning. 2. Fine: rain P.M. 3. Fine: rain, with thunder and lightning A.M. 4. Fine: rain and lightning P.M. 5. Cloudy: rain P.M. 6, 7. Cloudy. 8. Fine. 9. Cloudy: rain A.M. 10. Fine: rain P.M. 11, 12. Fine. 13. Cloudy: whirlwind, with rain A.M. 14. Fine. 15. Fine: rain A.M. 16. Fine. 17. Fine: rain early A.M. 18. Fine. 19. Rain. 20. Fine: rain A.M. and P.M. 21. Rain. 22. Cloudy. 23. Cloudy: rain P.M. 24—27. Cloudy. 28. Fine. 29. Cloudy. 30, 31. Fine. —The past month has been extraordinary warm.

Sandwich Manse, Orkney.—Aug. 1. Cloudy: fine. 2. Fog: hot: fine. 3. Bright: hot: fog. 4. Clear: hot: fog. 5. Bright: cloudy. 6. Fog: cloudy. 7. Cloudy. 8. Bright: fog. 9. Fog: rain. 10. Bright: rain: clear. 11. Showers: clear. 12. Showers: cloudy. 13. Rain. 14. Bright: clear. 15. Rain. 16. Showers: small rain. 17. Cloudy: fine. 18. Cloudy. 19. Bright: hot: fog. 20. Cloudy: rain. 21. Cloudy: damp. 22. Damp: drizzle. 23. Cloudy. 24. Bright: cloudy. 25. Clear: aurora: fine. 26. Clear: fine. 27. Clear: aurora: fine. 28. Clear: fog. 29. Cloudy. 30. Bright: rain. 31. Rain: clear.

Mean temperature of the month 58°·82

Mean temperature of Aug. for nineteen preceding years 54·76

Mean temperature of Aug. 1845 53·16

Applegarth Manse, Dumfries-shire.—Aug. 1. Remarkably warm. 2. Very fine. 3. Very fine: thunder. 4. Fine: one shower. 5. Heavy shower: fine. 6. Fair and fine. 7. Rain, heavy: thunder. 8. Wet: thunder. 9. Wet P.M.: fair A.M. 10. Showers. 11, 12. Slight showers. 13. Very heavy rain: flood. 14. Fine: one shower. 15. Showers P.M. 16. Wet A.M.: cleared. 17. Very fine harvest day. 18. Rain nearly all day. 19. Fine harvest day. 20. Fine harvest day: thunder. 21—23. Fine harvest days. 24, 25. Fine harvest days: threatening. 26, 27. Fine harvest days: clear. 28, 29. Fine harvest days: threatening. 30. Fine harvest day. 31. Rain: cleared P.M.

Mean temperature of the month 61°·25

Mean temperature of Aug. 1845 56·4

Mean temperature of Aug. for twenty-three years 57·0

Mean rain in Aug. for eighteen years 3·61 inches.



Forbes, Edward. 1846. "On the pulmograde Medusæ of the British seas." *The Annals and magazine of natural history; zoology, botany, and geology* 18, 284–287. <https://doi.org/10.1080/037454809494431>.

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