diated fragments, each of which becomes a perfect indi­vidual.@@1

The growth of the Medusides is as rapid as their life ap­pears to be short and transitory. There are many which never reach the magnitude of a pin’s head ; and thence they graduate upwards to a size, even in our northern seas, of fully two feet across the disc, with labial appendages not less than six feet in length. The bulk to which they occa­sionally grow in the Indian Ocean is immense ; and were a like hugeness attainable by them in the northern seas, we might lend an easy belief to those naturalists who tell us that the *Kraken* was truly a Medusa.@@2 Mr Telfair saw a Medusa cast on shore in the Bombay territory in 1819, which must have weighed many tons. “ I went to see it when the gale had subsided, which was not for three days after its being cast upon the sand ; but it had already become offen­sive, and I could not distinguish any shape. The sea had thrown it high above the reach of the tide, and I instructed the fishermen who lived in the immediate neighbourhood to watch its decay, that if any osseous or cartilaginous part remained, it might be preserved; it rotted however en­tirely, and left no remains. It could not be less than *nine months* before it entirely disappeared, and the travellers were obliged to change the direction of the road for nearly a quarter of a mile to avoid the offensive and sickening stench which proceeded from it.”@@3

The Medusides abound in our seas during the summer and autumn, and are thrown ashore in heaps after every storm.@@4 Before the winter has set in, they have disap­peared, most of them being doubtless destroyed ; but during the cold season some surely inhabit the deep recesses of the ocean, to re-appear in another season ; and it is probable that the spawn of one summer’s generations lies hidden in the ooze until revived and evolved by the heat of the com­ing summer. In tropical seas they are still more profuse, as well as more sportive in their configurations. Voyagers tell us of sailing through flocks so dense as to check the ship’s progress, and expanding for miles over the surface ; nor are they weary of speaking of their beauty and their phospho­rescent and stinging properties. In the arctic seas these creatures are equally abundant, furnishing the giant whale with the material of his growth, and swarming so thick, when of microscopic minuteness, as to communicate their colour to the water. After his description of a globular semi-transparent species, from 1-20th to 1-30th of an inch in diameter, Dr Scoresby proceeds to say, “ I afterwards exa­mined the different qualities of sea-water, and found these substances very abundant in that of an olive-green colour ; and also occurring, but in less quantity, in the bluish-green water. The number of Medusæ in the olive-green sea was found to be immense. They were about one fourth of an inch asunder. In this proportion, a cubic inch of water must con­tain 64 ; a cubic foot 110,592 ; a cubic fathom 23,887,872 ; and a cubical mile about 23,888,000,000,000,000. From soundings made in the situation where these animals were found, it is probable the sea is upwards of a mile in depth ; but whether these substances occupy the whole depth, is uncertain. Provided, however, the depth to which they extend be but 250 fathoms, the above immense number of one species may occur in a space of two miles square. It may give a little conception of the amount of Medusæ in this extent, if we calculate the length of time that would be requisite, with a certain number of persons, for counting this number. Allowing that one person could count a mil­lion in seven days, which is barely possible, it would have required that 80,600 persons should have started at the creation of the world, to complete the enumeration at the present time.”@@5

Great numbers, for all of them are not so, as has been asserted, of the Medusides, are phosphorescent animals, emitting their lights at irregular intervals ; and the flame generally passes away after a short glow. The large spe­cies appear, when luminous, like globes of living fire float­ing on the surface, or shining at a great depth through the water ; but when the species are small and crowded, the luminousness is diffused all round, or it is broken into innu­merable spots of light, “ rising to the surface, and again disappearing, like a host of small stars dancing and spark­ling on the bosom of the sea.”@@6 The first kind of light is at least sometimes emitted at the pleasure of the creature, without the intervention of any foreign irritation ;@@7 but the other two seem always to require for its elicitation some outward stimulus, such as is given by their mutual contact and friction when a fresh breeze curls the waves, or when an oar-driven boat or a ship passes through the teeming waters, when “ a long train of lambent coruscations are perpet­ually bursting upon the sides of the vessel, or pursuing her wake through the darkness.”

In such species as we have observed, the luminosity could not be detected issuing from any particular point or organ : it seemed that the whole body was impregnated with the light, which was given out involuntarily, if we may so speak ; for some exterior irritation was necessary to produce the appearance of it, though the Medusæ do not distinguish whether the annoyance proceeds from an ani­mate or inanimate object. The species which possess the property are diffused through all seas, and the phenomenon is little less beautiful and interesting in the Hebrides than it is under the line, or in Australian seas.@@8 "The phospho­rescence takes place, particularly around the tentacula, during

*@@@1 Ann. des Sc. Nat.* n. s. vii. p. 248.

@@@3 See Bester, *Opusc. Subs.* i. p. 26.

*@@@s Edin. New Phil. Joum.* iv. p. 406.

@@@\* “ They are sometimes thrown in great quantity upon the shores of our climate, where endeavours have been made to turn them to some advantage. It has been attempted, but without much success, to extract ammonia from them. They have been more beneficially employed in the way of manure upon arable land.” Griffith’s *Guoier,* xii. p. 567. The Medusides are all pelagic ; but Professor Schwencke is said to have kept a species for six days alive in a basin of *fresh* water,—“ ex 8para fluvio hausta.”—a very wonderful fact, when we remember how instantaneously poisonous fresh water is to marine animals in general. Bester, *Opusc. Subs.* ii. p. 58.

*@@@5 Edin. Phil. Journ.* ii. p. 12.

@@@6 Baird in *Mag. of Nat. Hist.* iii, p. 309, and vol. ix. p. 502. See also Thompson’s *Zoological Researches,* p. 38, &c.

@@@7 Some naturalists deny the luminous property of the Medusides *ex toto,* maintaining that the light is merely elicited by friction. &c., from some matter or fluid with which the water is impregnated at the time. This opinion is ably supported by Mr Westwood in the *Mag. of Nat. Hist.* iv. p. 505, &c. ; and for some observations confirmatory of this view, we refer to the same work, vol. v. p. 1, &c. The opinion however appears to us to be untenable, and is apparently disproved by the fact that Medusæ have been noticed giving out their light at many fathoms depth, where they were beyond disturbance. "While sailing in the more shallow parts of the Carribbeαn Sea,” says the Rev. Mr Guilding, "and looking over the vessel’s side when becalmed in these dangerous waters, in the midst of reefs, I have seen at the bottom huge mollus­cous or radiate animals emitting the splendour of a lamp, but could never ascertain the species.” *Mag. of Nat. Hist.* vii. p. 581. It were easy to quote similar facts, but a more conclusive one is this. We had a luminous Dianea in a glass of sea-water, and in a vessel of the *same water* we had, at the *same lime,* a small specimen of Medusa aurita. The light was readily evoked from the Dianea, but we could obtain no light from the other vessel. It must therefore have proceeded from something else than the water. See in relation to this question the ob­servations of Mr Bennett in *Proceedings of the Zool. Soc. of London* for January 1837 ; and those of his brother in the same work for June 13, 1837.

@@@8 This is contrary to the assertion of voyagers, and it may be that our opinion is biassed by our partiality to all that is native. Humboldt says, “ The sea is phosphorescent in all latitudes ; but he who has not witnessed this phenomenon in the torrid zone, and especially in the Pacific Ocean, can form but an imperfect idea of the magnificence of such a spectacle.” See *Edin. New Phil. Jours.,* v. p. 329.—Dr Maccul-Joch, during a voyage to the Shetland and Orkney Isles, discovered upwards of 190 luminous animals, of which the most conspicuous were about twenty small Medusæ. *Edin. Phil. Journ.* v. p. 389.