

fusion. He next mentioned the points of interest presented by the acalepha, in consequence of their analogies in several respects, both to other classes of animals, and to the corolla of phenogamous plants.

Mr. FORBES said that it was a disgrace to British Natural History that so little had been done on the Medusæ. There were more of these animals in the Frith of Clyde than any other part of the kingdom, and he believed, that not only new species but new genera would be found there amongst these animals; and he hoped he was addressing some naturalist in Glasgow, that would follow up this subject. This group of animals was an illustration of the value of mere number in the arrangement of animals, their parts were always reducible to the number 4, whilst in the Echinodermata the number 5 prevailed. Whatever objections might be urged against the use of numbers in systematic arrangements, number was an important element of distinction amongst the members of both the animal and vegetable kingdom. The sting of these animals depended on a secretion; it was very powerful; he once accidentally applied some water to his face in which he had washed his hands after being stung by an acalephic animal, and the face became painful in consequence.

Sir W. JARDINE read a communication from Mr. Schomburgk, 'On the various Modes of Fishing employed by Indians in the West of Guiana.'—Although the Ichthyology of South America be little understood by European naturalists, yet the native Indians are practically well acquainted with the various tribes that are found in the magnificent streams of the New World. An acquaintance with about eighty species has thus been made by Mr. Schomburgk. The Indians in their fishing excursions use canoes, which are propelled and directed by paddles in a peculiar manner. The canoes on the Essequibo are mostly formed of a hollow tree, and small corials are used formed in the same manner. Another kind of boat is also used, called a pakasse, and formed out of the bark of a tree. "When we ascended the river Berbice," says the author, "two Wauwai boys belonging to our party, navigated one of those pakasses. They were perhaps not more than eight years old, but we were highly delighted to see how ably they managed it. The boat seemed to fly through the water, and the juvenile steersman directed its course with such judgment and precision that it never grounded, though it went over places where there was not more than eight or nine inches water. They were equally expert in the use of the bow and arrow; and, wherever they observed one of the finny tribe, the pakasse was halted, the bow strung, and off flew the pointed arrow, and when taken out of the sand, which the water barely covered, we generally observed a fish struggling for liberty." After describing the descent of the rapids in which these rivers abound, and the appearance of a band of travellers halting on the shores of the river, he adds—"During night commenced the fishing of lan-lan and others of the family Siluridæ. After the hooks have been baited with fish or animal flesh, they are carried out in the stream, the line to which they are attached being about thirty to forty fathoms long. If the Indian feels inclined, he keeps the end on the land in his hand, but frequently he takes a forked stick, which he drives into the ground, and, after having tied some dried bushes to the fork, he leads the stray line over it. If a fish should bite, the line being drawn by the baited fish, will disturb the dry leaves, make a noise, and the Indian hurries to seize the line and to haul the fish in. If it be a lan-lan (*Silurus*) or a large paramima (*Phractocephalus bicolor*), some considerable skill is necessary to haul the fish in, without breaking the line or the hook. Many of the Siluridæ issue a sound when taken out of the water, but few so loud and so continued as the paramima. The Indians have always a bludgeon in hand, with which they beat in the thickly armed skull, and each blow is sure to produce a loud grinding sound; so that we who were lying in our hammocks knew whether a lan-lan, paramima, or any other fish had been secured. The Indian considers that a large fire kindled at the water's edge is sure to attract such fishes as take the bait only during night, and they never fail, therefore, to have a fire or a large brand when they are fishing for lan-lans or paramimas. If large blocks of granite impeded the river near our corials, all hand-lines which could be spared or procured were set in re-

quisition to fish for pirais (Serra-salmon). The avidity with which they take the bait ensured success to the least practised, and if the place proved a haunt of the pirai, the Indian was sure to secure his dinner. The natives possess great art in throwing the hand-line from the shore into the stream: and it is a pretty sight to see the line circling in the air and descending in the water at a great distance from the bank or rock which the angler has selected for his stand." The detail of other modes of fishing was also entered into, and drawings of the paddles, hooks, rods, lines, and instruments used in fishing were exhibited.

Mr. PATTERSON read the Report of Mr. Thomson on the Irish Fauna, including only the Vertebrata.

This report was drawn up at the request of the Association, and will enable the British naturalist to ascertain what is the extreme western range of his species. From the different circumstances which influence the distribution of animals and plants, we do not find species of the former in Ireland, resembling those of the continent, as we do in the latter, and the animal kingdom has no representative of *Erica Mediterranea*, *Menziesia polifolia*, *Arbutus unedo*, &c. The Fauna of Ireland is compared with that of Great Britain, but the former ranges over only 4° of longitude, whilst the latter is double. The physical character of Ireland would make but little difference, although elevation may be the cause of the existence of two vertebrals—the ptarmigan (*Tetrao lagopus*) and the Alpine hare (*Lepus variabilis*). They may, however, be influenced by climate. The difference of temperature between Ireland and Great Britain does not attract or repel animals from one to the other; otherwise it has an influence. The stoat (*Mustela erminea*) very rarely changes its garb in Ireland. Birds, even in the north, which are migratory in Britain, are stationary in Ireland, as the quail (*Perdix coturnix*). Many of the soft-billed birds sing throughout the year, which are silent in winter in Great Britain. Although the Cyprinidæ (among fishes) increase towards the south of Europe, there are fewer in Ireland than England. The *Scolopax rusticola*, *S. gallinula*, *S. gallinago*, and *Sturnus vulgaris*, are more abundant; mammalia are fewer than in Great Britain. Cheiroptera are remarkably deficient. In the genus *Mus* there is one, not found elsewhere, *M. Hibernicus*. The squirrel and dormouse are absent, and there are no examples of *Arvicola*. *Lepus Hibernicus* is known only to Ireland. The polecat (*Mustela putorius*) is unknown. *Mustela vulgaris* is much more rare than *M. erminea*. The mole (*Talpa Europæa*) is absent. Of *Sorex*, there is but one species, called provisionally by Mr. Jenyns, *S. Hibernicus*. Of birds, the species that appear in Great Britain, and not in Ireland, are chiefly occasional visitants. There are no Ophidian reptiles in Ireland. In Amphibia, the toad (*Bufo vulgaris*), is absent; and the frog (*Rana temporaria*) is said to have been introduced. The natterjack (*Bufo calamita*), is only indigenous to Kerry. Tritons prevail. In fish, the families in which there is greatest deficiency compared with Great Britain are, *Percidæ*, *Sparidæ*, *Teniodæ*, and *Raiadæ*; there is a deficiency of fresh-water fishes. The number of species are Mammalia, 29; Aves, 230; Reptilia, 2; Amphibia, 3; Pisces, 150. The Report terminated with the expression of a hope, that the invertebrate animals would be included next year.

Mr. VIGORS hoped the Invertebrate Fauna would be added, as that was the original intention of the Committee in calling for the Report. There were great difficulties in the way, but the Fauna of Ireland was one of great interest to the naturalist, and, if completed, much that is new might be anticipated. In the department of marine zoology, we might hope for the assistance of Messrs. Patterson and Forbes. The insects would form a difficult class; he believed that many of the common insects of Ireland, as some of the Lepidoptera, were different species from the English.

Prof. GRAHAM read the Report of the Committee 'for Engraving Skeleton Maps, for recording the distribution of Plants and Animals.'

A grant of 20*l.* was made at the last meeting of the Association, for engraving these maps. The Committee found, however, that they could not engrave the required number with that expenditure, and accordingly had recourse to lithography, which in this instance has an advantage over engraving,

in that alterations in the map may be more easily made. Three maps were arranged, one of each hemisphere, and another of the British Isles. The superintendence of these was intrusted to Mr. Brand, who had for some time been engaged in preparing a series of tables or catalogues for the Botanical Society of Edinburgh, and as the latter were to contain a variety of topographical details, it was thought that by executing both schemes simultaneously, the accuracy and completeness of both would be materially promoted. The details chiefly sought to be given with fulness were, those of the river and water systems, which exercise so important an influence on vegetable and animal productions, and which must form the basis of all schemes for illustrating their geographical disposition. It was also thought desirable to mark the chief elevations at different points, in order to show more readily the prominent features of the globe, and for the same object all important lakes have been carefully laid down. The political boundaries of countries, with the names and position of their larger towns, although of no value as regards the object immediately in view, have likewise been marked, for the purpose of aiding researches among works on natural history, and of facilitating reference to the ordinary maps. The maps already made are not considered as completed, and it is recommended that they should be transmitted "in proof" among such parties as might be likely to suggest corrections or additions of a useful character, and that thereafter they should be printed off, and sold at the lowest remunerating price. The maps already prepared were exhibited to the Section, and distributed amongst the members.

Mr. VIGORS read a short communication from Sir Thomas Phillips, 'On the Migration of Birds on certain parts of the Coast of Ireland,' from which it appeared, that so long since as 1684, observations had been made on the migration of Brent geese from the barony of Forth, in the county of Wexford. Mr. Vigors could confirm the truth of this statement at the present day; the document was interesting, as showing the permanence of the instincts of these birds.—Mr. SELBY related an instance of all sparrows having deserted a certain district in Rosshire. Birds were very punctual in their returns and departures, and he had observed for many years, these events to occur on the same days.

'Remarks on the Synonyms and Affinities of some South African Genera of Plants,' by Dr. W. Arnott.

The object of these remarks was to prove, first, that the *Flacourtia rhamnoides* of Eckl and Zeyher, and perhaps also of Burchell, was the *Doryalis zeyherioides*, E. M., and approached more to Euphorbiaceæ than to either of the orders with which it has been associated. Secondly, that the genus *Schmidia* (or *Ornitrophe*) does exist in South Africa, although omitted from all the Floras, and that several of Thunberg's and E. Meyer's species of *Rhus* belong to it. Thirdly, that *Hippobromus* belongs to Sapotaceæ. Fourthly, that *Eriodaphne* of Nees von Eschbeck, is identical with *Phoberos* of Lour. Fifthly, that *Trimeria* of Harvey has been already erroneously described by Sprengel, as a *Celastrus*; and, sixthly, that *Ophira* of Linnæus, is the same as *Grubbia*, Linn.; but that *Ophira* of Lamarck's 'Illustration des genres,' is a very distinct genus, which has been lately described by Dr. Klotzsch, of Berlin, under the name of *Strobilo carpus*, and that the true structure of these genera appears to ally them on the one hand to Hamamelidæ, and on the other to Santalaceæ, to which last, if Dr. Klotzsch's analysis were quite correct, they would decidedly belong.

'Remarks,' in continuation, on a paper read by the Author (G. T. Fox), at Birmingham, 1839.

The paper on 'Cetology' was accompanied by a letter, giving an account of the origin of the bones of a whale, lately discovered in the rubbish of the crypt of the keep of Durham Castle. The letter professed to be an original composition of John Cosin, Bishop of Durham, in 1661, and was communicated by a gentleman, as coming from a collection of papers in Durham Castle, belonging to the late Mr. Surtees (the historian), and then in that gentleman's possession. No doubt being entertained of the authenticity of the letter, it was printed in the Durham newspaper at the request of the professors of Durham University, and was made use of, with the full permission of the gentleman who communicated it, by the author, in