

of the fisheries by every means in their power, and to impose no restrictions or regulations upon them which were not clearly consistent with that object. I have neither time nor inclination again to deal with all the old arguments which year after year have been brought forward to show that our sea fisheries are being ruined. It is not quite two years since I entered at some length into the subject in my work on "Deep-sea Fishing and Fishing-boats," and the question is not one that can be discussed in a few lines, or even pages. But I may ask Prof. Newton how he reconciles his belief in a falling-off in the supply of sea fish with the recent considerable enlargement of Billingsgate Market, the continued immense fish traffic on the railways, and the large additions which have been made, and are now being made, to the capital invested in fishing-boats and gear? Brixham alone has added twelve new large trawlers, costing nearly 1,200*l.* each, to her fleet in the present year; and the shipwrights there were hard at work on several more for other stations when I visited the place last month. Prof. Newton rightly calls science to the aid of the sea fisheries, for there is still an immense deal to be learnt about the economy of fishes which may help the fishermen in their work. He makes no reference, however, to the important discoveries which have already been made by Professors Sars and Malm on the coast of Norway. The investigations of the former naturalist especially, carried on for several years, have resulted in showing that there need be little fear of disturbing the "spawning beds" of most of our edible sea fishes, as the spawn of almost all those in chief request is not deposited on the bottom, but floats during the whole process of development.

I will not enter into the question of destroying the balance of nature, on which Prof. Newton laid so much stress in his observations at Glasgow, because I believe we are all too ignorant of the conditions affecting it to be able to do more than theorise on the subject; but I would ask my friend, assuming he is correct in his belief that our sea fisheries are falling off, whether he has considered the probable effect on them and on the balance of nature, of the tens of thousands of additional gulls, guillemots, &c., which I hope will result from our sea birds' being undisturbed during the breeding season, under the Sea Birds' Protection Act, of which he was such an earnest advocate?

I do not know on what evidence he grounds his belief in the decline of our sea fisheries; but I have no hesitation in saying, as the result of my inquiries during the last few years, that the average annual produce of those fisheries has considerably increased since the Royal Commissioners were engaged in inquiring into their general condition. Bad weather has had an important effect in some years in interrupting the fishermen's work; but fluctuations from such causes have continually occurred, and they will undoubtedly happen again.

E. W. H. HOLDSWORTH

Mr. Wallace and his Reviewers

I DID NOT intend to take any public notice of reviews or criticisms of my book on "Geographical Distribution"; Mr. Gill's letter, however, calls for a few remarks. I have first to thank him for pointing out the errors of a previous critic, and also for a list of *errata* in the account of North American freshwater fishes. He very truly remarks, that had I been acquainted with ichthyology and its literature these errors might have been avoided; but he has overlooked the fact that I have twice stated (vol. i., p. 101, and vol. ii., p. 168) that the part of my work relating to fishes is, practically, a summary of Dr. Günther's Catalogue. The labour of going through such an extensive work for the purpose of extracting and tabulating summaries of the geographical materials it contains, was very great, and no doubt I have made some errors. Most of those indicated by Mr. Gill depend, however, either on differences of classification and nomenclature, or on additions to North American ichthyology since the date of Dr. Günther's work, and are therefore due to the plan of this part of my book, and not to oversight. Although possessing a tolerable acquaintance with the literature of ornithology, I had found the task of collating and combining the latest information into a uniform system of classification and nomenclature to be one which severely taxed whatever knowledge and literary ability I possessed. To have attempted to do the same thing in a class of animals which I had never studied would, I felt sure, have resulted in great confusion, and have been far less satisfactory and reliable than the course I have adopted. Had I been able to find any work giving a general account of the fishes of temperate North America, I

should gladly have availed myself of it, but I do not gather from Mr. Gill's letter that any such work exists; and notwithstanding the great imperfection of the results (in the eyes of a specialist) as regards the fishes of the United States, I still think I exercised a wise discretion in confining myself to the vast mass of materials, classified on a uniform system, which Dr. Günther's Catalogue affords.

I may here add, that the "24 peculiar genera" mentioned by me are in addition to the "5 peculiar family types"—making together the "29 peculiar genera" referred to in the succeeding paragraph—so that the contradiction alluded to by Mr. Gill is only apparent.

ALFRED R. WALLACE

Dorking, October 30

Self-fertilisation of Plants

IN NATURE, vol. xiv. p. 475, I find an abstract of Mr. Meehan's paper on the "self-fertilisation" of *Browallia elata*. When I first saw this paper in the *Proceedings* of the Philadelphia Academy of Natural Sciences, I suspected that the observation was incomplete and the inference hasty. It is therein stated that the densely bearded connectives of the upper anthers completely close the tube of the corolla with a bearded mass; that "no insect can thrust its proboscis into the tube except through this mass; and if it has foreign pollen adherent to it, it will be cleaned off by the beard; furthermore, the very act of penetration will thrust the anthers forward on to the pistil [meaning stigma], and aid in rupturing the pollen-sacs [opening the anther cells?], and securing self-fertilisation." My inspection of the flower showed that the orifice of the tube was clearly pervious on the (morphologically) anterior side by a chink, which is nearly divided by a crust of the tube into two orifices, one exactly before each anther-cell; a hog's bristle, slightly moistened, on being thrust down these passages in a freshly open flower, and then withdrawn, was found to have the inserted part well supplied with adherent pollen, so that it was *not* "cleaned off by the beard," nor was it cleaned off by introduction into the orifice of a second flower.

As to self-fertilisation being brought about by the thrusting of the overhanging anthers down upon the stigma, this seems to be effectually prevented by the lodgment of these anthers in a pair of cup-like concavities at the back of the stigma, so as to keep them quite away from the actual stigmatic surface. It is obvious that if insects ever self-fertilise *Browallia* it is by carrying down upon their tongue or proboscis some pollen from the upper anthers; but in this operation, passing from flower to flower, they are quite as likely to cross-fertilise them. The blossoms are freely visited by *Hymenoptera* and *Lepidoptera* of various sorts. It is quite probable that the other cases of "self-fertilisation" brought forward by Mr. Meehan may equally bear a different interpretation from his own.

ASA GRAY

Cambridge, Mass., U.S.A.

Nitrite of Amyl

MR. GEORGE ABYARCH, of Cincinnati, asks of me through the columns of NATURE two questions concerning the nitrite of amyl, which I may briefly answer as follows:—(1) Nitrite of amyl has been used, and with considerable success, in the treatment of epilepsy, but its application can only be entrusted to a regular practitioner of medicine who understands its mode of action. (2) It has not as yet been proved to be of service in the treatment of paralysis.

B. W. RICHARDSON

CAPT. NARES'S REPORT¹

H.M.S. *Alert*, at Valentia,
October 27, 1876.

SIR,—I have the honour to report in detail the proceedings of the Expedition since leaving Upernivik on July 22, 1875, as follows:—

The *Alert* and *Discovery*, one ship in tow of the other, left Upernivik, from which port I last had the honour of addressing you, on July 22, 1875.

A dense fog prevailing at sea I steamed to the northward, between the islands and the main land, experiencing clear and calm weather until arriving near Kangitok

¹ Communicated by the Lords Commissioners of the Admiralty.