Capt. Trauzl's volume is specially and mainly devoted to the consideration of one particular class of operations to which dynamite, like gun-cotton, has recently been applied with considerable success, namely, to the removal of tree-stumps from forest-ground which is being cleared, as also to the felling of trees, the removal of piles, and similar operations. By the judicious application of these explosive agents, tree-stumps may be removed with much greater expedition than by manual labour, and the experimental results collected by the author, with special reference to this utilisation of dynamite, will be found valuable to large landowners or to those engaged in clearing land in new settlements. Many of the data given by him in regard to this application of dynamite, are confirmed by corresponding results obtained in this country in extensive experiments with both gun-cotton and dynamite.

The special information with regard to the removal of tree-stumps, &c., is prefaced by a concise account of the properties of dynamite and of the methods of preparing and exploding dynamite charges. Capt. Trauzl has done well to direct special attention to the necessity for care in handling dynamite, and especially in carrying out the essential operation of thawing frozen dynamite, the careless or ignorant performance of which has given rise to many frightful accidents. It has unfortunately been the practice with many whose interests are identified with the sale of explosive preparations of this class, to lay undue stress upon their great safety in transport and use, as compared with gunpowder, and thus to foster, to a very lamentable extent, the tendency to recklessness which is specially prevalent among the class of people who have to employ those explosive agents.

Capt. Trauzl concludes with a chapter on the application of dynamite to the breaking up of ground for agricultural purposes. It appears doubtful whether even the less violent forms of dynamite, the employment of which is suggested for this purpose (for which a comparatively gradual explosive effect is most advantageous) are likely to prove superior to gunpowder for this special application.

OUR BOOK SHELF

The Crimea and Transcaucasia; being the Narrative of a Journey in the Kouban, in Gouria, Georgia, Armenia, Ossety, Imeritia, Swannety, and Mingrelia, and in the Tauric Range. By Commander J. Buchan Telfer, R.N. Maps and Illustrations. Two Vols. (London: King and Co., 1876.)

THE author of this work took advantage of a three years' residence in Southern Russia to make acquaintance with the region to which his work refers, and which is pretty adequately indicated in the title. He does not, however, give a regular narrative of the visit he made to various places at various times, but arranges all the information he has collected along a route supposed to occupy ninety-two days. In this way a large tract of ground is gone over systematically, commencing at Sevastopol, visiting the surrounding district, coasting and touching at several places in the Crimea, crossing over to Circassia, coasting south to Poti, and penetrating through Mingrelia, Imeritia, and Georgia, south to Mount Ararat, and as far north as the country of the Ossety and the Swannety. Although no doubt many travellers pass through these countries, yet they have really been little explored, and in

Commander Telfer's work will be found much information that, we are sure, will be new to the majority of readers. His account of the Swannety, especially, a curious mongrel, half savage people, to the north of Mingrelia, will be somewhat of a surprise to many. But the author has trusted not only to his own observations; he has taken evidently great pains to make himself master of all that is known of the history and antiquities of the region to which his work refers. This information he judiciously mixes up with his own observations, and the result is a work which may be regarded as a standard book of reference for the extremely interesting districts to which it refers. With its two good maps and its many illustrations, and its substantial and attractively put together information, it ought to take a prominent place among works of travel.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

The Basking Shark

IN NATURE, vol. xiv. p. 313, Prof. E. Perceval Wright gives some account of the Basking Shark, with especial reference to the curious pectinated appendages which lie along the branchial arches of that huge fish. His paper is illustrated by a characteristic woodcut from a drawing by Prof. Steenstrup, who had recently described these appendages, and who finds that they were alluded to by Bishop Gunnerus, about 100 years ago. Prof. Wright also gives a very interesting original figure of one of the branchial arches with the appendages attached.

Prof. Wright's notice will be welcomed as a further contribution to the history of a very remarkable and little-known structure. In one point, however, his description will need correction, for he speaks of the appendages in question as composed of a whalebone-like substance. They are nevertheless essentially different from whalebone, and were it not for their whalebone-like colour and for their pectinated arrangement, somewhat like that of the balene-plates of a whale, their comparison with whalebone would scarcely have suggested itself. Though elastic, they are hard and brittle, and when bent beyond a very limited angle, they snap like a plate of steel.

In consequence of the rarity of the opportunities afforded to anatomists for the examination of the Basking Shark, the pectinated appendages have hitherto received but little of the notice which is due to such a singular anatomical character, and the readers of Dr. Wright's communication might easily believe that since the days of Bishop Gunnerus no one but Prof. Steenstrup and himself had called attention to their existence.

It is now more than thirty years ago that in a communication to the Dublin Natural History Society I placed on record the capture of a Basking Shark on the south coast of Ireland and described the pectinated appendages as fully as the mutilated state of the specimen would allow. Since then I have in vain watched for an opportunity of further investigating the anatomy of the great shark.

The following is the abstract of this communication, published at the time in *Saunders's Newsletter*, which was then the vehicle for the proceedings of the Society. It contains perhaps little which has not been since noticed by Prof. Steenstrup and Prof. Wright, but I may nevertheless be permitted to quote it in order to show that the subject has not been so entirely ignored as the readers of Dr. Wright's paper might suppose:—

"A paper was read by Mr. Allman upon the recent occurrence on the Irish coast of the great Basking Shark, *Selachus maximus*, Cuv. This fish had been entangled in the trammels of the fishermen, and towed into the strand at Coolmain, on the southern coast of the county of Cork, when it was almost immediately cut in pieces by the country people with the expectation of obtaining oil from it. . . . The principal object of Mr. Allman's communication was to notice an interesting fact in the anatomy of this fish, which had not been hitherto described. The fact alluded to was the existence along each of the branchial arches of a very curious and beautiful pectinated structure consisting of a series of narrow elastic laminae arranged with great

regularity, and constituting along each gill a kind of grating bearing a close resemblance to the teeth of a comb. The laminae of which this grating is composed become gradually narrower from their fixed to their free extremities; they are of a dark olive colour, of a hard texture, and highly elastic, but at the same time brittle, and easily snapping off when urged beyond a certain point.

"The office which Mr. Allman assigned to these branchial appendages was that of strainers, by which the water before coming in contact with the branchiae is freed from extraneous bodies, which would otherwise interfere with the functions of respiration. The objection which might be urged to this view, namely, that the other sharks are without any such arrangement appeared to him of no weight, as we know but little of the habits of the Basking Shark, and as those which we do know would lead us to believe that the structure just described is admirably adapted to the fish's peculiar mode of life. The Basking Shark must be entirely free from the voracious disposition so characteristic of the allied genera. Its teeth are little more than tubercles, and quite unfit it for the life of carnage led by other sharks. Its food must accordingly be found among the less resisting inhabitants of the ocean; and as the Basking Shark will therefore be driven to feed near the bottom and among seaweeds the existence of the branchial appendages will admit of an easy explanation. We must thus at once perceive the admirable adaptation of this interesting arrangement to the habits of an animal which would otherwise be subjected to the constant annoyance of having its branchiae clogged with the floating fronds of sea-weeds, a circumstance which the anatomical structure alone would otherwise render more liable to occur in this than in the other sharks, as the openings to the branchiae in the *Selachus maximus* are of enormous size, and the branchiostegous membranes particularly loose."

GEO. J. ALLMAN

The Birds of Kerguelen Island

"My attention has been called to a review of Dr. Kidder's "Report on the Ornithology of Kerguelen Island," in *NATURE* of the 10th instant (p. 317, *supra*). Will you kindly permit me to express regret that the reviewer should have alluded to priority of publication of the results of the American and English expeditions to that island? To many persons his remarks on this point will appear to be ungenerous and needlessly sarcastic to the foreign naturalists. The subject is a delicate one, and I am sorry to have occasion to mention it, especially as an Englishman should be the last to approach it.

The reviewer will doubtless admit that when three naturalists are simultaneously sent to work independently of one another in the same neighbourhood, it is almost inevitable that one will anticipate the work of the others, and yet that there is nothing to boast of if he does. In the present instance, being bound to regard the interests of my employers in my collection, I hastened the issue of preliminary diagnoses of the novelties contained in it, to secure their types from alienation to foreign museums. The result of this was the acquisition by the English of the types of all the new species in my collection excepting those of one bird (which has recently been described as new by the Germans), and those of two Annelids, and three lichens, and perhaps a moss pre-occupied by the Americans. We could well have afforded to lose nine or ten times as many, and should still have retained a fair proportion of the whole number for English museums. The reviewer, therefore, might have done well if he had censured the rapacity of the English in grasping the lion's share of the type-specimens; but it was rather too bad of him to attribute to my fellow-workers small feelings of jealousy with reference to the Americans being the first in the field with their final reports, of which they are not conscious. The Americans have kept us fully informed as to the progress of their reports during the period of their preparation, by letter and by the transmission of advance sheets; and the English final reports will no doubt be ready at the time appointed by the Royal Society. If the Germans publish their results in the meanwhile, we shall have the advantage of including references to their work among our citations.

The reviewer is perhaps unaware of the publication of another Bulletin by the Americans, containing, amongst other information relating to Kerguelen Island, further ornithological particulars. It was issued more than a month ago.

A. E. EATON

Naturalist accompanying the English
Transit of Venus Expedition to
Kerguelen Island in 1874

Aug. 24

Antedated Books

I AM ready to give the Editor of the Zoological Society's *Transactions* credit for desiring to set a good and not a bad example; but, since a man seldom thinks that which he does to be wrong, the simple assertion of his opinion that it is the former and not the latter is not enough. Whether the papers in those *Transactions* are antedated by one month (as he admits) or by several months is merely a matter of detail. The practice of antedating is equally faulty in principle. If their editor would add the correct date of publication on the covers of the several parts, as is done with the *Proceedings* of the Royal and the *Journal* of the Linnean Society, he might give whatever date he pleases anywhere else as that of his latest revision.

ANOTHER F.Z.S.

Earthquake in Nithsdale, Scotland

ON the morning of the 12th current, at 3 o'clock, Mr. Robson, of the schoolhouse of Penpont, Dumfriesshire, was awakened by a sharp shock of earthquake and heard its detonations. On inquiry the same shock had been felt at the schoolhouse of Tynron, by Mr. Laurie; and over an area of several parishes around the upper course of the Nith the shock was felt, causing walls to vibrate and cupboard dishes to tingle. Two concussions of less violence were felt between 11 and 12 o'clock on the previous evening. The morning papers of the 14th report that a severe shock of earthquake had been felt at Athens on the morning of the 12th. It would be interesting to know the exact time when the shock was felt in Greece. On April 16th, 1873, at 9.55 P.M., a similar shock to that experienced last week was felt in the same districts of Nithsdale. I recollect communicating a short notice of it to *NATURE* at the time, as I had heard the strange sound, but on this occasion I did not hear it.

Tynron Schoolhouse, Aug. 23

JAMES SHAW

P.S.—Since writing the above I have received confirmation of the event from several other reliable witnesses. It seems to have been most plainly felt in the parishes of Morton, Penpont, Keir, Tynron, and Glencairn, to the west of the Nith. J. S.

The Cuckoo

THE usual manner in which the cuckoo in June "alters his tune," is by doubling his first syllable, and the "cuc-cuckoo, cuc-cuckoo" is then usually, if not always, followed by the single "cuc." This is certainly the case both near London and in the Midlands.

E. H.

ABSTRACT REPORT TO "NATURE" ON EXPERIMENTATION ON ANIMALS FOR THE ADVANCE OF PRACTICAL MEDICINE¹

VII.

THERE occur to me a few other illustrative series of researches, in which scientific and practical medicine have been advanced by experimentation on the lower animals. Some of these I will state in terms as brief as possible in the present paper.

Experimentation in respect to the Disease called Cataract.

Dr. Weir Mitchell, of Philadelphia, in the year 1869, made the original and remarkable observation that if a part of the body of a frog be immersed in simple syrup, there soon occurs in the crystalline lens of the eyeball an opaque appearance resembling the disease called cataract. He extended his observations to the effects of grape sugar, and obtained the same results. He found that he could induce the cataractic condition invariably by this experiment, or by injecting a solution of sugar with a fine needle, subcutaneously, into the dorsal sac of the frog. The discovery was one of singular importance in the history of medical science, and explained immediately a number of obscure phenomena. The co-existence of the two diseases, diabetes and cataract, in man, had been observed by France, Cohen, Hasner, Mackenzie, Duncan, von Graafe, and others, and von Graafe had stated that after examining a large number of diabetic patients in different hospitals, he had found one-fourth affected with cataract. Before Mitchell's observation there was not

¹ Continued from p. 347.