

account as would warrant its use as a class text-book. By means of the first five chapters a reader who knows a little about the elements of electricity and magnetism will be able to appreciate the nature of electric waves and of Hertz's achievement in producing them. Then, after briefly alluding to the early system of Marconi, the writer passes on to the particular devices of Dr. Braun. The book is well and clearly written, but is in no sense a complete compendium on the subject, and the reader who derives all his knowledge from it will be inclined to think that there is only one system in the world, and that Eichhorn is its prophet. More recent methods of detecting waves by means of effects arising from hysteresis in iron are dismissed in a couple of pages, where there is no reference to Rutherford's early detector working on the same principle, while Lodge's steel-mercury-contact detector does not appear even to be mentioned, although the "Literature" appendix at the end includes the year 1903. In appendix ii. the Thomson-Kirchhoff theory of the oscillatory discharge of a condenser is given; the credit, of course, belongs to Thomson (Lord Kelvin).

*Notes on the Natural History of the Bell Rock.* By J. M. Campbell. Pp. xv+112; title-piece. (Edinburgh: David Douglas, 1904.) Price 3s. 6d. net.

As a record of the various types of aerial and marine life commonly seen by the guardians of the lonely lighthouses of the east coast of Scotland in particular, and of the British coasts in general, these random notes are worthy of all commendation, more especially as they are written by a man who does not appear to have had a scientific training. Mr. Campbell was assistant light-keeper on the Bell Rock for the long period of nine years, and he is therefore well qualified to know all that is to be known with regard to the general habits of the commoner and more conspicuous species frequenting the environment of his station; while a period of such a length is sufficient to include the visits of many of the rarer stragglers. Most or all of the notes, it appears, have been previously published in the local Press of the neighbouring mainland, and they are certainly worthy of rescue from such oblivion. The only point for regret is, perhaps, that the author does not say more about bird migration. Mr. James Murdoch, late secretary to the Board of Northern Lighthouses, has contributed an interesting introduction on lighthouses and lighthouse-men in general.

R. L.

*The British Journal Photographic Almanac, 1905.* Edited by Thomas Bedding. Pp. 1612. (London: Henry Greenwood and Co., 1904.) Price 1s. 6d. net.

THIS bulky volume, with its mine of miscellaneous photographic information, is compiled on the same lines as the earlier issues, and will be found to be a necessary adjunct to the studio and library. Among the host of articles in these pages may be mentioned a condensed summary of the story of the *British Journal of Photography* and the almanac which appeared in the jubilee number of the above mentioned journal, and also a selected number of the jubilee articles. Recent novelties in apparatus, &c., by the editor, forms also a conspicuous feature, and represents the progress in this branch of photography. No less important are the practical notes on numerous subjects, the formulæ, tables, list of photographic societies of the United Kingdom, &c., all of which add to the utility of the volume. The full indices to advertisers and contents make a quick reference to any portion of the book quite an easy matter, an important consideration in a book containing 1612 pages. The processed illustrations and woodcuts are as numerous as ever.

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LETTERS TO THE EDITOR.

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Mean Temperatures of High Southern Latitudes.

ON p. 131 of NATURE of December 8, 1904, you give an approximate calculation of the mean temperatures of high southern latitudes, by Mr. Krebs, based upon the observations of the most recent Antarctic expeditions.

For the new edition of my "Lehrbuch der Meteorologie" I have made a similar calculation, and have made use of the observations in order to calculate afresh the mean temperature of the southern hemisphere. My preliminary results are as follows:—

S. latitude	... ..	50°	... ..	60°	... ..	70°	... ..	80°
Yearly temperature	... ..	5.5	... ..	-2.0	... ..	-11.5	... ..	-19.8 C.
January	... ..	8.3	... ..	3.2	... ..	0.8	... ..	-6.5 "
July	... ..	2.9	... ..	-7.6	... ..	-22.2	... ..	-31.5 "

Mean temperature of both hemispheres:—

	January	July	Year	Annual variation
S. hemisphere	... 17.3	... 10.3	... 13.6	... 7.0 C.
N. "	... 8.0	... 22.5	... 15.2	... 14.5 "
Whole earth	... 12.6	... 16.4	... 14.4	... 3.8 "

Ferrel and myself formerly determined the mean temperature of the southern hemisphere to be 15° C. (from temperatures up to 55° S. lat.). The new observations in high southern latitudes have now shown that the southern hemisphere is considerably colder than the northern, viz. by about 1.5° C. The publication of the temperature observations of the *Discovery's* second year will be very important for this question; in my calculations I could only make use of the observations relating to the first year.

Vienna, December 30, 1904.

JULIUS HANN.

Reversal of Charge from Electrical Induction Machines.

LAST week, while working with a small Voss machine, I accidentally observed, on stopping the machine, giving about two turns in the wrong direction and then re-starting the machine in the original direction, that the poles had reversed. I repeated the experiment a dozen times, and invariably the reversal occurred. The reversal was observed by examining the spark between the knobs.

I mentioned the fact to Prof. Gray, and we then tried the effect with a vacuum discharge tube connected to the knobs. While the tube was fresh the reversal occurred, but after a little time the reversal occurred but seldom. It was found, however, that if the discharge was made to pass by connecting one terminal of the tube to earth, the other terminal to one pole of the machine, while the second pole of the machine was kept insulated, then the reversal invariably occurred when the procedure mentioned was followed.

We next tried the large Wimshurst machine in the laboratory with the same results. It was noticed, however, when the induction rods were so arranged that the machine excited both ways, that the reversal did not occur.

As I do not remember to have seen the experiment mentioned before, I think it worth directing attention to, as it provides a simple way of getting the discharge to pass in whatever direction it is required.

GEORGE W. WALKER.

Physical Laboratory, The University, Glasgow.

Fishing at Night.

THERE are, as I have explained in the book referred to by "S. W." in NATURE of December 29, 1904 (p. 201), many reasons for night-fishing by our pilchard and other fishing fleets. He quotes one, however, which is quite unsatisfactory, namely, the convenience of catching the morning