

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.

[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 intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

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

market. To a few ports this might apply, but as a general rule the fish-train for Billingsgate leaves the coast towns about six or seven in the evening, the fish reaching the central market by van first thing in the morning. The actual reasons for this preference for night-fishing are many. In the case of pilchards taken in drift-nets, the habits of the fish themselves furnish the explanation. In the case of trawlers, the reasons are diverse. In some cases the water is so shallow that the nets would be seen and avoided by the fish in daylight, and this, in fact, is still more the case with the drift-nets. Elsewhere, they trawl at night because they want soles, just as many Plymouth boats trawl by day because their best market is for the rougher kinds of fish. There is no night-trawling in Cornwall by reason of the local regulations, which clear the sea by night of other fishing craft in order that the drifters may work without interruption or risk. F. G. AFLALO.

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The Cost of Chemical Synthesis.

IN your review of Prof. Meldola's "Synthesis of Vital Products," your reviewer argues that though certain products, viz. alizarin and indigo, "can be synthesised so cheaply that natural products cannot compete with them in the market"; yet this is of little interest from the biochemical point of view.

May I point out that this argument is even stronger than it seems, for the cheapness is quite accidental, and due to the fact that the world requires coal gas, and iron.

If the syntheses above were dependent on anthracene and naphthalene obtained from coal treated strictly *ad hoc* this cheapness would disappear. R. J. FRISWELL.

43-45 Great Tower Street, London, E.C., January 2.

"Bastard" Logwood.

THE Jamaica *Bulletin* of the Department of Agriculture for November, 1904, prints a very interesting article on this subject by B. C. Gruenberg and William Gies, contributed originally to the *Bulletin* of the Torrey Botanical Club.

During the past few years the growers of logwood in Jamaica have been greatly disturbed by an apparent increase on their properties of an unmerchantable variety of the plant known as "bastard" logwood; the exportation of this wood along with real logwood has served to condemn all the logwood from the districts which have shipped it.

"Bastard" logwood differs from the genuine varieties, from the dyer's standpoint, in yielding little or no hæmatoxylin, but instead a yellowish-green pigment which is of no value, and which, when mixed with the commercial extract, reduces the characteristic tinctorial properties. Chips of the "bastard" logwood present a yellow, pale pink, white, or even chocolate coloured surface, instead of the dark red or deep purple bronze-tinted colour of the best logwood. There appears great uncertainty, even when the trees are cut down, as to whether a tree is really a "bastard" tree or not. What is known as a "bastard" tree is frequently dark enough when first cut to lead one to believe that it is a good red-wood tree, but instead of darkening with age it remains the same colour, or becomes lighter rather than darker. "Bastard" wood is not the result of disease or of any lack of vigour; the trees producing it are perfectly healthy and normal.

It is not the result of soil or climatic conditions, since bastard and normal trees are found growing side by side under absolutely identical conditions.

It is not the result of immaturity; aged trees may produce bastard wood.

These facts point to heredity as the probable cause of the trouble, that is, certain trees produce "bastard" wood because they grow from seed of a "bastard" tree; in other words, "bastard" logwood is a variety of *Haematoxylin Campechianum*, that normally produces little or no hæmatoxylin. The chemical differences existing among all these logwoods are quantitatively very slight,

and there are no striking structural differences among all the varieties of logwood.

There can be no doubt that "bastard" logwood is a distinct variety or subspecies of *Haematoxylin Campechianum*, notwithstanding the slight morphological difference that distinguishes it from the "red" logwood and blue logwood.

The Jamaica *Bulletin* has done good service to the colony in bringing the fact prominently before the planters that the admixture of useless wood which has been the source of unnecessary loss to them may be avoided.

S. N. C.

Intelligence of Animals.

THE instance of intelligence in a cat recorded by Mr. T. S. Patterson on p. 201 is not unusual. I have known several cats, all of them males, that were accustomed to rattle the handle or some part of the lock in order to get a door opened.

F. J. ALLEN.

A NEW CONTRIBUTION TO ASSYRIAN HISTORY.¹

IN a handy little volume, to which we have much pleasure in directing the attention of our readers, Mr. L. W. King, of the British Museum, has published the cuneiform text and a translation of a very important historical Assyrian document, which has been recently exhibited in the Assyrian and Babylonian room in the British Museum. This document is a slab of limestone, about 15½ inches long and 11½ inches wide, which is inscribed with sixty-seven lines of cuneiform text, thirty-seven lines being on the obverse and thirty on the reverse. The writing is in bold, well formed characters, but it seems to have been cut somewhat hurriedly, for the mason was obliged to make nine erasures, and in two passages he has left out a sign, apparently without having detected the omission. We need not discuss the palæographical importance of the text, which is of considerable interest, and it is only necessary to state that it exhibits the style of Assyrian characters employed in monumental inscriptions in the early part of the thirteenth century before Christ.

The contents of the text, which is actually the official summary of the principal events in the reign of Tukulti-Ninib I., King of Assyria about B.C. 1275, fall readily into four divisions, which respectively record the king's name and titles, his military expeditions, the foundation of the city Kar Tukulti-Ninib, and an appeal to future rulers. The stone tablet or slab which supplies this information was either placed in a niche in the wall or laid in a box of stone or clay, and then built up in the foundation of the city Kar Tukulti-Ninib. In passing, Mr. King discusses briefly but clearly the question of foundation deposits, both in Egypt and Assyria, and shows how the ideas concerning them in the two countries agree in some respects and differ in others.

Turning now to the campaigns of Tukulti-Ninib I., we find that in the first he conquered the Kutu and the inhabitants of four other districts; in the second he became master of the land of Shubari, and ten other provinces; in the third he vanquished forty kings of the land of Na'iri; and in the fourth he defeated Bibeashu, King of Babylon, and completely subjugated the regions of Sumer and Accad. The last campaign was undoubtedly the most important of all, for with

¹ "Records of the Reign of Tukulti-Ninib I., King of Assyria, about B.C. 1275." By L. W. King, M.A., F.S.A. Pp. xvi+185, and 11 illustrations. (London: Luzac and Co., 1904.) Price 6s. net.