

special branch of the subject would have had a guide to full and intelligible records of detail. Such references are nowhere given. The book is worth the extra clerical work that their insertion would have involved; but as it stands it is of little use to any one. Who, for instance, is helped by this brief paragraph on p. 64?—"Concentration of sea-water.—The process is employed in some northern salt-works, and is more economical than concentration by heat."

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.]

Movement of Sea-Gulls with a Coming Change of Weather.

IN your issue of September 7, p. 439, I read with some interest the note by Prince Kropotkin on the movements of sea-gulls upon our coasts having some connection with a coming change of weather; and that at Margate on Saturday, August 26, it was noticed such a movement was going on, the gulls passing from west of that place to the south coast, to meet, as the fishermen say, a south-west wind. It may be of interest, and as in a measure confirmatory of such a movement going on just before a marked change of weather conditions, that on Sunday evening at 5.30 o'clock six large sea-gulls passed over this place, 400 feet above the sea (situated $2\frac{1}{2}$ miles due east of Cranleigh), flying in a direction south-west by south. We very seldom see gulls so far inland, but I have seen them before flying in much the same course. The direction in which these were heading would have taken them to the coast near Portsmouth, distant about thirty-five miles; and at the elevation at which they were flying, the English Channel was no doubt visible to them, for the South Downs were at the time particularly clear.

H. H. GODWIN-AUSTEN.

Nore, Hascombe, Godalming, September 12.

Thermometric Scales for Meteorological Use.

As Mr. Buchanan has called attention to the advantages of the Fahrenheit thermometric scale as compared with the Centigrade, I will state that at the Blue Hill Meteorological Observatory, while the metric system has been adopted for research work the Fahrenheit thermometer has been retained. The chief reason is the same as that given by Mr. Buchanan, namely, the occurrence of the zero in such a place as to make nearly half the readings below zero. The reading of the scale first upward and then downward is awkward, and the averaging of the results troublesome, besides making in each case a source of error. If the Centigrade thermometer is ever adopted by the English-speaking nations, I would suggest that, at least for meteorological uses, the freezing point of water be marked 273° on the scale, and the boiling point 373° . This would give meteorologists at once the temperatures which are concerned in the change of volume of gases, and embodied in a large number of the formulas used in meteorological work. At the same time it would for ever get rid of the troublesome inverted scale. In printing the results, 200 could be put at the top of the printed column, and the excess over 200 be printed at its proper place in the column. In this way most of the observed temperatures could be expressed in whole degrees by two figures as at present.

The metric system will soon be adopted, I trust, by all the English-speaking peoples. Besides the advantages of the relations of all the different portions of the system to each other, and the ease of converting smaller measures into fractions of larger measures of the same kind, every one must recognise the advantage of having one uniform system of measurement throughout the world. Almost every civilised nation except those speaking English have now adopted the metric system, and I cannot believe the English will long hold aloof.

H. HELM CLAYTON.

Blue Hill Meteorological Observatory, September 5.

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THE NEW LUNAR PHOTOGRAPHIC ATLAS

M. LÆWY and Puiseux have recently communicated to the Paris Academy of Sciences¹ continuations of their valuable descriptions of the unequalled lunar photographs they are now obtaining by means of the large Equatorial Coudé. As in the case of the three Parts of the Atlas already published, they accompany their descriptions with a discussion of the bearings of the new results obtained on the general questions of selenology. We have on previous occasions given an account of Parts i.,² ii.,³ and iii.,⁴ and we now give a full translation of the recent communications.

The first, which deals with the description of the photographs contained in the fourth Part, runs as follows:—

The fourth Part comprises, like the preceding ones, a positive on the scale of the original negative, and six enlargements on different scales. All these photographs, except one, deal with the waning moon, and for the first time we see the eastern edge illuminated to a certain extent. We propose to briefly indicate the most striking characteristics of the regions represented.

Plate *d* is a general photograph, in which nearly two-thirds of the visible hemisphere is illuminated, and distinguishes itself at first sight from similar positives already published. Here the work of reproduction has been directed in such a manner as to give, as far as possible, the details contained in the most brilliant parts of the lunar disc. But we also establish an intrinsic difference between the eastern and western halves of the moon, so far as the distribution of mountains and plains is concerned. Up to now we have seen the seas presenting themselves like a chain of circular basins, occupying only a zone of ordinary size on both sides of a great circle; they now take a sudden and considerable development in the direction of latitude. It appears that a large depression encountered the first, like the Atlantic Ocean across the Mediterranean deeps of our globe. These depressed parts, generally of sombre colour, are not of a uniform shade, and the darkest spots accumulate near the mountainous border. There is cause to consider these regions as more depressed than the neighbouring parts of the seas, and their distribution, as they are indicated in Plates *b* and *d*, is in accordance with what we know of the ways of the submarine depths on the terrestrial globe.

We have already noted, with regard to the third Part, the white borders which encircle Kepler and Copernicus, and which prolong themselves in different directions in long rectilinear streams. We find them here again illuminated more normally, and detaching themselves in consequence in a clearer manner. The systems of Euclid, Aristarchus, Olbers, Byrgius and Tycho, equally visible on Plate *d*, appear to us to be, like the first, depositories of volcanic cinders, carried to great heights by violent eruptions and disseminated by variable atmospheric currents. They imply with no less clearness different periods of activity, separated by intervals of repose. All the walled plains which serve as origin to a collection of such trails show under an oblique illumination a fairly equal uniform wall of some altitude. So soon as the sun has risen a little on their horizon, they shine with an intense whiteness, sometimes accentuated by the presence of a dark areola at the source of the trails. The great dimensions of Copernicus reveal other interesting facts; thus we see that the white tint is far from being equally distributed on the whole length of the walled plain, that the diameter of this surpasses by a great deal the length of the trails, and

¹ *Comptes rendus*, June 26 and July 3.

² NATURE, vol. lii. p. 436, 1895.

³ *Ibid.*, vol. lvi. p. 280, 1897.

⁴ *Ibid.*, vol. lix. p. 304, 1899.