water strong enough to lift the particles of rock without agitating them enough to overcome the surface tension of the water. Here, again, as has been noted by other observers, the fine particles appear to gather about the larger ones and help to support them.

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DIURNAL RANGE OF TEMPERATURES.

TO THE EDITOR OF SCIENCE: In the last issue of SCIENCE, page 872, attention is called by Professor R. DeC. Ward to a remarkable diurnal range of temperature. Nothing is said about the elevation or other conditions of the point of observation, but the article calls to mind my own experiences near the summit of Mauna Kea, on the Island of Hawaii. We were in camp on the shore of Lake Waiau nearly a week in July, 1892. The elevation was slightly over 13,000 feet—2000 feet above the last limit of vegetation, and about 1000 feet below the summit. The thermometer, always occupying the same position, read 13° F. at night and 108° in the daytime.

E. D. PRESTON.

EOGÆA AND ANTARCTICA.

TO THE EDITOR OF SCIENCE: At last I send an abstract of my remarks 'On the zoo-geographical relations of Africa,' given at the last session of the National Academy of Sciences. I have been obliged to omit some points for want of time. As I find that some of my views long ago promulgated have been overlooked, or are being taken up now as new and attributed to others, I take this opportunity to refer to several articles, including especially such as have been published in SCIENCE:

1. 'On the Geographical Distribution of Fishes.' (*Ann. Mag. Nat. Hist.* (4), XV., 251–255, April, 1875.)

2. 'Fish.' (Johnson's New Univ. Cyclopædia, II., 116–119, 1876.)

3. Wallace's 'Geographical Distribution of Animals.' [A Review.] (*The Nation*, XXIV., 27, 28; 42, 43, July 12 and 19, 1877; reprinted (*Field and Forest*, III.), 69–74: 78–80; 98–101, 1877.)

4. 'Zoological Geography.' (Johnson's New Univ. Cyclopædia, IV., 1754–1760, 1878.)

5. 'The Principles of Zoogeography.' A presidential address, etc. (*Proc. Bio. Soc. Wash.*, II., 1–39, 1883.)

6. 'A Comparison of Antipodal Faunas.' (*Nat. Acad. Sc. Memoirs*, VI., 89–124, 1894.)

7. 'A Text-book of Zoo-geography.' By Frank E. Beddard. [A Review.] (SCIENCE, N. S., II., 272–274, August 30, 1895; Corrections, 342, Sept. 13, 1895.)

8. 'The Early Segregation of Fresh-Water Types.' (SCIENCE, N. S., II., 678, 679, Nov. 22, 1895.)

9. 'The Origin and Relations of the Floras and Faunas of the Antarctic and Adjacent Regions.' (SCIENCE, N. S., III., 305–320, February 28, 1896.)—'Vertebrata of the Land: Fishes, Batrachia and Reptiles.' (*Op. cit.*, 314–317.) 'Vertebrata of the Sea.' (*Op. cit.*, 319–320).

10. 'Principles of Marine Zoo-geography.' (SCIENCE, N. S., III., 514–516, April 3, 1396.)

11. 'The Distribution of Marine Mammals.' (SCIENCE, N. S., V., 955, 956, June 18, 1897.)

THEO. GILL.
WASHINGTON, May 28, 1900.

NOTES ON PHYSICS.

THE ABSORPTION OF LIGHT IN A RAREFIED GAS AND THE SUN'S CORONA.

MATHIAS CANTOR in the *Annalen der Physik* for March, 1900, describes an experiment showing that a rarefied gas through which an electric discharge is passing has no perceptible absorption spectrum corresponding to its emission spectrum, and Professor G. F. Fitz Gerald in *Nature* May 3, 1900, remarks that this fact confirms the suggestion that the sun's corona is an aurora around the sun (an electrical discharge phenomenon) inasmuch as the bright spectrum line of the corona is not represented by a dark line in the solar spectrum.

The absence of an absorption spectrum corresponding to the emission spectrum of a rarefied gas through which an electric discharge is passing is very likely due to very great concentration of kinetic energy, among a few types of the molecular motion of the gas so that in regard to its emission the gas is potentially at an excessively high temperature.