the paper already quoted, there should, of course, be ether pulses in the X-ray stream, and the γ stream also for that matter, and it may possibly be these which have been the subject of experiment by Marx, and which show Mr. Barkla's polarisation effects. But I think it is certain that at least the γ rays are material, and those X-rays which give rise to a secondary kathode radiation of a speed due to a few thousand volts.

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December 12, 1907.

Drifted Ice-crystals.

THE accompanying photographs, showing the incipient freezing of the sea during severe frost on January 4 at

FIG. 1.—Bank of drifted Ice-crystals.

Littlehampton, may be of interest to readers of NATURE. They were taken about high water, at 11 a.m. A high

FIG. 2.—Layer of drifted Ice-crystals.

N.E. wind and the flowing tide had drifted ice-crystals formed on the surface of the sea into the slack water in

the angle between the east side of the small pier and the shore, until they were collected in a viscous layer covering the whole angle. The layer seemed to be more than an inch thick.

The photographs show the border of ice-crystals thrown up on the beach, with a vertical front towards the sea about 18 inches high.

The effect disappeared rapidly when the tide began to fall. The timbers of the pier were thickly coated with ice at high-water mark, and as far above as the splashing reached, but remained perfectly clear below this line.

WALTER LEAF.

The Interpretation of Mendelian Phenomena.

DR. G. ARCHDALL REID has recently suggested (1) that Mendelian phenomena occur only under artificial conditions, and (2) that they are to be explained in terms, not of segregation, but of "latency" and "patency." As regards the latter contention, it appears to me that it would be justified if, in the case of experiments conducted under stringent conditions, dominant characteristics were, even occasionally, to appear in recessive generations or *vice versa*; but if this is not the case it seems an abuse of language to describe a thing as "latent" which never gives any manifestation of its existence. Further, Dr. Reid's theory does not explain—as the Mendelian theory does—why these characteristics not only appear and disappear, but play this game of hide-and-seek in accordance with strict numerical rules.

As to the other point, that Mendelian phenomena are confined to cultivated varieties, it is extremely difficult to prove or disprove, because to ascertain the phenomena you must experiment, and to experiment is to place under artificial conditions. But the well-ascertained facts of conjugation and cell-mitosis, which Mr. R. H. Lock regards as affording considerable support to the doctrine of gametic purity, are certainly not confined to cultivated varieties. That all inheritance may be particulate was long ago suspected by Galton, who speaks of skin colour as possibly "a fine mosaic too minute for its elements to be distinguished in a general view" ("Natural Inheritance," p. 12).

May I suggest one line of inquiry that may possibly prove fruitful in competent hands? Is there any connection between the variability of a plant or animal and the number or size of its chromosomes? Man, for example, has a large number of chromosomes, and is extremely variable. The correspondence would no doubt be far from exact if we suppose with Mr. Lock that the biological units are not the chromosomes themselves, but the chromomeres or some even minuter subdivisions. But it might be assumed, at any rate as a first approximation, that the ultimate units were roughly proportional to the number and size of the chromosomes, and in that case species possessing many and large chromosomes would be likely to have a larger stock of the raw material of variation than their fellows.

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December 30, 1907.

Musical Sands.

IN reply to Prof. Poynting's letter (NATURE, January 16), may I say that the article which appeared in NATURE (August 6, 1901) was only intended to supplement my paper of 1888, by recording the results of further investigations up to date, and to show that I claimed, both by analytical and synthetical methods, to have proved the theory previously dealt with in detail?

In that paper (1888) I rejected the conception that the notes emitted from musical sands were due to the vibra-