

apparently penetrates with good effect into every room in the house; unfortunately the flue in the entrance hall is one which has a persistent down draught, and we are unable to warm the air in the hall and passages.

There appears to be no rule without exception for automatic ventilation; in one room we have Tobin's ventilators, the opening on the outside facing direct north; these have to be closed always when the room is occupied, as the cold air, after rising a short distance, descends on the heads of the occupants. In another room are four similar shafts built in the wall, the bottom inlets facing west; these shafts are always left full open in the severest weather, the draught being usually downwards and outwards; but why this occurs I cannot form the remotest conception, unless eddies are caused by an adjoining building. There is no doubt that external conditions affect the practical ventilation of any building, and no absolute rules are applicable in every case alike.

THOS. FLETCHER

Warrington

Rain at Smyrna

THE telegraph has informed us of a heavy fall of rain at Smyrna on Wednesday, November 25, but few particulars have yet reached us, except some from Capt. Stabb, Corr. Mem. Soc. of Arts. The storm began at six in the morning, and in a few hours 6 inches were registered. When the quay, or embankment, was proposed some years ago, in conjunction with the Council of Public Works I endeavoured to provide an efficient outfall sewer underneath it, but we were defeated by local intrigue. The drainage of Smyrna is worse than in the time of Strabo, by the large additions taken in from the shelving bay. The torrents pouring down from Mount Pagus (the Castle Hill) came through the Turkish quarter, causing the fall of some twenty houses, and washing bodies out of the Turkish and Jewish graveyards. On reaching the lower streets the sewers ceased to act, and cellars, stores, and warehouses were flooded, causing a loss of 50,000*l.* worth of opium, cotton, valonia, and other merchandise, and much damage to private houses. The River Meles overflowed its shallow bed, and reached the Point Railway Station, destroying some market gardens. In the suburb of Bournabat two houses were brought down, and the Cassaba railway embankment was damaged. The storm seems not to have reached beyond Manisa (Magnesia ad Sipylum), over Mount Sipylus, on one side, and Turbalu, beyond the Smyrna plain, on the other. No such inundation has taken place within memory.

HYDE CLARKE

The Sea-Mills at Argostoli

WITH reference to the inquiry of your correspondent, Surgeon Lloyd Thomas, in your issue of the 10th instant (p. 129), there is a short paper on this subject by Capt. H. P. Shilston, entitled "On Curious Natural Phenomena in Cephalonia," to be found in the *Transactions of the Liverpool Geological Association*, vol. i. (Liverpool: Henry Young, 1881). The writer describes the inflow of water to the land through crevices in the limestone, as observed by him, and gives an explanation by Prof. Ansted, M.A., F.R.S., who considers that the phenomenon arises from the large amount of evaporation, within range of the district, by which the level of the subterranean stores of water is kept constantly below the level of the sea, notwithstanding the joint supply of rain- and sea-water.

O. W. J.

Liverpool, December 12

IN answer to the question of Mr. J. Lloyd Thomas in the last number of your valuable paper (p. 129) respecting the sea-mills of Argostoli, we beg to inform you that we have published, "Die Insel Kephallonia und die Meermühlen von Argostoli, Versuch einer Lösung dieses geophysikalischen Räthsels," von Prof. K. W. M. Wiebel, mit 1 Karte, 3 Skizzen und 5 Holzschnitten, 1873.

Hamburg, December 12 L. FRIEDERICHSEN AND CO.

Friction and Molecular Structure

I SHALL feel obliged if you will kindly allow me to ask any reader of NATURE whether moderate friction can so change the molecular structure of glass as to account for the following fact:—Last night, about twenty minutes after a paraffine lamp had been lighted and had been burning steadily, its glass chimney suddenly

burst into small fragments at the exact place at which, about an hour before, I had rubbed it with a piece of brown paper in order to remove soot from the interior. The chimney was thoroughly annealed, having been in constant use for more than three years. The flame was not high; the night was not frosty; the glass was uniformly thin at the place of fracture, which was six inches above the top of the flame, and two inches below the top of the chimney. The part which had not been rubbed is quite uninjured: not even a crack extending into it, while the rubbed part is shattered.

EDWARD GEOGHEGAN

Bardsea, December 1

The Resting Position of Oysters—A Correction

MR. J. T. CUNNINGHAM in his letter of November 28 (p. 129), after showing that *Pecten opercularis* must rest on its right valve, goes on to say:—"Of *Pecten maximus* I cannot speak with certainty, and therefore leave to Mr. Arthur Hunt the responsibility of stating that there is a difference in respect of position in the two species." So far from my having hinted that any species of *Pecten* rests on other than the right valve, my letter, to which Mr. Cunningham refers, concludes with the plain statement, "in each case the mollusk rests on the same valve." The point to be noticed is that in *Pecten maximus* the right valve is most convex, and in *Pecten opercularis* the left valve.

A. R. HUNT

Radiolaria

I HAVE recently had the pleasure of finding, in the London Clay, a number of well-preserved specimens representative of several species of Radiolaria, most of which, I have good reason for thinking, differ from any known fossil or recent forms. It was my intention to submit them to the Geological Society during the present month, but circumstances prevent this being done. The delay may lead to an extension of the list, especially if I am fortunate enough to meet with a microscopist kind enough to assist in the examination of material yet untouched.

W. H. SHRUBSOLE

Sheerness-on-Sea, December 14

THE CONTINUITY OF THE GERM-PLASMA CONSIDERED AS THE BASIS OF A THEORY OF HEREDITY¹

THE thoughts developed in this most interesting and important essay were first expressed in a lecture delivered to students of the University of Jena last winter. They were reduced to writing in the spring, and completed for publication in June. The author received Oscar Hertwig's essay on the "Theory of Inheritance," and Kölliker's "On the importance of the Cell-nuclei for the Processes of Heredity," after his manuscript was complete. In the matter of the extreme importance of the nucleus he agrees with both these authors.

As was stated in reviewing here two years ago Prof. Weismann's memoir "On the Origin of the Sexual Cells of the Hydromedusæ," all his memoirs abound in original views and suggestions, which render them of peculiar and widely-spread interest. The present is no exception to the rule. It is intended in this article to give a kind of abstract of the memoir, composed largely of a series of translated passages: for the fuller development of details, the history of the development of ideas on the subject, and controversial matters, readers are referred to the original, which is an octavo of 122 pages.

"How is it," asks the author in commencement, "that in the case of all higher animals and plants, a single cell is able to separate itself from amongst the millions of most various kinds of which an organism is composed, and by division and complicated differentiation to reconstruct a new individual with marvellous likeness, unchanged in many cases even throughout whole geological periods?" The question is a hard one indeed, and the various attempts which have been made to solve it,

¹ "Die Continuität des Keimplasma's als Grundlage einer Theorie der Vererbung." Von Dr. August Weismann, Professor in Freiburg i. B. (Jena: Verlag von Gustav Fischer, 1885.)