

I should like to see in *NATURE* the views of some scientific men on this matter, both of Britain and America.

The question is certainly of great importance to scientific inquirers in nearly all branches of scientific endeavour, and it is to be hoped abler minds than mine may lay hold of the enterprise.

W. K. MORRISON.

Devonshire, Bermuda Islands, October 15.

Siemens' Domestic Gas Fire.

DR. POLE'S letter on the Siemens' Domestic Fire drew my attention to the inquiry on the subject which Mr. Foster addressed to you in his letter published in *NATURE* of September 17.

I have had one of these fires in my office at the Society of Arts for some years. It was put in under Sir William Siemens' own superintendence, about the time when he described the grate in *NATURE*, so it must have been at the end of 1880 or the beginning of 1881. For a long time I used it with coke in the manner intended by the inventor; but practically I have found it more convenient to use ordinary coal, although it is doubtless less economical.

As Dr. Pole points out, the convenience of having gas ready to be turned on whenever the fire gets low or goes out, is very great; and in cases where a rather wasteful consumption of gas can be prevented, or is not considered of great importance, there can be no doubt but that the fitting of a few gas jets to an ordinary grate is a very great convenience. There is also a good deal of trouble saved in the lighting of the fire, as no paper or wood is required; the grate is simply filled with coal, and the gas turned on and lighted. The fire, I should say, burns up at least as rapidly as when lighted in the ordinary way.

If any of your readers are interested in the question, they are very welcome to see the grate at work whenever they like to call here.

H. T. WOOD.

Society of Arts, John Street, Adelphi, London, W.C.,
November 2.

Diselectrification by Phosphorus.

IN the course of some experiments made a few weeks ago, upon the discharge of electricity by air which had been traversed by X-rays, it occurred to me to try whether similar action would be exerted by air in which phosphorus was being oxidised. I found that a gold-leaf (Dutch metal) electroscope was quickly discharged when a stick of phosphorus was held near it. A small metal crucible was afterwards connected with the electroscope, and a clean slice of phosphorus half an inch in diameter was supported within it at a distance of about half an inch from its sides and bottom. The electroscope was completely discharged in six seconds, the action being more rapid than that of a burning strip of nitrate of lead touch-paper one inch in width.

It might be found convenient to attach a lump of phosphorus instead of a fuse to the nozzle of a water-dropping collector in times of severe frost.

I do not remember to have met with a previous record of this observation. It is of interest in connection with the note on slow oxidation, in *NATURE* of October 29 (p. 631).

SHELFORD BIDWELL.

The Departure of Swallows.

"E. P." mentions in *NATURE* of October 22, a date, somewhere about October 20, I presume, which he considers is an unusual one for swallows. Now, though the bulk of the swallows have left by this time, it is by no means unusual to see them later on in the year. In 1894 I saw swallows in Kent, in the neighbourhood of Tonbridge, on October 20, 21, 25 and 27, and the last one on November 11; it was flitting about a village in a bewildered sort of way, with a crowd of village boys throwing mud and clods of earth at it.

The same year a flock of martins stayed near some buildings from October 28 to November 16; by this time many of them had died of cold.

The latest swallows I have seen this year I saw on October 23, near the same buildings.

J. BROWN.

Tonbridge, Kent.

I BEG to send you the following extracts from my journal respecting the late appearance of the swallows.

1855, December.—It is worthy of record that several swallows

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were seen in this locality towards the end of November and during the first week of this month. I have ascertained that they were seen in other counties at the end of November; it must not be considered, therefore, as a merely local or solitary instance of the late appearance of these birds.

1863, October.—A few swallows were seen flying above the church on the 24th, and again on the 31st.

1867, November.—Some swallows were observed flying about during the last week.

These observations were made at Uckfield.

C. LEBSON PRINCE.

The Observatory, Crowborough Hill, Sussex, October 26.

A Mechanical Problem.

THE mechanical problem proposed by your correspondent, "Cromerite," in the last issue of *NATURE* (October 29), is practically answered by the so-called "jumping beans" that are now being exhibited and sold in many parts of London. In this case a hard, rigid seed is seen to travel about in a series of small jerks, being slightly lifted from the ground at each movement. Upon dissection the seed is found to be hollow, the original contents having been devoured by a coleopterous larva—a soft fleshy maggot—which now partially occupies the cavity, and by its spasmodic movements causes the strange antics of the natural box in which it is enclosed. The walls of the seed appear to be quite rigid and inelastic.

E. E. GREEN.

November 1.

HERTZ'S MISCELLANEOUS PAPERS.¹

ANYTHING written by Hertz is of interest; and these papers are of interest, not only on this account, but also on account of their suggestiveness. It is always a question as to the desirability of republishing and translating papers published some years ago. Most valuable papers of ten years' standing have produced their effect. Their vitality has been transmitted to and reproduced in subsequent work, but what the scientific world requires is advance rather than revision. The work of pioneers is, however, largely an exception to this rule. They are generally in advance of their times, and much of their work is of value long after it was done. Such an one was Hertz. Most of his papers are suggestive of questions which still require answers, and they all breathe a spirit that, as he says himself of Helmholtz's work, evokes "the same elevation and wonder as in beholding a pure work of art." His papers are not mere enumerations of observations, nor mathematical gymnastics. Each has a definite purpose and an artistic unity. A life-giving idea pervades it. It is no mere dry bones, but an organic whole that lives for a purpose, and does some work for science.

Prof. Lenard has earned much gratitude for his Introduction. It gives a charming picture of Hertz, of his simplicity, his devotion to science, his loving regard for his parents. There is just enough added to the very well-selected letters to give the reader a continuous view of Hertz's work, and enable him to follow its development, and hence feel an interest in it and sympathy with the worker, thus fulfilling the best ideal of the biographer.

One of Hertz's first investigations was as to the kinetic energy of an electric current. The question is still of great interest. It is known that the magnetic induction that accompanies an electric current behaves exactly as if it were a mass moving with inertia. This is the inertia of magnetic induction. Hertz was, however, looking for a different inertia. He looked at the subject from the flow of electricity point of view. He thought that there might be some phenomenon corresponding to an inertia of the electric charges, which upon this theory are supposed to be flowing in opposite directions through a conductor. He supposed that these might have some inertia

¹ "Miscellaneous Papers." By Heinrich Hertz. With an Introduction by Prof. Philipp Lenard. Translated by D. E. Jones and G. A. Schott. Pp. 364. (London and New York: Macmillan and Co., Ltd. 1896.