

Hofmann, of Berlin. Considering the well-deserved international position of Dr. Hofmann, his personal influence on the development of applied chemistry as well as of pure science, and the excellent official English report he wrote on the Chemical group of the London Exhibition of 1862, no better choice could possibly have been made. Wishing to give a more comprehensive work even than that of 1862, and to do so within reasonable time, Dr. Hofmann had recourse to a subdivision of labour, and a great number of practical and theoretical chemists of different nations have contributed articles for this work. Some of these contributors, such as Professors Frankland of London, and Wurtz of Paris, occupy eminent scientific positions; others are eminently fitted for the subjects they have treated by their practical pursuits. The report is intended to come out in three parts, containing the industrial applications of metalloids, of metals, and of organic compounds respectively. The first part, which has appeared, contains the following succession of papers:—"The Elements of Water," containing oxygen, hydrogen, and also ozone and peroxide of hydrogen, by Dr. A. Oppenheim; "On Drinking-water," by Dr. Edw. Frankland; "On the artificial production of Cold and Ice," by Dr. H. Meidinger; "On Chlorine, Bromine, Iodine, and Fluorine," by Dr. E. Mylius; "On the Sulphur-industry of Sicily," by Dr. Angelo Barbaglia; "The Manufactory of Sulphuric Acid," by R. Hasenclever, director of the Rhenania Chemical Works at Stolberg; "Ammonia," by M. Seidel, manufacturer at Amsterdam; "Nitric Acid," by Dr. Ad. Geyger; "Protioxide of Nitrogen," by Dr. O. Liebreich; "Phosphorus and its Applications," by Dr. A. v. Schrötter (the discoverer of amorphous phosphorus); "On Carbon and Graphite," by Dr. R. Biedermann; "On Sulphuret of Carbon," by Dr. O. Braun, manufacturer at Berlin; "Cyanides," by Dr. E. Meyer, director of the Kopenik Chemical Works; "Silicates," by Dr. R. Biedermann. This enumeration shows that the variety of subjects treated on in about 350 pages is too great to allow of a detailed review, and we can only say that many of these papers offer an unusual interest.

The leading idea has been to give first a short history of the manufactures in question, and then a succinct account of the latest improvements. The most prominent samples exhibited at Vienna and the prizes awarded by the jury are shortly mentioned. The book is designed by its editor to be more than a monument of the last International Exhibition, viz., a history of chemical industry in a very readable form, and a desirable addition to the existing manuals of pure and applied chemistry. He has taken great pains not only in gathering an effective staff of fellow-workers around him, but in distributing the work, adding supplementary information, and arranging the papers in a systematic form.

Very many of the communications which appear here in print are based upon letters elicited from the best known manufacturers of various countries. The second part of the Report is now about to leave the press, and the third part is expected to be printed during the coming winter. An English translation and an Italian one are being prepared at the same time.

A. OPPENHEIM

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. No notice is taken of anonymous communications.]

The Spectroscope and the Weather

WE were visited here, on the 11th inst., by a very severe thunderstorm, beginning a little before noon and lasting for about an hour and a half. Anxious to confirm some observations made recently in the West Indies, in which I got from lightning a continuous spectrum, I took out my pocket spectroscope, and on looking through it was at once struck by the peculiarity of the spectrum. The band noticed by Prot. P. Smyth (vol. xii. pp. 231, 252) on the less refrangible side of D was very distinct, while the band (W.L.L. 5830-5680) on the more refrangible side of D was also very, though not nearly so dark, leaving the appearance of a bright yellow band over the part of the spectrum W.L.L. 5880-5830, as in the sunset spectrum, only much more marked. The A, B, and C lines were all visible; E and *b* were very sharp, *b* being easily separable into three lines; while there was also a dark band (W.L. 5040?) between *b* and F, but no lines visible beyond F. The most peculiar point, however, was the rapidity with which the spectrum varied, for, keeping the instrument pointed in one direction, each different cloud that passed differed in the intensity of the darkness of the band W.L.L. 5970-5900, which sometimes could be distinctly separated from D, while at other times it appeared quite continuous with it. The darkest bands were given by the lurid purple and pillared white-grey clouds. During all this time the heat had been intense, and the thunder was accompanied by light gusts of wind varying as much as 90° in direction, but about 1 o'clock rain began to fall and the abnormal bands to disappear. By 4 P.M. the band W.L.L. 5830-5680 was almost quite gone, and the band W.L.L. 5970-5900 had also become faint, appearing like a shadow cast by D, which was sharp and clear except in the light reflected from a few of the heaviest clouds. On the 12th the sky was still very much overcast and the spectrum again slightly abnormal, but not more so than I have noticed it in a thick "Scotch mist." To-day, with sky still completely overcast, the spectrum is quite normal.

The instrument used was one of Ladd's excellent small pocket spectroscopes.

F. C. MANSE KEIG, Aberdeenshire,
Aug. 13

C. MICHIE SMITH

Sea Elephants from Kerguelen's Land at Berlin

THE expedition sent by the German Government to observe the Transit of Venus at Kerguelen's Land has brought home a noble series of specimens.

The most interesting of these are the skins and skeletons of male and female Sea Elephants (*Cystophora leonina* = *Morunga elephantina*, Gray), adult and young. The largest male is fortunately full grown, though not old, or of so large a size as some of the skulls preserved in other museums would apparently indicate. Still it is a noble specimen, and has been admirably prepared under the direction of Prof. Peters. The skeleton, when ready, will be mounted and placed by its side in the museum.

Though the existence of this wonderful Seal was made known more than a century ago by Pernetty, and subsequently described with more or less graphic detail and exactness by Anson, Cox, Péron, and other antarctic explorers, when it inhabited comparatively accessible localities, there was, so far as I know, no full-grown male specimen in any European museum until this one reached Berlin; and it is only a full-grown male, as is well known, which possesses the remarkable nasal appendage which suggested the name "Sea Elephant." A young male can hardly be distinguished from a female. Some writers have described the appendage as a sort of trunk—more than a foot long—indeed it is so figured in the plates to Péron's "Voyage aux Terres Australes;" but Anson, speaking of those he found at the island of Juan Fernandez, compared it to the wattles of a cock. The justice of this comparison is well shown in the Berlin specimen. The appendage is there seen to be a