

nately the readings of the barometer are not corrected for diurnal variation, although the given values of $\frac{d\phi}{dt}$ are so corrected; and I can only apply approximate corrections, and so obtain approximate values of $\Delta\phi$.

Mauritius, April 29, 1892.

	ϕ	$\Delta\phi$	$\frac{d\phi}{dt}$	Time of arrival.
6 a.m.	29'668	0'282	0'018	2 p.m.
8 "	'597	'353	'029	2 "
9 "	'536	'414	'063	1 "
10 "	'440	'510	'094	1 "
11 "	29'304	0'646	0'131	1.30 "

The computed time of arrival is therefore 1.30 p.m., and the agreement in the last column shows that the centre was directly approaching the place of observation, and it really arrived there at 2, or 2.30 p.m.

Now at 6 a.m. the wind was 22.4 miles an hour: (4) gives $\frac{d\phi}{dt} = 0.0016$; (2) gives $r = 104$; and (5) gives $\Delta\phi_e = 1.5$, which is a little too small, the observed fall at the centre being about 2.0. If, however, we compute $\Delta\phi_e$ for 9 a.m., we get 2.4, which is a little too large; and as in the case of time of arrival, we should be guided by a series when possible.

Jamaica, July 29.

MAXWELL HALL.

A Sparrow's Antipathy to Purple.

I HAVE but just seen your number for March 10. About five years ago I knew a tame sparrow with a great antipathy for purple. It was brought up in a room, but not, or seldom, caged. It lived four or five months. A piece of blue paper placed over its food would cause it to hesitate, though if hungry it would eventually draw the paper aside; a person coming into the room wearing a blue dress would make it quite wild, and a habit of mischievously pecking at a certain part of the wall of the room was successfully stopped by hanging a piece of blue paper there. This sparrow was taught to be cleanly in its habits. I had put off writing this to you in hopes that others who saw more of the sparrow would have written a more detailed account, but trust this letter may not be too late for any one interested to get a young sparrow from the nest this year and rear it. Sparrows have not yet reached Borneo.

G. D. HAVILAND.

Sarawak, June 17.

Bumping in the Lane Fox Mercurial Pump.

CAN any reader of NATURE favour me with a method by which the bumping in the Lane Fox pump may be obviated? I find that when exhaustion is pressed to a certain point, the bumping becomes so violent, in spite of the utmost care in lowering the reservoir, that the bulb of the pump is constantly cracked.

Lahore, July 25.

D. G.

CARL SCHORLEMMER, LL.D., F.R.S.

CARL SCHORLEMMER having been my friend and colleague in Owens College for more than thirty years, it is with a sad pleasure that I take up my pen to record in the columns of NATURE some few details of his character and work. He had not, like his predecessor Dittmar, been a fellow student with me in Heidelberg, but had worked at chemistry in Darmstadt, where he was born, and at Giessen. In 1858 Dittmar, who up to that year had been my private assistant, obtained the College appointment of Demonstrator, and he strongly urged me to offer his vacant post to his friend Schorlemmer, a young man of great promise. From the time of his arrival in Manchester until the day of his death I do not recollect that in all the intercourse of those years Schorlemmer and I ever had a single serious difference.

Whilst my private assistant he and I examined the relation which the aqueous acids exhibit as regards boiling point and composition, and I remember well the difficulties we had to contend with in distilling fuming nitric and hydrofluoric acids under pressure, and I also remember how successfully he met them. Once, I know, he got some fuming hydrofluoric acid on his hand, and he bore the scar of the serious burn to the end. This work with me was his apprenticeship. In a short time Dittmar left us, and Schorlemmer took his place as the official Laboratory Assistant, and as we had not many students at that time, he had leisure to begin the hydrocarbon work which has placed his name high in the list of organic chemists of the century. In 1861 the late Mr. John Barrow, of the Dalton Chemical Works, Gorton, brought me a sample of the light oils which he had obtained in the distillation of cannel coal. At that time our knowledge of the chemical composition of the low-boiling coal-oils was very incomplete, and I urged Schorlemmer to undertake the investigation. This was the beginning of the work which led to a result which altogether modified the existing ideas concerning the constitution of the paraffin hydrocarbons, and paved the way for the sound foundation upon which the organic portion of our science has since been successfully laid. In order to appreciate Schorlemmer's results let us for a few moments glance at the position of the question when he commenced work. Before 1848 the only known member of the paraffin series of hydrocarbons, was methane CH_4 . In the above year the researches of Kolbe on the electrolysis of the fatty acids, and of Frankland on the isolation of the alcohol-radicals, opened out new fields yielding a rich harvest. Each molecule of these latter hydrocarbons was supposed to contain two molecules of the radical methyl being represented as $\left. \begin{array}{l} \text{CH}_3 \\ \text{CH}_3 \end{array} \right\}$, whilst together with these a second

series of hydrides was believed to exist, $\left. \begin{array}{l} \text{C}_2\text{H}_5 \\ \text{H} \end{array} \right\}$ ethyl hydride standing in the same relation to the radical as an alcohol does to an ether. The truth of this view seemed confirmed by Wurtz's discovery of the existence of the so-called mixed radicals in which two molecules of different hydrocarbons, such as ethyl and amyl $\left. \begin{array}{l} \text{C}_2\text{H}_5 \\ \text{C}_5\text{H}_{11} \end{array} \right\}$ occurred. How was this question to be settled? Schorlemmer at once seized upon the correct method of solution and carried it out successfully. If, said he, the radical methyl $\left. \begin{array}{l} \text{CH}_3 \\ \text{CH}_3 \end{array} \right\}$ is identical with hydride of ethyl $\left. \begin{array}{l} \text{C}_2\text{H}_5 \\ \text{H} \end{array} \right\}$ not only must these two bodies possess the same properties, but both bodies must yield the same product, viz., ethyl chloride, on treatment with chlorine. This identity he proved, not only in the above—the most simple case—but in the more complicated cases of ethyl-amyl $\left. \begin{array}{l} \text{C}_2\text{H}_5 \\ \text{C}_5\text{H}_{11} \end{array} \right\}$ and of di-amyl $\left. \begin{array}{l} \text{C}_5\text{H}_{11} \\ \text{C}_5\text{H}_{11} \end{array} \right\}$ as these hydrocarbons yielded respectively chloride of heptyl and chloride of decetyl, $\text{C}_7\text{H}_{12}\text{Cl}$. and $\text{C}_{10}\text{H}_{21}\text{Cl}$. It is difficult to overrate the importance of this apparently simple discovery. It laid for ever the ghost of the existence of two sets of isomeric hydrocarbons of the paraffin series, and paved the way for Kekulé's theory of carbon combination, upon which the whole modern theory of organic chemistry is based. So to Schorlemmer belongs the credit of placing in position the foundation-stone of our science. And at once his name became known as a master wherever chemistry is studied; so that in 1871 the Council of the Royal Society admitted him to the Fellowship at once, an honour conferred nowadays on few.

But it was not only as an expert experimentalist that Schorlemmer excelled, and his thirty-two papers catalogued in the Royal Society list prove that he was a successful one. He possessed an exhaustive knowledge, un-

common amongst chemists, of the literature of his special science in all its varied departments. If any of our men wanted a quick reference to either recent or ancient work, it was always "Go and ask Schorlemmer," and they seldom came empty away. But his acquaintance with other sciences was also considerable. If he had not been a distinguished chemist he would have made an equally distinguished botanist. He likewise possessed in full measure that dogged power of work which distinguishes the German. I was especially fortunate in securing his co-operation as co-author of the Treatise. The success of my little book—as to which no one was more surprised than myself—induced me to set about the task of writing a larger and more complete work. I soon found that the other very various and pressing duties of my position rendered it impossible for me to do all the work myself, and my friend Schorlemmer joined me in this somewhat laborious business. To him the organic part almost entirely owes its being, whilst in the inorganic portion his assistance and suggestions were most valuable. We published the book simultaneously in Germany and England, and it is not too much to say that in both countries the work has become a standard one. For the last few years of his life this was his main work. Only those few men who have lately attempted the task of writing even a moderately complete treatise on modern organic chemistry can know what serious labour such work entails. Several distinguished chemists have given up the task as hopeless, and have not completed what they had begun. If Schorlemmer's life had been spared he would have brought his work to a conclusion, cost what it might. Our consolation—and it is but a poor one—at his early death (for he was only fifty-eight), must be that, so far as the chemistry of the hydrocarbons and their derivatives are concerned, his manuscript is complete, and in the hands of Messrs. Vieweg. A mass of material he has gathered together for the remaining organic compounds in which nitrogen occurs as a constituent element. It will be my task to see whether this last portion of the work is complete, and if not, how it can best be brought up to the level of the day.

As a historian of our science, I think that the designation of him by his German friends as the "English Kopp" is a just one. Only a few weeks before his death he talked to me with pleasure of the results of his work on an introduction to the history of chemistry, which had engaged his attention for many months past. Fortunately, he had the rare power of writing so that his manuscript was at once ready for press. Hence, although a fragment, his history so far as it goes—and I believe it goes as far as the end of the eighteenth century—is complete. We shall all look with interest to its speedy publication, and from what I know of the author's works and ways, I shall be disappointed if this fragment does not throw a new light on many dark pages in the early history of our science. One word more as to his character. I have said that we never had a difference, and I believe from what I know of his other friends that they would say the same. He was of a retiring, most modest, and unassuming disposition. To only a few of his intimates, German and English, were his true colours visible. As a laboratory teacher he was excelled by few, merely as a lecturer by many. But although, like some other eminent lecturers, his diction may have been faulty, the staple article was there, and I never met a real student amongst all those who passed through his hands who did not express his admiration for the man, and his sense of the obligation which he felt for the masterly instruction which the Professor always and most readily gave, whilst the long list of honours which his men gained in organic chemistry, both at London and afterwards at Victoria, proved that his teaching was not in vain. True to his science, he valued chiefly the

respect and affection of his colleagues and pupils. In society he did not shine, nor did he take any leading part in the government of the College or in the foundation of the University, although those of us who were more active in these matters could always count upon his support in all questions in which the interests of science were concerned, and if he usually preferred to be at his own desk rather than to spend his time listening to the often tedious discussions of the Senate meetings, he was always at hand when a vote was needed to carry out some measure of scientific reform. Although for many years a naturalized Englishman, and enjoying and appreciating English freedom and English ways, he retained more than is usual, a lively interest in the welfare of the "Vaterland." I knew but little of his political views, for these he did not obtrude on his friends, though he held decided ones. He believed in popular freedom and popular rights, and was a strong supporter of the German Social Democratic party, many of the leaders of this movement, both in Germany and in England, being his intimate personal friends. But with these matters we have here little to do. We here have to recognize the scientific work which he has done amongst us, to record our appreciation of that work, and to express the regret of all interested in science at his untimely death.

H. E. ROSCOE.

SCIENTIFIC INVESTIGATIONS OF THE SCOTTISH FISHERY BOARD.

THE Fishery Board for Scotland has issued its Tenth Annual Report (for the year 1891). It is divided into two parts—the general report, and the report on salmon fisheries. We reprint from the general report the passage relating to the scientific investigations carried on since the Board was reconstituted ten years ago:—

The following is a statement of the sums which have been sanctioned during each of the following years and spent by the Board on scientific investigations:—

Year.	Sanctioned.	Spent.
1883-84	£300	£300 13 7
1884-85	1600	1430 0 11
1885-86	1500	1500 0 0
1886-87	2000	1647 5 3
1887-88	2000	1843 4 5
1888-89	2000	1804 4 3
1889-90	2000	2026 10 0½
1890-91	1800	1792 13 4
	(With £200 for travelling expenses.)	
1891-92	£1800	Do.

In addition a sum of £2500 was applied in 1886-87 for the purchase of the steamer *Garland*, and £500 per annum allowed for its maintenance, which was increased first to £900, and afterwards to £1200 a year.

When the Board commenced its operations, it was a new department in State administration. The Fisheries Commission of the United States was only established in 1871, and we were without the experience which has since been gained in America, Germany, Norway, and other countries bordering on the North Sea. The directions of the Act of Parliament creating the Board were very general. We were appointed to "take cognisance of everything relating to the coast and deep sea fisheries of Scotland, and take such measures for their improvement as the funds under their administration not otherwise appropriated might admit of, but without interfering with any existing authority or private right." Hitherto the fisheries had been practically left to take care of themselves. During the administration of the old Board, which had existed from 1809 under the name of the Commissioners of the British White Herring Fishery, scientific investigations had indeed been made from time to time into special points, such as the spawning of the herring, the capture of immature herrings by sprat fishermen, and the action of the beam-trawl on herring spawning-beds. These inquiries were, however, limited both in character and