Glories.

MR. JAMES MCCONNEL asks in NATURE (vol. xl. p. 594) for accounts of the colours and angular dimensions of glories. I saw a good instance of the phenomenon on Lake Superior, June 17, 1888, and, having had my attention called to the value of accurate descriptions in such cases by Mr. Henry Sharpe's "Broken Spectres," I examined it carefully.

The shadow of my head on the mist was surrounded by a brilliant halo or glory, slaty-white around the head, followed by orange and red; then a circle of blue, green, and red, and the same colours repeated more faintly. The diameter of the innermost and brightest circle of red, as measured on the graduated semicircle of a clinometer, was $4\frac{1}{2}^\circ$. There was also a very distinct, but nearly white, fog-bow outside, of 42° radius, as measured in the same way.

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Fossil Rhizocarps.

REFERRING to Sir William Dawson's note on this subject in NATURE of November 7 (p. 10), we regret that we have been unable to trace the original source from which the statement in our "Hand-book of Cryptogamic Botany" was derived, relative to the fructification of *Protosalvinia* or *Sporangites*. The sentence will therefore, with apologies to Sir W. Dawson, be removed from future editions of the work.

ALFRED W. BENNETT.

The Arc-Light.

WOULD you or any of your readers kindly tell me where I may find an account of any of the latest methods of determining the back E.M.F. of the arc-light?

JOSEPH MCGRATH.

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THE HYDERABAD CHLOROFORM COMMISSION.

THE appointment of a Commission at the present time to investigate the action of chloroform as an anæsthetic might to many seem an anomaly. For the use of chloroform as an anæsthetic was introduced over forty years ago: it was in November, 1847, that Prof. Simpson, of Edinburgh, first brought this valuable agent before the medical profession. Since that time, the use of chloroform has enormously extended, especially in our country, and although there are other valuable agents of the same class—such as ether and nitrous-oxide gas—yet there is a universality of opinion that the employment of chloroform has in many cases a special advantage. Considering the extensive use of the agent, and the progress which has been made of late years in the study of the action of drugs in man, it certainly is surprising that the knowledge of the effect of chloroform on the different parts and organs of the body is not complete. This is not altogether from want of attention to the subject; because, previous to the Hyderabad Commission, at least two Commissions were appointed with the view of investigating the action of chloroform and its occasional serious effects. These Commissions were appointed by the Royal Medical and Chirurgical Society of London, and by the British Medical Association, and they were composed of men who, from their knowledge of experiment and acquaintance with practical medicine, were competent to discuss the question. The two Commissions arrived at the same conclusions as the distinguished French man of science, Claude Bernard, had published years before, and these conclusions tallied with the teaching of the great London medical schools.

Chloroform and other anæsthetic agents have a peculiar position: they are powerful drugs used, not for disease itself, but for the purpose of allowing an operation to be performed, preventing the pain which would otherwise be felt, and relaxing the contraction and spasms of the muscles, so that the surgeon can more readily and accu-

ately operate. The administration of the anæsthetic is something, then, outside the diseased condition; so that its use ought theoretically to be perfectly harmless to the sick person. Unfortunately it is not always so, and deaths from chloroform are, although rare, by no means unknown. The administrator of chloroform is therefore a person of great responsibility: he has to watch carefully the effect of the agent on the patient, to notice any unfavourable change that occurs, and to adopt measures to counteract any bad effects which appear. The knowledge of the mode in which chloroform causes danger to the life of the patient is therefore of vast importance; for, if the administrator knows the signs of danger, there is more likelihood of counteracting a fatal result. These fatal results, which are among the saddest that occur in medical practice, ought, if possible, to be avoided.

What, then, is the danger to life of chloroform? Or, to speak more fully, what particular part of the body does chloroform injuriously affect when there is danger? This is just the point that the various Commissions have attempted to settle. In the Scotch schools, more especially that of Edinburgh, it has been taught that the great danger of chloroform was in failure of respiration; meaning by this that the danger-signal of chloroform was the stoppage or irregularity of the breathing. As a corollary to this belief, it was considered that the heart was only affected after the breathing had become interfered with; that, in fact, the respiration stopping, the blood was not oxygenated, so the heart stopped beating. This was the teaching of the great Edinburgh surgeon, Syme. The English (and especially the London) teaching was almost directly opposed to this. It was taught, and is still taught in the London schools, that the great danger from chloroform arose from its effect on the heart, which stopped beating before the respiration ceased. Which, then, of these two doctrines is true, or are both true?

The decision of this question is, as we have stated, one of vast importance; but it must be remembered that, whichever is right, the administrator of anæsthetics always pays attention to both the beating of the heart and the regularity of the respiration. Surgeon-Major Lawrie, one of the prominent members of the Hyderabad Chloroform Commission, says that "it is possible to avert all risk to the heart by devoting the entire attention to the respiration during chloroform administration." Medical opinion in England, both of that of experts (professional anæsthetists) and of the general profession, is distinctly opposed to this view; and the administrator who does not attend to the pulse, as well as to the breathing, is certainly neglecting one of the main paths by which Nature shows us what is going on inside the organism.

From the statement of Surgeon-Major Lawrie just quoted, it will be seen that the Hyderabad Chloroform Commission came to the conclusion that the danger from the administration arose, not from the heart, but from the respiration. This view was strongly combated in our contemporary, the *Lancet*. The importance of the question led the Nizam of Hyderabad to obtain the services of a scientific medical man from England to go out to India and attempt to settle the question. Dr. Lauder Brunton, F.R.S., consented to go; and, well known as he is for his life-long devotion to the experimental investigation of the action of remedies and their practical application, it was considered probable that his aid in the research would lead to interesting and important results. From the somewhat scanty news of the results which have been telegraphed to England, it seems likely that the investigation now progressing at Hyderabad will tend to revolutionize existing views as to the action of chloroform.

Dr. Brunton's views as regards the dangers of chloroform before he left England were clearly expressed in his well-known "Text-book of Pharmacology." In it he says that "the dangers resulting from the employment of