illustrations; (3) description of the photographic apparatus employed, and (4) the method of measuring the pictures obtained. The two last chapters will be very valuable for any one proposing to undertake the difficult task of photographing the clouds, and of determining their heights and movements. In referring to the various attempts at cloud classification, we do not find any mention of "Cloudland," by the late Rev. W. C. Ley.

*Proceedings of the London Mathematical Society.* Vol. xxviii. Demy 8vo, pp. 594. (London: Francis Hodgson, 1897.)

THIS collection of thirty-four original papers on every branch of mathematics affords abundant evidence that English mathematicians are not behindhand in moving with the times. If proof be needed that the younger generation of mathematicians are quite following in the lines of those that have gone before them, it may be sufficient to mention that at least six of the papers are by men who have graduated at Cambridge since the year 1886. As might be expected, "Partitions" and "Groups" occupy a prominent place, seven of the papers being devoted to them. The former of these two subjects is ably introduced by Major MacMahon, F.R.S., in his address on "Combinatory Analysis," delivered on retiring from the office of president; and the publication of the outlines of seven lectures on the "Partitions of Numbers," delivered by the late Prof. Sylvester at King's College, London, in 1859, is another important feature. On the other hand, "hyper-Euclidian geometry" is conspicuous by its absence, and applied mathematics is represented by eight papers only.

During the past year the London Mathematical Society has lost two members in addition to the late Prof. Sylvester: the Rev. Alexander Freeman, who died on June 12, 1897, and Lieut.-Colonel John Robert Campbell, who died on June 23. Colonel Campbell, besides serving on the Council, was a benefactor to the Society, and we understand that had it not been for his munificence it would have been impossible for the Society to issue such large and interesting volumes of *Proceedings* as the one now before us.

*First Year of Scientific Knowledge.* By Paul Bert. Translated by Madame Paul Bert. Revised and partly re-written by Richard Wormell, D.Sc., M.A.; and Montagu Lubbock, M.D. Pp. vi + 417. (London: Relfe Brothers, Ltd. Paris: Armand Colin and Co.)

THIS is a revised edition of a work which has had a very successful career, but is constructed upon a plan which has little to commend it. The revision has consisted in bringing the information into line with current scientific knowledge, the plan of the book remaining as in the original. The rudiments of zoology, botany, geology, physics, chemistry, animal physiology, and vegetable physiology are all described in the four hundred pages which constitute the text, so that the book is comprehensive in its scope, if nothing else. The chief fault we have to find is that far too many technical terms are defined and used, so that the unfortunate pupils who are introduced to natural history by this book will be given the idea that science consists chiefly of words of Greek origin, and an unpronounceable terminology.

*Who's Who*, 1898. Edited by Douglas Sladen. Pp. xviii + 846. (London: A. and C. Black, 1898.)

THIS is undoubtedly the handiest biographical dictionary and compendium of information, referring to prominent persons and their doings, in existence. It contains nearly seven thousand biographies—mostly autobiographies—of the leading men and women of the day, and a large amount of information in addition. Among the general contents of interest to men of science is a list of Royal, National and learned societies, showing the addresses of the societies, secretaries' names, annual subscriptions and other conditions of membership. We notice also a table of university degrees, with the correct explanation of each, a list of chairs and professors in the great universities of the United Kingdom, arranged alphabetically by their chairs, and a list of Fellows of the Royal Society (most of whom appear among the biographies). The volume is one to be kept on the writing table for ready reference; and it possesses the merit of including in its pages biographical details of more men of science than usually figure in similar reference books, though even now some of the minor literary lights could be struck out with advantage to make room for well-known scientific men who have been omitted.

## 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 intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

### Mechanism of Self-fertilisation in the Banana.

I PROPOSE to describe here the mechanism of fertilisation in the banana plant.

(1) *Packing of the inflorescence.*—The inflorescence in this plant is packed air-tight in the large red-coloured bracts, whose margins are secured in place by a sort of cement. If we remove one of these bracts and examine the buds within, we find that the reproductive organs are also packed air-tight in the perianth. A closer examination of this packing is necessary to understand its efficiency.

The perianth consists of an outer whorl and an inner whorl; the outer one consists of three sepals, usually united into an elongated concave hood. (Sometimes, instead of the three being united together, only two are united and one is free, which in the bud is partially overlapped by the other. Very rarely the three are quite free. In about fifty examples I examined, I

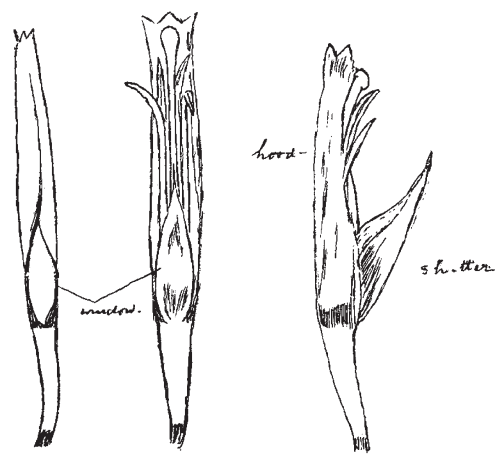


Fig. 1 Fig. 2 Fig. 3

got only one flower with all the three sepals distinct.) The margins of the hood are folded inwards, so that they overlap each other. There is no fixed rule as to which is the outer, and which the inner, sepal. Sometimes the right overlaps the left, or *vice versâ*. This overlapping is not complete throughout their length, and cannot possibly be so. For, to ensure the packing being air-tight, the pectinate inflorescence must necessarily be concavo-convex, *i.e.* convex without and concave within; and obviously any cylindrical tube bent concavo-convexly must necessarily leave a gap or a window at the bottom (see Figs. 1 and 2).

This window would be a very weak point in the packing, and hence most accessible to insects or other injurious agencies if the outer packing became loose by accident. This weak