(1) *A First Year's Course of Inorganic Chemistry.* By G. F. Hood. Pp. iv+107. (London: Rivingtons, 1910.) Price 1*s.* 6*d.*

(2) *A Manual of Elementary Practical Chemistry for Use in the Laboratory.* By P. W. Oscroft and R. P. Shea. Pp. viii+134. (London: Rivingtons, 1910.) Price 2*s.*

THESE two little volumes are for use in schools, and are intended to serve as an introduction to chemistry. Oscroft and Shea's manual carries the subject to the stage of equivalent weight estimations and simple gravimetric and volumetric analysis, whilst Hood's book, which is a first year's course, stops short of this point. Both books contain descriptions of a series of easy quantitative experiments on loss and gain in weight, as well as a detailed account of a variety of thoroughly instructive preparations.

There is nothing in either that strikes one as very new or original in conception or arrangement; but, on the other hand, there is nothing to which objection can be taken, and both volumes may be recommended without reservation. It might be well in a future issue to give the actual results of the quantitative experiments so that both teacher and student might form some idea of the accuracy attainable. In conclusion, we question to what extent it is permissible to adapt a classical discovery to the intelligence of a schoolboy; for it may be doubted if either Berthollet, Gay-Lussac, or Davy ever thought of chlorine as "murium dioxide" (Hood, p. 51). J. B. C.

Catalogue of the Books, Manuscripts, Maps, and Drawings in the British Museum (Natural History). Vol. iii. (L–O). Pp. iv+1039–1494. (London: British Museum (Natural History), 1910.) Price 20*s.*

THE long interval which has elapsed since the publication of the second volume of this catalogue (see NATURE, August 25, 1904)—which followed the first (*ibid.*, October 22, 1903) in reasonable time—is explained in the preface as due to other library work. Apparently the earlier sheets of this volume were completed and printed off before 1907, as we find no title associated with the name of Sir E. Ray Lankester, while the latest of his works referred to bears the date of 1906. In this connection it may be noted that in some cases the full Christian names of authors, as in the case of Sir E. R. Lankester and Sir R. Owen, are repeated in each entry, whereas in other instances, as in the case of Sir Charles Lyell, these are reduced to the initials after the first entry. Apparently the compiler was compelled to follow the order adopted in the library catalogue at Bloomsbury, which will probably account for the sundering of such names as Loennbohm (p. 1163) and Lönnberg (p. 1175). Like its predecessors, this volume contains valuable bibliographical information, and it is to be hoped that we shall have the pleasure of welcoming the fourth volume at an early date. R. L.

The Calendar of Garden Operations. New and enlarged edition. By members of the staff of the *Gardener's Chronicle.* Pp. vi+175. (London: *Gardeners' Chronicle,* Ltd., 1910.) Price 6*d.* net.

THIS is a new edition of a work prepared originally by Sir Joseph Paxton, and published in 1842. It is a concise and practical manual from which possessors of small gardens in country or town may obtain much useful advice and guidance. Chapters have been added on the cultivation of trees and shrubs in towns, and on the principles of intensive culture or French gardening. In its enlarged form the continued success of the book is ensured.

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.]*

Separating Power of a Telescope.

CAN an observer inform me what are the proper telescopic powers, and apertures or sizes of glasses, required to see stars which are apart from each other the following distances, and of different magnitudes?

(1)	...	0″ to 1″	(5)	...	8″ to 12″
(2)	...	1 to 2	(6)	...	12 to 16
(3)	...	2 to 4	(7)	...	16 to 24
(4)	...	4 to 8	(8)	...	24 to 32

Gore made a table showing the magnitude of the faintest star visible in any telescope in his "Stellar Heavens," but I would like to see if anybody can make a table out from *experience and ordinary practical observation* in the case of double and multiple stars. Where the glare of one star interferes with the definition of another star, I am inclined to think a larger aperture is needed in the case of doubles and multiples than in singles, and where the stars are very close. If a table could be made out for reference by students it would be useful.

Grimscar, Huddersfield. J. W. SCHOLES.

THE questions proposed cannot be answered quite so definitely as Mr. Scholes would appear to think. To begin, we must have a clear idea of what is meant by the separating power of a telescope. Put in a theoretical form, it means: Given two points of light (stars) a certain angular distance apart, what is the size objective which will just give two distinct images in the focus? For practical purposes, this is answered by the formula

$$\text{Separating power} = \frac{4''{\cdot}56}{a}$$

where a is the aperture of the object-glass in inches.

This can easily be remembered; or, if it is preferred, a table can readily be formed, thus:—

Size of O.G. Inches	Separating power ″
1	4·56
4	1·14
8	0·57
28	0·17
36	0·13

A second of arc in the focus of the 28-inch Greenwich refractor is 0·00163 inch. Let it be clearly understood that this table gives the theoretical size of object-glass to obtain *separate points in focus.*

If the points are not separated in the focus, no amount of magnifying power will afterwards separate them.

This does not imply that the unaided eye, looking at the focal images in the telescope, can detect duplicity. The points to be thus seen must subtend at the eye an angle of at least 60″. It is here that the eye-piece comes in, for, given two separated points, we can magnify the separation until the eye can not only detect, but can see it sufficiently to enable micrometric measures to be made.

Hence we use eye-pieces magnifying 2, 3, 4, 5 times, and so on.

These eye-pieces bring up the total magnifying power, which is quoted as the power used. It is stated in text-books that a power of 50 or 60 per inch aperture is the practical limit; but it is readily seen, however, that the power used is dependent on several conditions:—

(1) Size of object-glass.
(2) Quality of object-glass.
(3) Condition of the atmosphere.
(4) Personality of the observer.
(5) Subject observed.

The questions asked refer especially to double-star work, and confining ourselves to this simplifies matters.

If we allow 50 per inch aperture, we should expect to find observers with the