We have very little to say except in favour of this work, which is certainly one of the most important of recent contributions to systematic botany; but we should have liked to see a closer adherence to established usage in the application of certain botanical terms. To use the terms monœcious and dicœcious in relation to the individual receptacles as well as the whole tree is perplexing, and also unnecessary, because suitable terms for expressing these distinctions are current, and even employed by the author himself in some passages. W. B. H.

OUR BOOK SHELF.

Year-book of Pharmacy for 1886. (London: Churchill, 1887.)

General Index to Year-books of Pharmacy, 1864–1885. (London: Churchill, 1886.)

THE "Year-book of Pharmacy" for 1886 contains a larger number than usual of abstracts of papers. Amongst the most interesting of them are perhaps those treating of coca and substances obtained from it. It appears that when the active principle, cocaine, is heated with water it decomposes, losing methyl (CH_3), which is replaced by hydrogen. The product of this decomposition is benzoyl-ecgonine, which can again be converted into cocaine by heating with methyl iodide and methyl alcohol. The replacement of methyl by hydrogen in the conversion of cocaine into benzoyl-ecgonine produces a very marked change in the physiological action of the substances, for while cocaine is distinguished by its extraordinary power of paralyzing the sensory nerves and thus producing anæsthesia of any part to which it is applied, this power is completely absent in benzoyl-ecgonine. Benzoyl-ecgonine, however, has a physiological action very closely allied to that of caffeine—a circumstance which is very interesting in relation to the use of coca and coffee as a beverage.

Another substance used as an intoxicating drink in the South Sea Islands—namely, Kava, obtained from the root of *Piper methysticum*—has been found, like cocaine, to have a powerful local anæsthetic action.

Other abstracts of great interest are those which relate to ptomaines and leucomaines, or alkaloids formed from the decomposition of albuminous matters either outside or inside of the body. These alkaloids are becoming more and more important from the fact that they are now recognized as not only causing poisoning where meat has been taken in a state of putrefactive change, but as causing abnormal symptoms in some diseases. Thus it has been found that in typhoid fever a large quantity of ptomaines occur in the fæces, and it is supposed by one writer that the utility of *tisanes* in illness may be due to their aiding the removal of these alkaloids from the body through the kidneys.

By cultivating the comma-bacillus in broth, an alkaloid has been obtained which appears to be identical with that already isolated from the dejecta of cholera patients. In relation to these alkaloids produced in the body, it is very interesting to note that alkaloidal substances may be formed by the action either of ammonia or of compound ammonias on glucose.

A number of new alkaloids have been isolated from plants, and the actions of several of these are described.

The General Index to the "Year-books of Pharmacy" for the Years 1864–1885 inclusive is of great service, saving much time, and enabling one not only to find any paper readily, but to see at a glance what work has been done on a particular subject within the last twenty years.

A B C Five-Figure Logarithms. By C. J. Woodward. (London: Simpkin Marshall and Co., 1887.)

TO those who work in physical and chemical laboratories this little book will be an immense help, for, in the ordinary work of the laboratory, errors of experiment exceed any error of calculation introduced by five-figure logarithms, while the time saved in calculation is very great.

The tables are indexed ledger-fashion, so that the required mantissa may be found in a moment. The differences for the 5th and 6th figures of sequences are found by using side letters denoting the line at the foot of each table in which the required difference is presented. Much greater accuracy is obtained by the last figure of certain mantissæ having dashes above and below to indicate departures from the normal difference. At the end are added a few chemical and physical constants and tables, including some on gas analysis.

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 Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.*]

Lighthouse Work.

IN the second of the very interesting articles on "Lighthouse Work in the United Kingdom," by Mr. J. Kenward, which have appeared in your pages, some words are used, not intentionally, I believe, but which, by those who are unfamiliar with the subject, might be construed in such a way as to deprive the late Mr. Thomas Stevenson of the credit due to him as the inventor of the dioptric mirror. The following is an extract from Mr. Thomas Stevenson's "Lighthouse Construction and Illumination," published in 1881, which puts the matter on a correct footing:—

"*Mr. J. T. Chance's Improvements of* 1862 *on Stevenson's Dioptric Spherical Mirror.*—Mr. Chance proposed to generate the prisms of the spherical mirror round a vertical instead of a horizontal axis, and also to arrange them in segments. He says (*Min. Inst. Civ. Eng.* vol. xxvi.):—'The plan of generating the zones round the vertical axis was introduced by the author, who adopted it in the first complete catadioptric mirror which was made, and was shown in the Exhibition of 1862 by the Commissioners of Northern Lighthouses, for whom it was constructed, in order to further the realizing of what Mr. Thomas Stevenson had ingeniously suggested about twelve years previously. During the progress of this instrument the idea occurred to the author of separating the zones, and also of dividing them into segments like the ordinary reflecting zones of a dioptric light; by this means it became practicable to increase considerably the radius of the mirror, and thereby to render it applicable to the largest sea light, without overstepping the limits of the angular breadths of the zones, and yet without being compelled to resort to glass of high refractive power.'

"There can be no doubt of the advantage of these improvements, and it is without any intention of derogating from Mr. Chance's merit in the matter that it is added that my first idea was also to generate the prisms round a vertical axis. But the flint glass which was necessary for so small a mirror could not be obtained in large pots, and had to be taken out in very small quantities on the end of a rod and pressed down into the mould. I was therefore obliged to reduce the diameter of the rings as much as possible; and it was thought by those whom I consulted at the time (Mr. John Adie, Mr. Alan Stevenson, and Prof. Swan) that by adopting the horizontal axis the most important and most useful parts of the instrument near the axis would be more easily executed, inasmuch as those prisms were of very much smaller diameter. Mr. Chance not only adopted