

for a purpose; while for the benefit of those who desire to know more of the inter-relationship of the fungi enumerated, a classified list is given of all the species, arranged under their respective families, including the distribution and name of the host.

For the general reader, who is not specially interested in either insects or fungi, there is a considerable amount of interesting information bearing on such subjects as vegetable caterpillars, vegetable wasps, foul-brood of bees, &c., and the interest is not lessened by following the transition from the romantic and highly imaginative accounts given by early travellers of these productions, to the statements in accordance with modern knowledge. There is a slip on p. 35; *Cordyceps Sheeringii* should be *C. Sherringii*. The indices are very complete and the figures, excepting one on p. 10, good.

Notes on Qualitative Chemical Analysis. By P. Lakshmi Narasu Nayudu, B.A. (Madras: K. Murugesu Chetty, 1892.)

It is interesting to meet with books such as this, which serve to indicate how the study of chemistry is progressing in the colonies and dependencies of the empire.

The author sets out with the endeavour to keep the *rationale* of the various processes of qualitative analysis well to the front, as in this way he considers the value of the study as a means of scientific training can alone be brought out. Group-reagents and the reasons for their use are first discussed as a preliminary to a somewhat exhaustive study of the reactions of the different basic and acid radicles. At the end of each group tables are given showing at a glance the behaviour of the radicles towards the various reagents.

It is somewhat astonishing that after such a minute study of the reactions of all the more common radicles, the author should give no schemes for the separation of the constituents of the different group-precipitates. In spite of the fact that under each radicle he gives as many, if not more, reactions than are given in the larger works on qualitative analysis, he contents himself with merely going through the examination of a simple salt. The expenditure of but little space would remedy this omission, which limits the sphere of usefulness of the book. It is to be noted also that film-tests find no place in the system adopted.

It may be said that the author adheres well to his purpose of showing why any particular operation is performed. The book contains a large amount of useful information. Occasionally, however, the mode in which it is stated is peculiar. "In the cold" is an expression commonly used in speaking of a reaction. The use of "in the heat," a term often employed by the author, is, on the other hand, uncommon. To speak, too, of "neutral solutions of zinc salts containing strong acids" is confusing. In some cases, as when using bodies like potassium metantimoniate or sodium hydrogen tartrate, it would be advisable to give the name as well as the formula: it isn't every student who is acquainted with such substances. It is erroneous to say that fluorine does not combine with carbon even at a high temperature. According to Moissan, all the allotropes of carbon, except the diamond, unite with fluorine, indeed some of the forms are, in the cold, spontaneously inflammable in the gas.

The following typographical errors are omitted in the list of errata. On p. 47 "meterially" should be "materially," " gSO_4 " &c. should be " MgSO_4 " &c. on p. 58, and " $\text{Ba}_2\text{P}_2\text{O}$ " is given for " $\text{Ba}_2\text{P}_2\text{O}_7$ " on p. 69.

Science Instruments. Catalogue of Scientific Apparatus and Reagents manufactured and sold by Brady and Martin. (Newcastle-on-Tyne, 1892.)

At the present time, when almost all branches of experimental science are growing so rapidly, and new and improved pieces of apparatus are continually coming

into existence, it is satisfactory to find that instrument makers are trying to keep pace with the times, and to afford purchasers the means of ascertaining with the minimum trouble what apparatus can be obtained to serve a particular end. This catalogue is an instance that such is the case. It is a well-bound book, profusely and clearly illustrated. The different kinds of apparatus, useful both for teaching and for technical purposes, are well classified. To prevent mistakes in ordering, each piece of apparatus is separately numbered, and where a new form is figured, a few lines are added explanatory of the principle involved.

The instruments quoted belong to various branches of experimental science—chemistry, bacteriology, physics, mechanics, and meteorology. A selection of instruments made by the Cambridge company, and miscellaneous apparatus, diagrams, chemical reagents, &c., are also included.

The sections on bacteriology and gas analysis are especially full, and indicate the interest at present taken in these departments.

A table of contents and an index are supplied. On p. 145 "Irish" is misprinted for "Iris"; and what is termed an "optical bank," on p. 164, is usually called an "optical bench."

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.]

Universities and Research.

AT the discussion in Edinburgh on the proposed National Laboratory, Lord Kelvin and Sir Geo. Stokes took marked exception to my contention that the primary business of Universities was research, contending that it was teaching. In a sense their contention is true, but not in contradistinction to my contention. The distinction would hardly be worth fighting over were it not that they took up the further ground that only those researches should be engaged in in Universities which were likely to interest the students. Of course the leaders of science can if they choose sell the great birthright of Universities for a mess of fees, but I hope they will not be permitted to do so without protest. What view the democracy take of Universities is of the very last importance with our democratic institutions, and I trust all those who have the welfare of the nation at heart will protest against the Universities being turned into coach-houses. In this connection it is most important to bear in mind the distinction between the functions of Universities and those of schools and colleges. The function of these latter is primarily to teach those who resort to them. The function of the University is primarily to teach mankind. In former days, when the means for distributing information were very imperfect, students used to flock from all sides to learn directly from a great mind. Nowadays the great mind distributes his teaching broadcast. In old days the only way to learn what was being done to advance knowledge was to go to the place where knowledge was being advanced. Nowadays we read the Transactions of our learned societies at home. But at all times the greatest men have always held that their primary duty was the discovery of new knowledge, the creation of new ideas for all mankind, and not the instruction of the few who found it convenient to reside in their immediate neighbourhood. Not that I desire to minimize the immense importance of personal influence, it is overwhelming; but it is a question quite beside the one at issue, which is whether the advance of knowledge by research and the teaching of the whole nation by the discoveries made is not rather the primary object of Universities than the instruction of the few students who gather in their halls: that is the real question at issue between Lord Kelvin, Sir Geo. Stokes, and myself. Are the Universities to devote the energies of the most advanced intellects of the age to the instruction of the whole nation, or to the instruction of the few