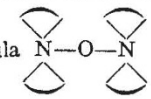
quite recent introduction"; for in chemical books of older date it was always observed, in proof of which see Gmelin's "Handbuch der Chemie" throughout. Gmelin indeed, in the first volume of his great work (4te Auflage, 1843, p. 61, and English Edition, i. 61) lays down the law of the case as follows:—"A number placed before several symbols multiplies them all, *as far as the next* + *sign or comma;* or if it stands before a bracket, it multiplies all the symbols and numbers included within the brackets." This rule is consistently followed all through the "Handbuch," and, so far as I know, in most contemporary chemical writings; but lately it has fallen into disuse, and a numeral placed before a set of unbracketted symbols is supposed to multiply them all, whether separated by addition-signs (+ , .) or not. Now this last practice would be all very well if consistently followed out; but unfortunately it is not, and hence confusion arises. For example, the formula $2SO_3, H_2O$ is used, sometimes to signify $S_2O_7H_2$, that is to say, one molecule of pyrosulphuric acid, while at other times it is employed to denote $S_2H_8O_4$ or $2SO_4H_2$, *i.e.* two molecules of sulphuric acid, which latter, according to earlier usage, would have been represented by $2(SO_3, H_2O)$. Again, in the formulæ of basic salts we find such expressions as $3Fe_2O_3, SO_3$, and $2Fe_2O_3, 3SO_3$, &c., in which the co-efficient 3 or 2 is understood to multiply only the Fe_2O_3, without affecting the SO_3; these formulæ being in fact identical with $SO_3, 3Fe_2O_3$ and $3SO_3, 2Fe_2O_3$ respectively. Now it is easy to see that this varying practice in the use or omission of brackets must lead to confusion, and it is much to be desired that the rule which formerly prevailed should be restored to use.

In conclusion, I hope it will be understood that the preceding criticisms are offered solely with the view of promoting uniformity in our nomenclature and notation, and by no means in disparagement of the volume under review, which is in every way a useful and valuable addition to English chemical literature. H. WATTS

OUR BOOK SHELF

Inorganic Chemistry, Theoretical and Practical. An Elementary Text-Book. By William Jago, F.C.S., &c. (London: Longmans, Green, and Co., 1881.)

Practical Chemistry. Adapted to the First Stage of the Revised Syllabus of the Science and Art Department. By J. Howard, F.C.S., &c. (London and Glasgow: William Collins, Sons, and Co., Limited, 1881.)

THE first-named of these books is a really good text-book for laboratory use; the experiments are clearly described; most useful "laboratory hints" are given; conclusions are carefully drawn from the experimental data obtained. The methods for proving the definition of boiling point, for illustrating the manufacture of sulphuric acid, and for confirming quantitatively the equation $KClO_3 = O_3 + KCl$, are especially to be praised. The student who works through this book will have laid a good foundation on which he may afterwards build; only let him skip those parts which deal with "chemical philosophy." Why should he begin his chemical career by learning that "combining weight" is synonymous with "atomic weight" (p. 31)? Why should he trouble himself with committing to memory the "atomicity" of the most important elements as given on p. 27 of this book? Why should he draw from the statement of Avogadro's law the erroneous conclusion that "the molecules of all gases are of the same size"? Why should he deceive himself by fancying that the formula  (p. 143) gives him accurate and well-grounded information regarding the molecule of nitrous oxide? No good reason can be given for doing any of these things, therefore let the student use this book as a laboratory guide only, and he will doubtless find it a trustworthy guide.

Could Mr. Howard's chemical philosophy be separated from his directions for conducting experiments, his book might also be recommended to the student of practical chemistry.

Although this book deals with laboratory experiments, one is much tempted to think that the author does not really regard chemistry as an experimental science. He deals with the general principles of chemical science too much from a literary point of view. An instance of this method is found in the preface, where we are told that "in former editions . . . the notation of Dr. Frankland was alone used. . . . In the present edition, however, it has been thought advisable to give, in addition, the notation and formulæ used by Professors Roscoe, Williamson, Thorpe, and others." This sentence is decidedly humorous; it connects so closely phenomena which appear to the student of chemistry to have but little in common.

Authoritative statements from the text-books exert a great influence on the author of this book; witness a sentence on p. 62: "A molecule must have all its bonds engaged, that is, it cannot combine with any substance without altering the arrangement of the atoms. Hence, there must always be an even number of *bonds* in the molecule of any element or in any compound." Nitric oxide is of course formulated as N_2O_2; no hint is given that the molecular formula of this gas is NO.

The first few pages contain many excellent examples of the misuse of that much misused word "force."

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 ensure the appearance even of communications containing interesting and novel facts.*]

Primitive Traditions as to the Pleiades

MR. JUSTICE HALIBURTON'S letter of December 1 (vol. xxv. p. 100) will have been read by many as calling attention to a curious subject. As it refers especially to me, and indeed arises out of my remark on the story of the "Lost Pleiad" in Dawson's "Australian Aborigines" (NATURE, vol. xxiv. p. 530), I now write a few lines in reply. But it will not be possible to discuss properly Mr. Haliburton's ideas as to the Pleiades till he publishes them in full, with the evidence on which he grounds them. It must not be supposed that the subject has been unnoticed till now by anthropologists. That the Pleiades are an important constellation, by which seasons and years are regulated among tribes in distant parts of the world, that they are sometimes worshipped, and often festivals are held in connection with their rising, that their peculiar grouping has suggested such names as the "dancers," or "hen and chickens," and that numbers of myths have been made about them—all this has long been on record, though in a scattered way, and at any rate it is well known to students. Mr. Haliburton's letter shows that he has new information to add to the previous stock, and furthermore that he has formed a theory that the Pleiad beliefs go back to a marvellously remote period in the history of man, when these stars were, as he says, the "central sun" of the religions, calendars, myths, traditions, and symbolism of early ages. If the astronomical evidence is to support so vast a structure as this, it need hardly be said that it must go far beyond what Mr.