certain knowledge, 14, Lancaster Gate is supplied by the Grand Junction Company; thus Dr. Frankland has been analysing two samples of the same water, supposing them to have come from different sources. This mistake could not have been found out till after the report was printed, and the results obtained by the two experiments are as follow:—

	Total solid impurity.	Organic carbon.	Organic nitrogen.	Ammonia.	Nitrogen as nitrates and nitrites.	Total combined nitrogen.	Previous sewage contamination.	Chlorine.	Total hardness.
Grand Junction, collected at the cab stand in Woodstock Street, May 17.	24·7	·135	·020	·000	·184	·204	1520	1·62	19·36
Water collected at 14, Lancaster Gate, supposed to be from the West Middlesex Company; but actually from the Grand Junction, May 15.	24·6	·129	·023	·000	·188	·211	1560	1·60	19·36

It may be objected that even these numbers do not approximate so closely as those of Messrs. Wanklyn and Chapman, but they represent actual quantities obtained from water, and not a theoretical "albumenoid ammonia," which may not be an indication of the quantity of organic impurities.

Since Frankland and Armstrong's paper was published an immense number of analyses have been made with the process, and in his annual report to the Registrar General, Dr. Frankland states that he has seen no reason to be dissatisfied with the results. Probably no one, unconnected with Dr. Frankland's laboratory, knows better than Mr. Chapman that improvements in the details of the manipulations have been made during the last two years; and it is, therefore, with very questionable taste that he has reprinted the appendix to the first edition of the book without a single word of qualification.

It is much to be deplored that two young chemists, with such undoubted abilities as Messrs. Wanklyn and Chapman possess, should have rendered themselves notorious by attacking older workers in scientific investigation. It is, no doubt, very laudable in a young and ardent investigator, when he points out that high authorities may err and frequently have erred, but the manner in which these gentlemen have carried out their corrections has made their matter more distasteful. It would almost seem as if they found an incentive to work in the hope of being able to overthrow the "huge superstructures" which have been raised by men who have been longer in the field of scientific research.

OUR BOOK-SHELF

A Sketch of a Philosophy. Part III. *The Chemistry of Natural Substances.* Illustrated by two folding plates and 150 figurate diagrams of molecules in the text. By John G. Macvicar, LL.D., D.D. (Williams and Norgate, 1870.)

IT is a hard matter to give a just account of this pamphlet. The views propounded by the author are so entirely different from those usually held by chemists, and according to the author's own statement they have been so little studied by others, that it is difficult to know exactly how to treat the subject. We should scarcely be justified in saying that the whole system is mere imagination, though some hold this opinion; but the book, though evidently written with the intensest earnestness, is the work of an enthusiast, which will explain the bitter complaints he makes against modern chemists for not taking more notice of molecular morphology. The author endeavours to explain the formation of all matter by the aggregation of the ethereal element, supposing that all bodies tend to assume a symmetrical, and more or less spherical form. The simplest form of aggregation Dr. Macvicar considers to be the *tetrad*, consisting of four specks of the material element so arranged in space that they form the angles of a tetrahedron, the lines joining them indicating the attracting and repelling forces operating between the units. Two tetrads are also assumed to join base to base producing the *bitetrad*, and from these two forms the tetrad and the bitetrad, all the atoms and molecules of our planet are supposed to be produced. This tetrad by attracting another unit opposite to one of its faces constitutes a group of five units, considered to be the atoms of hydrogen, and with the atomic weight of five. The author proceeds to show the mode of genesis of many other elements and compounds by the juxtaposition of these elemental forms. By calculation he can determine by his system the specific gravities of solids and liquids referred to water as unity, in a manner similar to that by which the densities of gases and vapours may be deduced by the old system. This alone would seem to show that the method deserves more attention from chemists than it has yet received. The non-reception of this molecular morphology may be ascribed to several causes: the diction of the author is peculiar, and he writes in a dogmatic manner, which might be expected in a theological work, but is not usually found in a treatise on natural science; then he pushes his inferences to such an extent (or as some would say, rides his hobby so hard) that his conclusions appear somewhat ludicrous, unsupported as they are by experiment: thus he traces the coincidence between the assumed hexagonal form of the molecule of aqueous vapour and the shape of the minimum snow-flake and ice-flower, and "the inflorescence of plants of the monocotyledonous order, in which an aqueous tissue predominates"; he thinks that one of the forms of aqueous vapour which occupies half the volume of the other, may possibly be converted into the second variety at a high temperature, and thus explain the explosion of steam boilers. Again the dimorphism of water may be the cause of the production of animal heat; for water in the body may be transformed from one of its varieties into the other with evolution of heat; but on escaping from the body as perspiration, the inverse action takes place and cold is produced. But underneath all these extravagances there may be a stratum of truth, and we hope that either the author or some one who understands and accepts his views thoroughly, will so develop them as to ensure their reception by chemists.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his Correspondents. No notice is taken of anonymous communications.*]

The Source of Solar Energy

I HAVE not Mr. Proctor's "Other Worlds" by me to refer to, but my impression on reading that book some little time ago, certainly was, that if it did not directly support the *meteoric* theory of solar energy, it at least favoured the idea of innumerable meteors falling into the sun. The principal portion of my letter in last week's NATURE, was not, however, so much addressed against any special views of Mr. Proctor's relative to this *meteoric* theory, as it was against the probability of meteors fall-