treatment, too, the authors differ. Wurtz, with more personal touches and controversial points, traces the main ideas of chemical combination from the time of Lavoisier continuously to his own ; Prof. Tilden, adopting the more natural lecture method, has given us separate histories of the main lines of chemical progress during the Victorian era. We cannot doubt but that the student will find the modern book handier to consult, and sounder, though possibly less stimulating, than its predecessor.

The difficult task of selection has been, on the whole, successfully met by Prof. Tilden. We can heartily commend for its lucid treatment the chapter on stereochemistry, and "the classification of the elements" for its historical completeness and common sense.

The few slips we have observed are mainly printer's errors, *e.g.* the date of the "Sceptical Chymist" is given as 1680 (p. 38). In the account of Dumas' experiments on the composition of water, we are told that the retention of hydrogen by the reduced copper was unsuspected in Dumas' time (p. 80) ; but Dumas himself refers to this error in his original paper. Prof. Tilden repeats the usual derivation of gas, "Gas = geist = spirit." But since the publication of "Gas" in Dr. Murray's Dictionary we thought the derivation from chaos had been accepted. Perhaps we may quote the full passage from Van Helmont, which occurs in the "Progymnasma Meteori" (p. 69, ed. 1682): "Verum quia aqua in vaporem, per frigus delata, alterius sortis, quam vapor per calorem suscitatus ; ideo paradoxi licentia, in nominis egestate, halitum illum gas vocavi non longe a Chao veterum secretum."

La Géologie Expérimentale. Par Stanilas Meunier, Professeur de Géologie au Muséum d'histoire naturelle de Paris. Avec 56 figures dans le texte. Pp. 306. (Paris : Félix Alcan, 1899.)

IN this work, which has just been added to the "Bibliothèque Scientifique Internationale," Prof. Meunier has aimed at supplying a complete and practical series of experimental illustrations of as many different geological phenomena as possible — in this respect going even farther than did the late M. Daubrée in his classical "Études Synthétiques de Géologie Expérimentale." The work is founded on a course of lectures given in Natural History Museum of Paris in 1898 ; and in the Geological Gallery of the Museum in the Jardin des Plantes may be seen the actual apparatus, designed by the author and others, for carrying on the experiments described in these pages.

After a general introduction on the value and limits of the experimental method as applied to geological teaching and research, in which the author replies very effectively to the objections which have been raised to it, he proceeds to treat systematically with the questions involved in supplying experimental illustrations of geological phenomena. He first deals with the results produced by the action of external forces operating on the earth's crust. These are classed as the phenomena of denudation and of sedimentation. Under the first head are classed the action of rain, of rivers, of the sea and lakes, of ice, of subterranean waters and of the wind. It is noticeable that the experiments, many of which are of a novel character, are for the most part such as can be performed with very simple apparatus, of a kind which any ingenious lecturer may readily provide himself with at a relatively small cost, and the experiments are certainly calculated to give point and value to the teaching they are intended to illustrate. The various kinds of sedimentation are treated of in the same way, the action of rain, rivers, seas and lakes, subterranean waters and wind in accumulating materials to form new rocks being successively handled. In the second part of the work we have a series of experiments to illustrate the action of the internal forces at work on the earth's crust. The origin of crystalline rocks, including illustrations of vitrification and devitrification, metamorphism, both contact and regional, and the origin of mineral veins are discussed in a somewhat summary manner, with reference chiefly to work that has been carried on in France ; and this division of the book ends with a rather speculative chapter on the more deeply-seated materials of the globe. The third part of the work deals with volcanoes, earthquakes and the production of mountain-chains. Although the treatment of the various questions is—perhaps necessarily—somewhat unequal, no teacher of geology can fail to gather from this work of Prof. Meunier many useful hints which will prove of great value in illustrating the action of the various forces which have contributed to the production of the features of the earth's crust, while the student and general reader will find it equally full of suggestiveness and novelty.

The Fauna of Shropshire: being an Account of all the Mammals, Birds, Reptiles and Fishes found in the County of Salop. By H. E. Forrest. Pp. viii + 248 + vi ; illustrated. (Shrewsbury and London, 1899).

THIS little book, excellent in its way as a local vertebrate fauna, is somewhat more than its title implies. It gives, for instance, a very well-written and interesting account of the habits of many species of British mammals, more especially the smaller and commoner kinds. Particular attention may be directed to the life-histories of the mole and the shrew, some of the facts in the former being new to us. The great feature of the book is the very excellent account of the mode of development and general habits of the British Amphibia ; this group of animals being apparently the author's favourite subject of study. The reptiles are treated nearly as fully as the frogs and newts ; and here we may notice that the author considers that the legend of the viper's swallowing its young may prove to be based on fact. A much smaller proportionate amount of space is devoted to the birds, for the reason that the author hopes to elaborate this portion of his subject on a future occasion.

Although the illustrations, which are chiefly taken from mounted groups, are less satisfactory than they might be, the work may be commended not only to the naturalists of Salop, but to those of the British Islands generally.

R. L.

La Pratique du Maltage. Par Lucien Lévy. Pp. 248. (Paris : G. Carré et C. Naud, 1899.)

THIS work, which may be classed as belonging to the best type of modern technical literature, is based on a series of lectures given by Prof. Levy at the "Institut des Fermentations de l'Université Nouvelle" of Brussels. At present there is a very open field for such a book, for during recent years no other work devoted specially to malting has been published which attempts, like the one before us, to combine the scientific and practical sides of the question. The work will have most value to readers in this country for the very complete account it contains of recent scientific work connected with germination ; this is given in a very clear and concise form, and the most recent researches of any importance are referred to. The more technical portions of the book bear a continental stamp, and in certain places lead us to think that there are some things connected with malting we do better in England. However this may be, the work as a whole is recommended to those interested in malting as the best technical treatise on the subject at present published ; but it should be borne in mind that it is specially

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