simply expresses the properties of a compound, but it would be difficult to say what properties are indicated by such formulæ as that referred to.

There are a few statements on important subjects that at the present time concern no one but the historian. For example, the classification of salts as normal, acid, or basic, according to the proportion between "the bonds of the acid radical" and "the bonds of the basic radical," was never generally accepted, and is now universally allowed to be an altogether faulty method. The extraordinary prominence given to hydrogen dioxide or "free hydroxyl," which has four pages devoted to it, while sulphuric acid has little more than two, is scarcely justifiable, we think, at the present time. But on the whole, the book is a useful compendium of the principal properties of not only the more important substances but also of many of the compounds of the rarer elements.

OUR BOOK SHELF.

A Treatise on Geometrical Conics. By A. Cockshott and Rev. F. B. Walters. (London: Macmillan and Co., 1889.)

THIS work is not intended to supersede such works as Besant and Taylor, which, being drawn up for University students, naturally cover a good extent of ground, but to meet what is a pressing need in school teaching. The need of some recognized sequence of propositions, as our authors state, has long been admitted. It was with a view to meet this need, as we have previously stated in this journal, that the Association for the Improvement of Geometrical Teaching published its syllabus of the subject, which had been accepted by the Association at its annual meeting in January 1884. The work before us has been drawn up in accordance with the syllabus, the authors' aim being to invest the skeleton of the syllabus with suitable raiment. A main feature of the outline was the prominence given to Adams's property (which boys will call Adam's property), the S U K I (now changed rightly, as O is used for the external point, to the S U O I) proposition. In the parabola, we are told we may employ the property in proving tangential propositions; in the case of the ellipse and hyperbola, the authors use Adams's, and also give two other constructions. But this is a matter of detail. The proofs are neat and well suited to beginners. A capital feature is the appending quite elementary riders to the respective propositions, these not being too difficult; and in most cases, being true riders on the propositions they follow, they will encourage the young student to prosecute a study which becomes very fascinating when once the student gets a grasp of it. A short chapter on orthogonal projection follows that on the parabola, and is likely to be of use as showing the intimate connection which exists between the circle and the ellipse. A large collection of Cambridge problems, duly labelled, closes the work.

We have waited long for this quasi-authorized edition of the Association's syllabus, "thereby hangs a tale," and now it has reached us we are not disappointed. There are very numerous figures, many of which are excellent, but others are like Pharaoh's lean kine, "very ill-favoured."

Phormium tenax as a Fibrous Plant. Edited by Sir James Hector, K.C.M.G., M.D., F.R.S., &c. With Plates. Second Edition. (Wellington, New Zealand: By authority, George Didsbury, Government Printer, 1889.)

THE original edition of this little hand-book appeared in 1872, since which period a great deal of consideration has been given in this country to the further development of vegetable fibres generally, amongst which New Zealand flax or hemp has had its share. The book has such a varied amount of authentic information on the subject with which it treats that the appearance of a new edition is a distinct gain to those—and they are many—who are occupied at present in the investigation of vegetable fibres.

The description of the *Phormium tenax*, its habit and rate of growth, cultivation, transplanting, and propagation, with an account of the native and European methods of preparing the fibre, are all brought together here in a compact form. The reports, prepared in New Zealand by Messrs. Skey, Nottidge, and Hutton, together with those of Profs. W. R. MacNab and A. H. Church, prepared in this country, are also very valuable. These latter appear in full in the new edition, and the former are in some particulars more detailed. The book is, however, almost a reprint of that which appeared in 1872, in some cases even to the reproduction of errors; thus on p. 2 of both the old and new editions the Raupo, *Typha angustifolia*, is printed *Typhus*.

The most interesting part, at the present time, of Sir James Hector's new issue is, in consequence of its being the newest matter, the preface, from which we learn that during the last two years the demand for *Phormium* fibre has been steadily on the increase, and that one important application is for the production of twine for use in the harvesting machine, it having been found that as a substitute for wire in reapers and binders no fibre is equal to it.

Revision of the British Actiniæ. By Prof. A. C. Haddon. Part I. (London: Williams and Norgate, 1889.)

THIS revision of the British sea anemones by Prof. Haddon, will be welcomed by all students of this interesting group. We know a good deal already of our native species, thanks to the writings of Sir J. Dalzell, Dr. George Johnston, and P. H. Gosse; and the last-mentioned author, in his well-known "History of the British Sea Anemones and Corals" (1858), succeeded, by the aid of chromo-lithography, in giving very fair representations in colours of the living forms. But the "Report on the Actiniaria of the *Challenger*," by Richard Hertwig, in which he sought by anatomical investigations to establish a scientific classification of the group, opened up a new standpoint for the study of these forms, of which Prof. Haddon has most wisely and energetically availed himself; and in this first part of his revision we have a most excellent monograph of the *Chondractininæ*, and studies of several genera, which may be regarded as more or less representing the various stages in the evolution of the typical hexamerous Actiniæ. These latter belong to the families *Edwardsidæ* and *Halcampidæ*. There is also a description of the remarkable *Gonactinia prolifera*, Sars, some notes on *Zoantheæ* and on the development of Actiniæ.

Chitonactis marioni, *Paraphellia expansa*, *Edwardsia tecta*, and *Halcampa arenarea*, are described and figured as new species.

Seven plates accompany this memoir, of which the first two, representing *Chitonactis marioni*, n. sp., *Gephyra dohrnii* (von Koch), *Actinange richardi* (Marion), *Paraphellia expansa* (g. et sp. nn.), *Halcampa arenarea* (n. sp.), *Chondractinia digitata* (Müller), and an undescribed species of *Sagartia*, are very beautifully printed in colours, being perhaps the most life-like illustrations of Actiniaria as yet published in the Transactions of any of our learned Societies.

This memoir forms Part V. of the fourth volume of the Royal Dublin Society's Transactions.

Practical Iron-Founding. By the Author of "Pattern-Making," &c. (London: Whittaker and Co., 1889.)

THIS little volume is an attempt to give, in a condensed form, an account of the principles and practice of iron-

founding. To begin with, iron-founding is an art most difficult for the non-professional man to understand, even when going through a foundry, where the various branches of the work are going on before his eyes. How much more difficult it must be for a student to get much real knowledge of the art from a book it is easy to imagine.

As an elementary hand-book this volume will, no doubt, serve its purpose. At the same time, it ought to be clearly understood that the iron-foundry is the only place where iron-founding can be learned thoroughly. A little idea of the art may be obtained by other means, but moulding, of all the engineer's arts, is the one which requires the practical work in an engineer's foundry for its development. The machine tool is largely to blame for the deterioration of our skilled workmen generally, but this has been least felt in the foundry. The moulder must still have his trade between his fingers to be efficient, and no amount of machinery as at present designed will help him to mould, say, a pair of locomotive cylinders in one casting. The book is carefully written, and represents good all-round practice as far as it goes. The illustrations of tools, &c., are clear and accurate. N. J. L.

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.*]

Ice Blocks on a Moraine.

BLOCKS of ice, so far as I know and so far as I remember to have read, are not usual constituents of a moraine. So it may be well to call attention to an instance which I saw lately when walking over the Gorner Glacier with my friend Mr. J. Eccles, who is even more familiar than I am with glaciers, and to whom the sight was novel. At the base of Monte Rosa, where it begins to rise from the Gorner Glacier, are two buttresses of ice-worn rock; the northern called *Ob dem See*, the southern *Auf der Platte*. Between these a glacier, evidently of no great thickness, descends towards the west, and adjacent to each, rather on the in-side, as it may be called, is a little lake. In the northern of these (called the Gorner See, and the only one some five-and-twenty years ago, if I remember rightly) several blocks of ice are now floating; not far from it are the blocks on the moraine.

To explain how they attained their present position, in some cases more than a hundred yards from the water, and probably quite twenty above it, a little more topographical description is needed. The moraine of which they form a part is not a ridge composed of, or at least masked by stones, but a very gentle swell of ice, over which, especially on the eastern side, blocks are scattered in open order. It extends from one lakelet to the other, and is produced as follows. As said above, the glacier which passes between these rock-buttresses is by no means a thick one, but the southern flank of Auf der Platte is swept by a huge ice-stream which descends from the snow-fields of the Lys-joch, and is prevented from much lateral expansion by the pressure of a second large glacier which drains the northern face of the Zwillinge. This enormous mass of ice tends to pond back the smaller glacier; thus the moraine, mentioned above, is mainly formed by the left lateral moraine of the latter, by a few blocks which come down its mid stream, and possibly by the right lateral moraine of the Lys Glacier. The obstructed ice, however, is forced up so as to form a sort of flattened wave, so that if one were coming right down the face of Monte Rosa one would mount 50 or 60 feet from the margin of the Gorner See, or perhaps half as much from the middle part of the Monte Rosa glacier, and then, after a slight descent, would again ascend a gentle slope in order to arrive on the broad united ice-stream which bears the name of the Gorner Glacier.

The blocks of ice are numerous. A few of the largest must contain about 8000 cubic feet—many vary from 2000 to 5000 cubic feet—indeed, in the northern part of the moraine I think the ice exceeds the rock in actual volume. These ice-blocks, in some cases, are mounted on ice-pedestals, just as is rock in a glacier-table; the support rising perhaps a couple of feet above the level of the glacier. Of course they were "perspiring" freely under a July sun, and do not make a long journey; probably few succeeding in getting a furlong away from their source.

That these blocks of ice began as bergs in the Gorner See is indubitable. They have been elevated to their present position by the strugggle between the confluent ice-streams; the smaller of these impinging upon the larger almost at right angles, and being thus forced upwards by the obstacle. The number of the blocks suggests the possibility that the glacier itself may form part of the bed of the Gorner See; for they would be more readily removed from the water, if the actual bed of the lakelet, instead of being at rest, were slowly travelling forward and upward.

The above description illustrates the way in which (as I have seen suggested) blocks of rock in past geological ages may sometimes have been carried up-hill by glaciers. At the same time I may observe that I should myself be reluctant to found upon it any very sweeping generalization. T. G. BONNEY.

The Inheritance of Injuries.

IN the notice of Dr. Weismann's "Ueber die Hypothese einer Vererbung von Verletzungen" (NATURE, July 25, p. 303) there occurs the following commentary:—It is not so certain that all will admit Weismann's contention that the demolition of the inheritance of injuries furnishes strong presumptive evidence that acquired characters are not inherited. *It might well be urged that there is a great distinction between characters which are obviously not useful (such as injuries) and useful characters.*"

I have italicized the last sentence, desiring to call the attention of those interested in the subject to some points of difference between useful and not useful or disabling variations, as these may be supposed to lend themselves to transmission by inheritance. The appreciation of these points of difference is calculated, I believe, to greatly assist in settling the important question as to the inheritance of acquired characters.

In my work on "Dissolution and Evolution and the Science of Medicine" (Longmans and Co.) an attempt is made to show from various considerations that non-congenital diseases, including injuries, are not inheritable. The chief contention is that diseases and injuries are simply disorganizations of pre-existent functions and structures. They are not, as useful and normal characters are, integrated and organized arrangements of the organism's energies, but bodily disintegrations inseparable from the actions of the environment. Diseases as dissimilar as a common burn and general paralysis of the insane, are shown, in the work I speak of, to be alike in so far that they are disintegrations of the body and causally related to the environment. It is this intrinsic nature of disease and injuries and their dependence on external conditions which goes far, as I believe, to make them uninheritable. Since my work is probably accessible to few of the readers of NATURE, I may perhaps be permitted to quote the following extracts as further argument and illustration.

"True diseases, as we have just seen, cannot be separated from their causes; and causes, being of the environment, are not handed down. But there are additional reasons for the feeble hold which heredity has upon pathological states. When we discriminate between the variations of function and structure that are passed on by parent to offspring and those that are not, we are forced to see that natural selection, working always in confederation with heredity, seizes upon *favourable* variations. Natural selection appropriates organismal acquisitions. But analysis discloses the fact that diseases are losses, not gains; are unfavourable variations, and offer no 'purchase' for the co-operative influence of these two modes of action. . . . But more important than influences of this sort is that influence which springs from the differences of nature and conditions between normal and abnormal traits. Normal structures were evolved in long periods of time, and have been transmitted through generations unnumbered; therefore, the tendency to their perpetuation by inheritance must be immensely predominant over any tendency to the perpetuation by inheritance of the transitory changes of disease. I believe that the 'vestiges' of once useful structures owe their astonishing persistence to the fact that they have become deeply pressed into the organic arrangement by the selection and transmission of such structures for secular periods. This makes intelligible the rarity with which deprivation of a limb or other part leaves any impress upon offspring. Though circumcision has been practised among the Jews for ages, it has not produced congenital preputial imperfection in the race.