resqueness arising from the surrounding timber, the rookery wood above the old house, and the row of fine Ilex trees below.

Before we conclude these notes on Llandudno and its environs it may be as well to inform strangers that they will seek in vain "the rock whose haughty brow frowns o'er Conway's sable flood." Neither at Diganwy nor anywhere else on the Llandudno side of the Conway could Gray's Bard have taken his fabled "header." The cliffs on the opposite side of the river in the grounds at Bodlondob might perhaps at high water have served the purpose, but we are not sure about it. As we have already said, we decline accompanying Mr. Price on his wider circuits in this part of Wales, and most certainly we should dissuade any of our readers from putting into practice his novel little game, suggested in pp. 99–100, with a design to enliven a stay at Penmaenmawr. It is, in brief, to get into a strong and well-padded box, or we might say "coffin," at the top of one of the "streams of stone which were once lava, and which come with a rush at a very high incline down the hillside." As far as we can judge, shooting a cataract would be nothing to it. It is fair to add that Mr. Price's book has not many such eccentric suggestions as this, and for amusement as well as information it deserves the perusal of all explorers around Llandudno.

MINOR NOTICES.

MR. DARWIN has reprinted in a revised and expanded form his masterly Essay on the Movements and Habits of Climbing Plants* which first appeared in the Journal of the Linnean Society in 1865. In this paper he calls attention to certain tendril-bearing plants, such as Bignonia capreolata, Cobæa, Echinocystis, and Hanburya, which in the way of movement display as beautiful adaptations as can be found in any part of the kingdom of nature; and his account of them is an admirable example of delicate scientific observation. It is pointed out, moreover, that intermediate states between organs fitted for widely different functions may be observed on the same plant of Corydalis claviculta and the common vine; and this, Mr. Darwin suggests, illustrates in a striking manner the principle of the gradual evolution of species. Thus a leaf, while still subserving its original functions, may become sensitive to a touch, and grasp an adjoining object. In fact, it appears that climbing plants have utilized and perfected a widely distributed and incipient capacity, which, as far as is known, is of no service to ordinary plants. The most different organs—stems, branches, flowers, peduncles, petioles, mid-ribs of the leaf and leaflets, and apparently aërial roots—all possess a power of movement in manifest relation to their wants. The first action of a tendril is to place itself in a proper position; and, if a twining plant or tendril gets by accident into an inclined position, it soon bends upwards, though secluded from the light, the guiding instinct being the attraction of gravity. There is also a spontaneous revolving movement which is independent of any outward stimulus, and is contingent only on youthfulness and vigorous health; and all tendrils, whatever their homological nature, and the petioles or tips of the leaves of leaf-climbers, and apparently certain roots, have the power of movement when touched, and bend quickly towards the touched side. Tendrils, after clasping a support, but not after a temporary curvature, always contract spirally. Mr. Darwin believes, with Sachs and H. de Vries, that these movements are usually due to unequal growth—that is, more rapid growth on one side than the other—but that it is not so in the case of rapid movements from a delicate touch. We must quote the statement with which the writer concludes of the high place in the scale of organization to which a tendril-bearer may climb:—"It first places its tendrils ready for action, as a polypus places its tentacula. If the tendril be displaced, it is acted on by the force of gravity, and rights itself. It is acted on by the light, and bends towards or from it, or disregards it, whichever may be most advantageous. During several days the tendrils or internodes, or both, spontaneously revolve with a steady motion. The tendril strikes some object, and quickly curls round and firmly grasps it. In the course of some hours it contracts into a spire, dragging up the stem, and forming an excellent spring. All movements now cease. By growth the tissues soon become wonderfully strong and durable. The tendril has done its work, and has done it in an admirable manner."

A manual of a kind which was much wanted, and which will be of great value to students, has been prepared by Dr. Huxley and Dr. Martin †, giving a course of practical instruction in elementary biology adapted to the lectures of the Royal School of Mines at South Kensington. It is, in fact, a guide to laboratory work. A number of common and easily obtainable plants and animals—such as yeast, protococcus from the mud in roof-gutters, proteus animalcule, colourless blood corpuscles, bacteria, moulds, stone-worts, bracken, bean-plant, mussels, lobsters, frogs, &c.—are taken as examples of the leading modifications of structure in the vegetable and animal worlds; and a brief description of each is given, with detailed instructions as to the chief facts relating to each, so that the terms used in biology may be represented by clear and definite images, and "a firm foundation laid upon which to build up special knowledge." We are glad to observe the distinct attention to humanity which is shown in the instructions as to dissection:—"Lay a frog which has been killed with chloroform on its back," &c.; "The pulsation of the heart should be studied in a frog rendered insensible by chloroform or by being pithed;" and we presume it is only by an inadvertence that this caution is not inserted, as a general rule, at the beginning of the instructions, so as to apply to the third experiment.

For some years past a series of popular scientific lectures* has been given in Manchester by the Professors of Owens College and other men of science, and the plan has proved highly successful. In 1866, the first year of the experiment, upwards of four thousand persons attended the thirteen lectures of the season. In 1870 the attendance had risen to nine thousand. These numbers have not been maintained, no doubt because the novelty of the lectures has passed away; but there appears to be a steady audience of some seven hundred who regularly attend, while of course special lectures attract more largely. Moreover, the lectures are also published, and have a very wide circulation. There can be no doubt that in this way good work is being done in the diffusion of scientific knowledge and a taste for scientific research; and great credit is due to the gentlemen who have kept up the movement both by their personal efforts and liberality. The three volumes of lectures now before us are full of varied and interesting instruction, and form a cheap supply of excellent family reading.

Mr. Hartley has republished, with some additions, the substance of a course of lectures delivered at the Royal Institution.† He gives a very good summary of the principal features of the subject, and especially of the discoveries of M. Pasteur, the French chemist. Mr. Hartley questions the accuracy of some of Dr. Bastian's experiments and the conclusions drawn from them.

The second part of Mr. Palgrave's *Children's Treasury of English Song* ‡ displays the same delicate taste and happy discrimination as the earlier one, and of course affords scope for a higher range of thought and feeling. It is a little volume which not only children, but all lovers of the best poetry, can enjoy. Its modest size and limp cover irresistibly suggest it as a pocket-companion, and a weary journey or detention might thus be delightfully solaced.

Sir R. K. Wilson has undertaken to fill up what is undoubtedly a gap in the history of English law.§ We have in Blackstone's *Commentaries*, in so far as they are to be trusted, a comprehensive view of the state of the law at the time at which he wrote, and there are also abundant means of ascertaining what the law is at the present moment. It is of great importance, however, to observe the nature of the changes which have taken place during the intervening period, and the student has hitherto been at a loss for any systematic information on this subject. It has been Sir R. Wilson's object to supply this deficiency, and he has succeeded in doing so to a certain extent in a very clear and interesting manner. It could have been wished that he had applied himself to a more thorough and exhaustive work; but an author has a right to be judged by the aim which he has himself chosen, and the effort in the present instance is limited by the conditions of an educational text-book intended for general use. It is only justice to say that as far as it goes it is very well done, though the writer has, we think rather erred in allowing his own bias for a particular school of legal philosophy to appear so conspicuously. He adopts Sir Henry Maine's remark that there is scarcely a single law reform effected since Bentham's day which cannot be traced to his influence, which is no doubt in a sense true; but in the actual development of the law other agencies—such as that of the judges—have also been at work, and to these Sir R. Wilson is hardly fair. The first part of the book gives a sketch of English law at the beginning of the reign of George III.; next we have an account of Bentham's endeavours to rationalize and purify it; and, finally, a review of the principal changes which have been made in the law since that period. There are no doubt a good many persons who suppose that the law has been always pretty much the same as that with which they are acquainted, and who will find it highly instructive to turn over the pages of this volume, and to observe in what comparatively recent days a new direction has been taken on various important questions, or a great advance made on former stagnation.

Mr. Barnett Smith's mission is, it seems, to disclose to the world various forms of literary genius of which he fancies it might otherwise remain ignorant, and he has apparently come to the conclusion that, in doing this service for others, he is bound also to do justice to himself. In the preface to his *Poets and Novelists* ‖ he therefore favours us with a modest estimate of his own gifts. It is possible, indeed, that without this authoritative guidance, some of his readers might fail to discover either the "exhaustiveness" or the "permanent value" which he attributes

* *The Movements and Habits of Climbing Plants.* By Charles Darwin, F.R.S. Second Edition, revised. With Illustrations. John Murray.

† *A Course of Practical Instruction in Elementary Biology.* By T. H. Huxley, LL.D., assisted by H. N. Martin, M.B., D.Sc. Macmillan & Co.

* *Scientific Lectures for the People; Delivered at Manchester.* 1866–74. 3 vols. Manchester: Heywood. London: Simpkin, Marshall, & Co.

† *Air, and its Relations to Life.* By Walter Noel Hartley. Longmans & Co.

‡ *The Children's Treasury of English Song.* Second Part. Selected and Arranged, with Notes, by Francis Thomas Palgrave. Macmillan.

§ *History of Modern English Law.* By Sir R. K. Wilson, Bart. Rivingtons.

‖ *Poets and Novelists: a Series of Literary Studies.* By George Barnett Smith. Smith, Elder, & Co.