

leaves, long leaves, short leaves, leaves in two ranks, leaves in spiral arrangement; the latter being probably the primordial disposition, the two-ranked arrangement being more apparent than real. When the stem and branches grow erect, as they do in some varieties, particularly in that called the Irish yew, the leaves are in spiral order, and when the larva of a little fly (*Cecidomyia taxi*) has its abode in the young buds, the degenerated leaves are in spires.

In this country, at least, the yew is not generally found in association with other trees of the same or other species. Woods entirely or mainly composed of the tree are rare. One such we know, and it is duly noted in the book before us: we allude to the very remarkable grove at Cherkley Court, near Leatherhead. Here are some ninety to ninety-five acres covered with yew-trees, to the almost, if not complete, exclusion of everything else. They form a most impressive sight, and still more impressive than their numbers is the variety of their forms, their difference "in habit," as gardeners say. They are all growing under like circumstances, and yet there is this astonishing variation in outward form. There is a similar but much less extensive group at Cliveden, the gnarled roots of which, clinging on to the chalk escarpment for dear life, are very picturesque.

The isolated condition of yew-trees is no doubt due to the trees having been planted where they now are, as in churchyards, or along the roadsides.

If old yews do not exhibit the highest type of arboreal beauty, there are few trees more imposing. This, no doubt, leads to exaggerated estimates of their age. On this subject quite a literature has grown up. Dr. Lowe has a statistical chapter relating to it in the present volume, reprinted from the *Journal* of the Linnean Society; but the results are not uniform, and it is evident that further research on the comparative rate of growth of various trees is to be desired.

In the book before us the author treats the yew from almost every point of view; he has been conscientious in his work, accurate in his statements, careful in the verification of his references—in fact, he has produced a monograph which will be consulted in the future, and which will be read with interest by the lovers of trees at the present day. The book, too, is well printed, well illustrated, and provided with a sufficient index. A few amendments may be suggested—Cliveden is in Bucks, not, as stated, in Berks; the "De Candolle," so often mentioned, was "Augustin Pyramus," not "Alphonse," as might be inferred; *Gardener's Chronicle* should be *Gardeners'*; and the reference "1870-1890" is very inadequate, seeing that the periodical in question dates from 1841, and contains various references to the yew in its earlier as in its later volumes; "Helmsley" should be "Hemsley." Reference to Sargent's "Silva of North America," which contains an epitome of almost all that is known concerning the yew, whether in America or elsewhere, would be desirable in a new edition. We suspect from the date of publication that the author of the "Yew-Trees of Great Britain" could hardly have been able to consult the "Silva." The microscopical structure of the wood and leaves should also receive some attention, as it differs considerably from that of other conifers. Yews, for instance, have no resin canals.

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OUR BOOK SHELF.

Untersuchungen ueber Bau Kerntheilung und Bewegung der Diatomeen. Von R. Lauterborn. Mit 1 figur im Text u. 10 Tafeln. (Leipzig: Verl. v. Wilhelm Engelmann, 1896.)

It is some years since Bütschli declared that centrosomes could be identified during life in certain diatoms, just as Van Beneden had already described them in the segmenting eggs of *Ascaris megalcephala*. But whilst the worm has furnished the text for numberless papers and memoirs, the diatoms have been passed by and left unheeded.

Dr. Lauterborn's book will again direct attention to this neglected group, for the observations he records are so startling in themselves, and so unlike anything else with which we are as yet acquainted, that they will urgently require confirmation at the hands of other investigators.

The author has succeeded in following out many of the details of cell-division in the living cells, and this fact is calculated at once to arrest the attention of cytologists, who are all aware of the great difficulty which exists in making much out of a nucleus till it has been fixed and starved. Perhaps the most remarkable statements in the volume are those which are concerned with the origin and structure of the spindle and its relation to the centrosome. The latter structure is a spherical body lying near a depression in the nucleus, but when karyokinesis is about to begin, a second sphere is seen to lie close to the centrosome, and Lauterborn believes it has been actually derived from the latter. This second body is the rudiment of the central spindle, and it wanders about independently of the centrosome, and becomes rapidly of an elaborately complex nature. Ultimately it is found within the nucleus, whilst the centrosome is left outside. Meanwhile two masses of protoplasm become apparent in an excentric position at the ends of the barrel-shaped spindle, and these are regarded by the author as representing two fresh centrosomes. Finally the chromosomes split, become arrayed on the spindle, and are distributed to the two poles. But even in this process we meet with an anomaly, for there seem to be no mantle fibres formed, or indeed any other special mechanism by which the chromosomes find their way to their destination; they are stated to move automatically to the ends of the spindle. The cell-wall, which divides the diatom into two cells, originates in much the same way as in *Spirogyra*, beginning at the cell periphery and advancing to the centre.

The above sketch will show that these plants, of which *Surirella* has here been taken as a leading type, differ in many respects from other organisms in the mode of their cell-division. But the author by no means confines himself to the topic of karyokinesis. The structure of the protoplasm, and of its varied organised inclusions, as well as the remarkable movements exhibited by the plants themselves, all come in for a share of attention. In short, the book is one which should serve to stir up research into a group of plants which have hitherto been too much regarded as the special property of amateurs who, with the aid of expensive microscopes, delighted to count striæ and to make species.

Journal and Proceedings of the Royal Society of New South Wales for 1896. Vol. xxx. Edited by the Honorary Secretaries. Pp. xxiv + 410 + cxlviii. (London Agents: George Robertson and Co., 1897.)

THE twenty-four papers in this volume testify to scientific activity at the antipodes. In his presidential address Prof. T. W. Edgeworth David sums up the contributions of New South Wales to scientific knowledge during