We are sure that English microscopists will be very grateful to Professor Huxley for having made a stand against the absurd method of nomenclature now adopted by many of our histological writers. We suppose it would have been impossible to introduce woodcuts into such a volume as the present one, although it would be of undoubted importance to the student who is ignorant of the different forms he is looking for. However, we may, in concluding this imperfect notice of a very important volume, express our thanks to the two gentlemen—Professor Huxley and Dr. Martin—who have laboured so well for our advantage.

CLIMBING PLANTS.*

ALTHOUGH this book is called a second edition it is really, so far as the general public is concerned, the first time that the work has been issued. It is true that it was first published in the "Journal of the Linnean Society," but then such publication merely supplies the book to the Fellows of that Society, whilst in its present form it is "comeatable" by the whole world. It certainly appears to us a wonder that Mr. Darwin should have kept such an important light under the bushel of a Society's publications, and that, too, for so long a period. However, now that he has given us the work in a clearer form, with additional facts, and with the few but clever engravings from drawings by his son, George Darwin, we have only to thank him, as we have always done, for the importance of his labours. The present book has an especial value over the earlier edition, in that it takes up the point which has been so ably discussed by Professor Sachs in his recently translated "Text-book of Botany," of the cause of the motion of tendrils. It is remarkable, too, that Mr. Darwin differs from Professor Sachs as to the cause of certain movements of the tendril, and in this it appears to us that there is much that is reasonable in Mr. Darwin's view. This, indeed, is the most interesting, because the most novel, part of the book. "Sachs," he says, "attributes all the movements of tendrils to rapid growth on the side opposite to that which becomes concave. These movements consist of revolving nutation, the bending to and from the light and in opposition to gravity, those caused by a touch and spiral contraction. It is rash to differ from so great an authority, but I cannot believe that one at least of these movements—curvature from a touch—is thus caused. In the first place, it may be remarked that the movement of nutation differs from that due to a touch, in so far that in some cases the two powers are acquired by the same tendril at different periods of growth; and the sensitive part of the tendril does not appear capable of nutation. One of my chief reasons for doubting whether the curvature from a touch is the result of growth is the extraordinary rapidity of the movement. I have seen the extremity of a tendril of *Passiflora gracilis* after being touched distinctly bent in 25 seconds, and often in 30 seconds; and so it is with the thicker

* "The Movements and Habits of Climbing Plants." By Charles Darwin, M.A., F.R.S., &c. 2nd edition, revised, with illustrations. London: John Murray. 1875.

tendril of *Sicyos*. It appears hardly credible that their outer surfaces could have actually grown in length, which implies a permanent modification of structure, in so short a time. The growth, moreover, on this view must be considerable, for if the touch has been at all rough the extremity is curled in two or three minutes into a spire of several turns." It must be at once confessed that in regard to this question the probability of the argument lies on Mr. Darwin's side. For it is utterly impossible to suppose that any development of tissue could occur in so short a period of time. But this is only one point of interest in the work before us, which contains many. For example, there is the curious fact that a climbing rose will ascend the walls of a house if covered with trellis, without there being any explanation of the fact. Mr. Darwin says:—"How this is effected I know not; for the young shoots of one such rose when placed in a pot in a window bent irregularly towards the light during the day and from the light during the night, like the shoots of any common plant; so that it is not easy to understand how they could have got under a trellis close to the wall." And we do not see that Professor Asa Gray has done very much to help us on this point, though Mr. Darwin thinks he has. Indeed, we are very much disposed to consider that the tendency of certain climbing plants to creep along and to show an apparent knowledge of the parts on which they are growing is only to be explained by assuming the possession by plants of certain powers that have been hitherto allowed by Biologists to exist in animals alone. And we think that anyone who carefully reads this book will see that it is utterly impossible to explain certain motions of plants by the ordinary rules of botanists. We should have liked to quote the author's summary on this very important point, but as we cannot, we would especially direct our readers' attention to page 202, and that of succeeding paragraphs. We cannot do better than conclude our notice of this excellent book with the following quotation:—"We see how high in the scale of organisation a plant may rise when we look at one of the more perfect tendril-bearers. 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."