Rebiews.

<section-header><section-header><section-header><text> THE VEGETABLE KINGDOM.*

and trimorphic neterostyled pinnes, therefore We have no right to maintain that the sterility of species when first crossed, and of their hybrid offspring; is determined by some cause fundamentally different from that which determines the sterility of the individuals both of ordinary and of heterostyled plants when united in various ways. Nevertheless, I am aware that it will take many years to remove this projudice.

This Mr. Darwin must expect when (two pages before) he confesses that

before) he confesses that Whon distinct species of plants are crossed they pro-duce, with the rarest exceptions, fewor seeds than the normal number, this unproductiveness varying in different species up to sterility so complete that not even the empty capsule is formed. And not only is the parent more or less sterile; but the hybrids raised from the fow seeds actually produced are the same, though the degree of their sterility does not always correspond with the degree of difficulty in uniting the parent species.

The series is but hybrids raised from the for useds schally produced are the same, though the degree of their strillity does not always correspond with the degree of difficulty in uniting the parent species. The only modifying facts are that the unpro-ductiveness is much influenced by the conditions to which the crossed species are subjected, and that the increasing sterility of hybrids counts if the conset of the conditions of the conditions to which the crossed species are subjected, and that the increasing sterility of hybrids counts bitherto been always practised between them. Here, then, we have two principles-crossed species are more or less sterile, and in the result-ing hybrids this unproductiveness is increased; proceed individuals of the same species are im-proved by the cross, provided there are such alight differences in their productive systems as are sufficient to excite the mutual action of the sexual elements (p. 347). Both these principles make for the persistence of species; indeed, the marvel to us is how any one can infer from them that what prevents crossed species from being fortice is only the wart of proper differentiation in their sexual elements. In the vegetable king-dom, if anywhere, we ought to be able to begin to trace that passing of one species into another for which our author contends. Plants are sta-tionary and shortlived, and for many other reasons are better subjects for experiment than animals. Moreover, among plants the boundary between species and variety is less sharply defined than else-where; botanists constantly differ as to whether this or that of the secores of apecies of roses or willows should not be classed as mere variety. But is anyone bold enough to assert that, under proper conditions, the sloc, the cherry, and the plum, all apecies of genus prunua, can be crossed follow if species is destroyed), that such fertilias-tion will also hold for other trees of the rose trib to which prunus belongs? This, it seems to us, is what Mr. Darwin should aim at produ

* The Effects of Cross and Self Fertilisations in the Vege-ble Kingdow. By Charles Darwin, M.A., F.B.S., &c. -London : John Murray, 1876.

pairs, and, when they had thus become herman, brite marking the second to an attract the vorules was also bear a double set of reproductive in the iterative the vorules was too the second the second the vorule in the iterative of the orules was too the second t

"same species" (p. 460). Now, we feel a deep respect for Mr. Darwin's patience and clearsightedness as an observer and tubulator of facts; but we must strongly demur to the logical soundness of the above conclusion. We will put aside for a moment the transcendental truth recorded in the first chapter of Genesis, and argue simply from our author's own facts. In whatever way, then, species differ from individuals, whether funda-mentally or not, how can this difference be leasened by the consideration that individuals of the same species improve by breeding together, while crossed species and hybrids are sterile ? You cross the individuals in order to promote fertility by getting differentiated sexual elements; yet, when the elements have been somewhat further differentiated, breeding becomes difficult or impos-sible. We cannot see how Mr. Darwin's inference follows from his data. Surely we may rather draw "apecies behave so differently from crossed indi-" viduals, therfore there is some vital difference. " between species and individuals." The book, indeed, reminds us of the author's earlier work on " the Variation of Plants and Animals under " Domestication," in its array of facts marvellous and often confessedly uncertain conclusion — which small conclusion is set forth with great fairness, every fact being carefully frought forward which tells agains it; while in the background appears a quite different and infinitely more important con-clusion, which we are invited to accept because Mr. Darwin has tabulated thousands of facts bearing on the smaller colusion, and has summed up the result with conclusion, and has summed up the Now, we feel a deep respect for Mr. Darwin's clusion, which we are invited to accept occurate an Darwin has tabulated thousands of facts bearing on the smaller conclusion, and has summed up the result with the utmost equity. This we decline to do. We are glad to have it confirmed by several series of wonderfully careful experiments that cross-fartilisation (absolutely necessary to some plants) is a boon to most even of those capable of self-fertilisation. It gives stronger, taller plants. It accounts, far more than the temperature, for the zones of vegetation on mountain slopes—stray individuals above or below the line would lose their chance of cross-fertilisation, and therefore their offapring would dwindle away. But when we find that, "in those great families of plants " containing many thousand allied species, the " stigma of each distinguishes with unerring cer-" tainty it eavn polien from that of every other " stigma of each distinguishes with unerring cer-"tainty its own pollen from that of every other "species" (p. 467), we cannot help feeling that nothing has been as yet adduced to show that species is only a long continued variety, but rather that the whole teaching of the book is distinctly in the opposite direction.

that the whole teaching of the pook is distinctly in the opposite direction. But, without at all acquiescing in a conclusion only set forth in the very last pages of the book, we can delight to follow Mr. Darwin through his experiments. He begins by setting forth the ways in which cross-fertilisation is ensured; the serses are often separated, and in many cases the pollen and stigma' are matured at different times—every one can notice this in the male and female aucuba; mechanical contrivances of wonder-ful beauty often prevent self-impregnation. Plants are for their own good adapted to the plants (p. 6, note). Even the plants which can only be self-fertilised (the bee-orchis, we believe; is one) yet re-tain traces of having been formerly adapted for cross-fertilisation. Were not cross-fertilisation de-sirable, the flowers might be closed, as in those plants called cleistogene, and a very small amount of pollen would have been enough. The subject has

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The plant which Mr. Darwin followed

ments were made, and the way in which the chance of error was reduced to a minimum.

ments were made, and the way in which the chance of error was reduced to a minimum. Mr. Darwin has once more proved himself a patient investigator, worthy to rank with men like Hildebrand and Kölreuter and Godron and Ker-ner. He has clearly proved that fertility is im-menely affected by slight changes in the conditions of life, "nothing in nature being more wonderful "than the sensitiveness of the sexual elements "to external influences and the delicacy of their "affinities" (p. 467). Thus the Eschecholitais is completely self-sterile in Brazil, but becomes self-fertile in England; plants from English seed, couversely, becoming self-sterile when grown in Brazil (p. 343). He has also clearly proved the value of crossing ; though he will never persuade us that the old words, "Male and female created He them," may be diluted into: "the immense "advantage gained to the offspring by the union "of two distinct individuals is amply sufficient." to account for the genesis of the two seres" (p. 462). Leaving out, then, that more important inference which Mr. Darwin does not attempt to prove, but which he allows now and then to loom on us through a haze of words, we find nothing in the book which denies, but very much which the facts recorded in this book see either how the facts recorded in this book wo fut genesis of seres can be harmonised with that Scriptural record on which we take our stand. Our quarrel with him is that, without the shadow of a proof, he speaks of those specific observation has shown to be permanent, and which Scripture decknes were stamped on the first individuals when each was created after its kind. Mr. Darwin has once more proved himself a

PARLIAMENTARY GOVERNMENT IN ENGLAND.*

PARLIAMENTARY GOVERNMENT IN ENGLAND.* Mr. Bisset is evidently more at home at writing in party periodicals, or in a political pamphlet which should be read and forgotten in about the same time, than in writing history. His concep-tion, indeed, of what he calls "History" does not rise higher than that it may be a vehicle for political invective and appit; whils his facts, so in a from being "stubborn things," are singularly phastic, if not absolutely unreal-things or appear-ances to be dealt with as we might deal with the mirage of the desert. He has one set of weights and balance for "tyrants," and another for "Democrats," and what is wicked in the one becomes more than vehial, absolutely praise-toorflow the is enrolled. He wants words to express bis scorn and detestation of the practice of not confronting witnesses with the accused in a State trial; but, when the Judges of Charles I. do the same, then it is no longer wicked and cruel and tyrannical, but the practice was to be vindicated on the plea of custom. Now, we protest against volumes written in this narrowness of temper, and with this partian unfairness, being called a "History". History demands another spirit, and equires qualities, of mind which. Mr. Bisset has not shown in this nor indeed in any of his publi-cations. He never rises above the level of a partisan pampleteer, though he sometime sinks helow it. Th his page, Fyn and Bradshaw, Mar-tin and Lilburne, are high-minded, noble patriots, for whom he exhausts the vocabulary to find terms of praise ample enough to express their greatness; whild, as to the lawyers and statesmen of the Tudor and the Stuart dynasties, they are, in the elegant phraseology in which he loves to induge, "a pack of wolves in human form" (p. 19), though in this category he includes Sir Thomas if to wn purpose, for it deprives the author of any oonsideration which he might otherwise have ob-tained. A conspicuous instance of his unfairness is seen in his dealing with the question