MR. DARWIN AT THE ANTIPODES.

"The native [Maori] saying is, 'As the white man's hat has driven away the native rat, as the European fly drives away our own, so the farmer's seed is about to disappear before the white man himself.'" Thus quotes Dr. Hooker, the eminent naturalist of our Kew Gardens, in a remarkable article in the new number of the Popular Science Review on "The Struggle for Existence amongst Plants." The European house-fly is the native blue-bottle of New Zealand, so that settlers, knowing its value in boxes and bottles to their inland stations. So, too, in the vegetable world, the vegetable emigration from Europe seems to drive before it the native products of the New Zealand soil.

"The noisy train of European migration is not more surely doing its work than the steady tide of English weeds, which are creeping over the waste, cultivated, and virgin soil, in annually increasing numbers of genera, species, and individuals." Dr. Hooker quotes from a few pages of effect:

"You would be surprised at the rapid spread of European and other foreign plants in this country. All along the side of the main lines of road through the plains, a Polygona (sarracenia), called 'core-grass,' grows most luxuriantly, the roots sometimes two feet in depth, and the plants spreading over an area from four to five feet in diameter. This dock (Rumex obtusifolius or R. crispus) is to be found in every river-bed, extending into the valleys of the mountain rivers, until these become marshy. A species of Epilobium, growing luxuriantly nearly up to 6,000 feet. The watercress increases in our still rivers to such an extent as to threaten to choke them altogether. In fact, the Avon, a very deep stream, running through Christ Church, the animal cost of keeping the river free for navigation and for purposes of drainage exceeds 800l. I have measured stems twelve feet long and three quarters of an inch in diameter. In some of the mountain districts, where the soil is loose, the white clover is completely displacing the native grasses, forming a close sward.

—and later in his article he tells us the most remarkable fact of all, that—

"The little white clover, and other herbs, are actually strangling and killing outright the New Zealand flax (Phormium tenax), a plant of the most unusual, hardest, and toughest description, that forms large masses of woody rhizomes, which send up tussocks of sword-like leaves, six to ten feet high, and incomparably strong in texture and fibre. I know of no European plant of which the New Zealand flax can be likened, so as to give a correct idea of its durability and strength. I do not know who does this work; in some respects the great tussocks of Carex paniculata approach it. It is difficult enough to imagine the possibility of white clover invading our bogs, and smothering the tussocks of this Carex, but this would be child's play in comparison with the resistance the Phormium would seem to offer."

It is an illustration of the same process that the European horse so increases in South America as to gain rapidly upon the native animals of these plains, and that in New Zealand the English pig runs wild and multiplies at a rate which is a serious danger to the sheep farmers, whose flocks of lambs the wild hog devours. That a little and apparently feeble plant like clover should be able to win a complete victory over the formidable sword-flax of New Zealand, and that the English fly should drive out the bluebottle which is such a nuisance to the settlers, are striking illustrations of the apparent power which human civilization seems to lend to even the animals and plants that have thoroughly adapted themselves to its conditions,—illustrations which inevitably suggest the supersessions of view of the subject conveyed in the Maori proverb mentioned above. This is the spirit of Mr. Darwin's great work, and it seems to me a strong argument for abandoning this article. It seems as if the mere local connection with civilized beings which is implied in buzzing in civilized windows and growing on ploughed fields, were a physical tonic to the constitution of animals and plants which make them, when put in competition with the native invertebrates, animals, or plants, able to withstand easily a victory as civilization wins over barbarism. Does not the English fly construct a cunning from its residence in English larders, which makes it more than the match of the big Maori bluebottle? Have not the little clover and watercresses imbibed, by the process of selection, structural habits so different from the comparatively poor English soil, which gives them an advantage over the plants that have grown up for ages in a soil too rich to feed any such provisions for assimilating all the most nutritious elements of growth? It is quite conceivable that in an old and much titled country only the more hardy species, those which have the most power of attraction for the jungles into which they live, will succeed in yielding good crops, while in a very rich country,—especially when combined with a milder climate,—this process of contest between the more and less vigorous species will go on much more slowly and slowly, and another for nature may not have elaborated anything like such special powers of competition for sap. Dr. Hooker tells us that seedlings of the cedar and the maple come up even with us in the early spring by thousands in the grass-ground where they are planted, but those of the grass draw away all their supplies of nourishment, and they die away. This seems to show that perennial grasses have a much stronger relative attraction for the nutritious elements of the earth than seedling trees; but in New Zealand it would seem, from Hooker's account that even musk from Europe often beat New Zealand perennials in the race. That is it, may be, the seeds of the European plants obtain in a few months as strong a hold of the ground as the native perennials have gained in many years, and then by virtue of their naturally selected species, associate with more rapidity and effect than their perennial neighbours the juices of the soil, and so stave the plants in their vicinity. The vegetable which in England has gone through centuries of competition with the other plants of the same country, has been left comparatively without any process of competitive selection, and is like the horse, cow, or man, who has his duties and necessities at his elbow, when competing for existence against the trained hunter who has lived by his knife and gun, is worsted at every turn by the hardier rival It would be easy, of course, to suggest a similar account of the success of the European fly and ant of European rat in New Zealand against flax and native rat. In neither case, probably, is it due to greater strength or fecundity, greater aptitude for war, but to instincts trained through successive generations under more difficult circumstances. These European flies and rats which have not been able to adapt themselves to the conditions in the New Zealand soil are doing the work which is usually jealously guarded, and where all wild animals have less and less chance every year, have died out, and only those remained which by harder constitution, greater caution, less offensive habits, and more subtle instincts, have been able, while supporting themselves, sufficiently to avoid the enmity of man to prevent any war of extermination being waged against them. And these trained instincts of course tell greatly in their favour when they come to be pitted against races which have not been able to adapt themselves to the New Zealand soil, but which has been completely mastered. This is the most natural inference from Dr. Hooker's strange array of facts to prove that while the plants and animals of the antipodes show no increased fertility when transplanted to Europe, no tendency to run our native plants hard in the struggle for existence, our plants and animals have much more colonizing powers, and the race between the spirit of Mr. Darwin's great work,—not, of course, as if any suggestion of ours could have the least scientific weight, but because the science of the day evidently inclines to attach more and more value to Mr. Darwin's hypothesis, at least as explaining the species of barbarism and the more tamely and slowly, and the race between the

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of the most civilized races of men, a direct share in the protection of that civilization. The shield of civilization is as it were in some sense thrown over those inferior races of existences which, themselves incompetent to share it, and generally not even directly protected or guarded by man, are yet at the second remove, as it were, most important, in order to enable him to carry on the life of the still uncultivated and uncivilized parts of the earth the full advantages he has gained by long residence in cultivated and civilized regions. The animal and vegetable life of which he cannot help drawing after him wherever he goes, the old grasses and weeds and flowers which have existed there before him, as well as the various wild plants and domestic animals which he takes pains to carry with him, have all gained by their conditions of life in the Old World that hardiness which fits them to colonize as well as man himself, and to force their way into his new home without seeking his consent. The most important of all his new media of existence, not only that man intentionally brings with him, but that crawls after him almost by accident, spreads as he moves. A spreading atmosphere of power clings to his steps, so that even the lowest creatures which he has found useful or even but supportable for centuries in one place, will drive out, without giving him any trouble, the creatures which he would otherwise have found useless or even inapplicable in another. The Clover driving the fern and even the sword-flax before it, and so preparing a rich pasture for the sheep,—the little house-fly, transported in boxes and bottles, and then left to supplant the disgusting native blue-bottle by its own energies, are but special illustrations of all these consequences of the new life as a whole,—very often unconsciously, as in the case of the fly—suitable and, comparatively speaking, advantageous to him in ages of civilization, has during those ages been acquiring without knowing it the power to follow him successfully into other regions, where the conditions of animal and vegetable life are different, where the climate, the atmosphere, the seasons, and so to share the charmed life of civilization without being the objects of his intentional protection. Naturally one would have supposed that by the law of the "conflict for existence," the bush tropical forests of South America, the sworded flax and the samphire of New Zealand, would have struggled, with the most tremendous advantages of situation and growth, which civilized men bring with him, and which are so essential to his progress. And so it would be certainly, if art alone were his only dependence; if every animal and vegetable inconsistent with his comfort and safety had to be industriously exterminated, instead of retreating almost as if by magic, before him. But this fact is quite otherwise. The wild animals and wild growths even of the tropical forests yield easily before the weakest invader that has gone through the selecting process inseparable from civilization. The clover follows man into the heart even of South American jungles, displacing the rank grasses it finds there. The horse and the sheep are now to be found in these regions, with infinitely more rapidity than the wild animals which are native there. Man, of course, takes his arts with him, but where he might expect to have to fight Nature hardest with his most powerful efforts, nature seems to acknowledge the merest magic of his preparations, and to yield to him without insisting on any laboursome application of means. Even the tallied forests of the Amazon probably yield to the first sincere effort at assimilation with infinitely less difficulty than we expect. Rich, wild, and virgin soils nourish weak and comparatively untenacious forms of life, both animal and vegetable. The very luxuriance of growth is perhaps a sign of this weakness. The hardier and subtler vitality of selected,—i.e., civilized,—nature, so soon beats the luxuriance of wild life into submission under the race.

And we must remember that this process of 'natural selection,'—selection with respect merely to weakness and strength,—is arrested directly we reach man, directly we reach a being endowed with a character which can see that there is a weakness stronger than strength, indeed a strength in weakness itself, when that weakness is the weakness of the being who works with so diabolical an effect Law our hospitals, our healing art, our charities, are all so many agencies for countering the process of 'natural selection' so soon as we arrive at a stage of culture when we can see that mere strength, mere tenacity of life, is not itself divine. Natural selection stops, or begins to stop, with the very race for whom it has been worked over with so diabolical an effect Law, prepares a region suitable for civilized man, and enables him to conquer with infinitely greater ease other regions not thus suitable for him, and then the being for whom all this has been done, is taught that after all his highest duty and noblest function in relation to his own race lies in reversing the process, in promoting the weak, in lifting up the hands that hang down, in strengthening the feeble knees, in guarding with the tenderest care every spark of human reason and human love. How should a being placed in the position which man holds on the earth by long ages of merely "natural selection," of struggle for existence, have learned that this very process, this fierce competitive strife, is one of the very lowest of his functions,—the one, indeed, which he shares with the lower order of plants and animals,—if the Providence which had watched over the one process had not been waiting to give the corrective and the great supplemnet to His own teaching, the moment He sees the arts of man ripen into the most effectual strength, and mind the most wonderful side of the Darwinian theory is that it shows us, in such strong contrast, what God has really done to perfect our physical and animal nature, and that the being for whom He has done all this, and who is the first to know it, is the one who has the least of all to know about it. Every age and every civilization is the lowest of the laws of human nature, and is recognized by us only in learning to keep it well under us. It would be the strangest of all paradoxes if a universe really accounted for by the law of competition, was crowned by the one being who, in his highest moments, reverses and repudiates that law.

THE PROVINCIAL HISTORY OF ENGLAND.

XXIV.—SUSSEX AND SOUTHERN COUNTY.—SAXON PERIOD.

ANDERIDA appears as one of the fortresses of the Combes of the Saxons Shore or March in Britain, and as garrisoned by King Offa of Mercia. What the exact nature of this Saxon March was must remain a doubtful point, nor can we say with certainty that the name implies a Saxon occupation. It seems, however, at any rate, to imply a state of things similar to that in which the eastern coast of Britain was placed during the Scandinavian invasions of the seventh century. The states of the Saxons and Mercians were one without connection with each other, and the probability of considerable occupations as well as incessant attacks on the "Saxon Shore" at an early period, by the miscellaneous populations included in the vague name Saxon Shore. It would only be in harmony with what we know to have taken place elsewhere in England, and was the most natural condition of the East Coast to this part of the coasts of Britain, to serve as auxiliaries against native insurrections or foreign invasions. When the Imperial central authority became the prey of rival chiefs, nothing would be more probable than that the occupants of the Saxon Shore would take a part in the struggle, and some dim and distorted recollection of these contests may be embodied in the stories of the Saxon conquests of South Britain handed down to us. To secure the Roman fortresses within this district would be among the first efforts of these "Saxons," and accordingly we find the siege and fall of Anderida specially mentioned in the Saxon legends. Among these we find the story of the battle of East Sussex, the well-known battle of East Anglia in which we are now speaking. 477—In this year Zillo came to Britain, and his three sons, Cynmen, Wenecia, and Ciss, with three ships (the usual number in all these Saxon legendary invasions, at the place which is named Cynmenesse, and there slew many Walsas, and drove some in flight into the wood which is named Androes-Leas [or Androes-Leas]. 485—In this year Zillo fought against the Walsas [or Wealas], near the bank of Markredes-Burne. 491 [or 490]—In this year Zillo and Ciss besieged Androes-Cester, and slew all that dwelt therein; not even one Briton was there left." Such is the brief legendary record of the Saxon occupation of Sussex in its earliest form. The name Anderida appears to be borrowed from the ancient Britons, who knew the place as Onebridges; and Zillo is the name of a Briton Chief to whom the Britons under their new lords, must be left to imagination. At the close of this unknown period we find it playing part in the struggles between the West Saxons and Mercians, and dependent alternately on each, as the fortunes of war vacillated between them. In the year 660 we are told that "Ethelweal, © Reproduced with the permission of Cambridge University Library