

the troops which he had so successfully commanded, and returned home. Soon, however, he was again at his service, and his reputation rapidly procured him employment. He was sent with a body of troops to Holland, to assist the Dutch in insurrection against the French, and here he performed the last and most remarkable of his exploits, which was the bold and almost successful attempt to take the fortress of Bergen-op-Zoom by assault. This fortress is one of the strongest in Holland. Its walls were designed by Cohorn. It was garrisoned by 4,000 French troops, of which about 1,700 were effective. This force was inadequate to the mounting of its extensive lines. Some of the defences were out of repair, and the wet ditches were frozen over. Graham determined, under these circumstances, to attempt a surprise by night. The troops employed were under 4,000, so that the assaulting force was numerically inferior to the garrison. The assault was made on the night of March 8, 1714, by four columns, which after surmounting many difficulties and much confusion, actually established themselves upon the walls of this fortress, which had been called impregnable. The fort was soon turned against the assailants. Many leading officers were killed or disabled, and there was a want of direction equal to the emergency. The garrison, recovering from surprise, took the offensive. Some of our soldiers got into open spaces, some were hounded with cold, all were afflicted by fatigue and uncertainty. No reinforcements arrived from without, and here perhaps Graham may be censured for sending too much of the troops employed to the assault. When day broke, the guns of the place were turned upon the assailants. Unhappily, about seven fighting and heavy guns the survivors of the remaining columns laid down their arms. "The daring old man," as Napoleon called him, who conceived this enterprise was then sixty-and-one years old.

Graham's military services were rewarded by a pension, and he enjoyed, as Lord Lyndoch said, nearly thirty years of health and vigorous existence, so that when he died, in 1819, he was in his seventy-ninth year, and had lived from the reign of King George II. to that of Queen Victoria. Regarding his military career at forty-five years of age, he had the good fortune to find immediately opportunities for displaying his great military qualities. The life of a farmer and a sportsman was excellent training for the field of war, and the death of his wife rendering his home joyless, he was able to devote all his thoughts to the business of campaigning. The picture which Gainsborough had painted of his wife was crushed, after her death, in a wooden case, and never opened until he had been buried by her side. He wore till death his wedding-ring upon his little finger. The feeling which drew him into the army has carried many men thither at twenty, but very few at forty-five. That feeling might have dictated the lines—

There's nothing in this world can make me joy,
Like to be killed in a continental war,
Killing the devil out of a dozen men.

If Mr. Graham had lived, his husband's finest military service would have been the command of a regiment of volunteers. A man of less energy and valour might have missed the happy moment for decisive action at Barossa and St. Albans, and then Graham's later and imperishable name was his country's gain. The story of his life, as told in this simple and unpretending volume, will always have a peculiar interest, both from the military capacity which he displayed and from the extraordinary circumstances which called it into action.

MR. DARWIN ON DOMESTICATION.

MR. DARWIN'S recent volumes are not of a nature to excite either friends or foes of the peculiar philosophical theory which has of late years been associated with his name. The interest they excite is not that comparatively limited kind which the public mind sometimes for the prize derives through by the tardy recognition of the past, when the discoverer or the helmsman has finished the first course of some momentous event. This profound aim is not to give holder scope or more decisive force to the laws of heredity and variation, or to carry to a new aggressiveness the scale of modification or conservation itself. The advantage is limited to the more modest aim of going more, and as before, over a portion of the ground occupied by the author's first proposed line of the origin of species, and filling up in detail the outline map of that new province which it was his claim to have opened to scientific discovery. In the publication of his original treatise Mr. Darwin acknowledged himself to have been to some extent led astray by his knowledge of other lines of nature being on the same track, and by the consequent necessity of making good, on his own part, the priority of discovery. He does announce it to be his intention to publish at length, and in copious detail, the whole range of facts upon which his conclusions had been based, of which he had hitherto only given room for a short and inadequate summary. We need not fear that the delay which has arisen in the fulfilment of this undertaking has been caused by continued ill-health. It is unnecessary to be able at length to lay the appearance of an important treatment of the promised work, and we hope that to impatience will have itself stood in the way of the complete execution. It is naturally to the final portion of the whole that we must look for the full development and exhaustive

proof of the author's system. The remaining problem of which Mr. Darwin will then directly attempt the solution will be that of the conversion of varieties into species, the speciation, that is, of the slight differences characteristic of varieties into the more strongly marked differences which are taken to constitute species and genera, including the wonderful adaptations of each being to its complex organic and inorganic conditions of life. The closing section of the inquiry will of course lead up to and involve the ultimate question of the definition of species itself, regarding which the utmost vagueness and confusion prevail even among pretensions to philosophical accuracy of thought. In the main, while, and as a preparatory study, Mr. Darwin has made it his business to draw attention to the minor shades or gradations of distinction which belong to individuals or varieties under well-known and broadly marked generic groups in the realm of life. This inquiry naturally divides itself into two kinds of observation. One of these relates to the question of the variability of organic beings in a state of nature; the other to the influence which has been brought to bear upon organic life by man through the agency of artificial culture or domestication. It is to the latter subdivision of the main subject that the volume before us is now devoted. They are remarkable for the precision and variety of facts which the writer has gathered together, and the skill with which he has brought them to bear upon the theoretical hypothesis. Apart even from the special inquiry which constitutes the main part of the volume, the independent value and interest of that work, as the basis of the readings and experience of an accomplished naturalist. Those who think with the most sagacity or draw from the author's abstract scheme of the primary origin of living species may find satisfaction and profit in the stores of information with which these pages abound concerning forms of life as they exist.

It has been insisted, of late, by E. Forster and others, that variability under domestication or artificial culture throws no light upon the modification of species in a state of nature. With Mr. Darwin, we fail to perceive the force of the arguments, or rather of the assertions, on which this objection rests. In what sense can man act but as an agent or auxiliary of nature? He has no power of altering the absolute conditions of life. He can add or remove elements to the appliances or forces of nature. All he can do is to form new combinations of natural elements, or to apply existing forces with modifications of intensity or continuance. He can transfer an animal or a plant from one climate or soil to another, or give it food on which it did not subsist in its natural state. He can give an individual of either kind the opportunity of a crossing with one arbitrarily chosen from a remote region, or varying in certain characteristics. He can employ the agencies of heat and light, and the resources of chemical or electrical science, and keep up his artificial processes without interruption as long as he likes. But he is no more throughout than the minister and observer of natural law. "It is an error," Mr. Darwin rightly says, "to speak of man tampering with nature, and so producing variability. If organic beings had not possessed an inherent tendency to vary, man could have done nothing."

In how many cases has variation appeared, which man has no power to prevent or check, from unintentional exposure of his animals or plants to different conditions of life. And how little can he make more of existing causes or conditions which may assume some form and bear the simplicity of his experiments. He is not here dealing with inert or inorganic matter, but with the wondrous chemistry of life, and his efforts are limited by the laws inherent in the living organism. There is hardly a condition or change to which he can subject any particular form of life but such as might in all probability have happened in nature. During the natural vicissitudes which the earth has undergone, and during the natural migrations of plants to or from one island or continent to another traversed by different species, it can hardly be but that such creatures have been often subjected to changes of condition analogous to those which almost inevitably cause similar effects in very similar cultivation. No doubt man may work more rapidly and directly by selecting individuals for certain special characteristics, by sowing the seeds or raising the offspring of one species selecting the most favourable specimens, or sowing, growing, or breeding. But the initial variation on which man works, and without which he can do nothing, is caused by slight changes in the natural conditions of life which must often have occurred in nature, and which may have continued to operate under nature for an indefinite period. From a remote epoch in all parts of the world man has subjected many plants and animals to domestication or culture. He has thus been conducting an experiment on a gigantic scale. And nature, Mr. Darwin represents, may be said to have conducted innocently, during the whole lapse of time, a similar prolonged experiment. Hence, he believes, it follows that the principle of domestication are of importance to our study of nature.

It has been too much the fashion to carp at Mr. Darwin as though he had laid down his theory of natural selection as a dogma capable of solving the whole problem of the infinite variety of living beings, and even the origin of life itself. Such vain words have made merry with the Darwinian hypothesis, as if the author pretended to do away with all that was creative or divine in the structure of the universe, and to reduce all natural forms of life, man included, at one step to the simple agency of self or the primordial word. These, however, who have been at the pains to study Mr. Darwin in his own words, and not been hasty, cannot fail to be struck with the moderation and the philosophic diffidence of tone with

* The Principles of Animal and Plant Geography. By Charles Darwin, F.R.S., &c. 2 vols. London: John Murray, 1859.

