

## TWO BRITISH SCIENTISTS OF THE NINETEENTH CENTURY.

BY PROF. T. NELSON DALE.

(Concluded.)

Let us now turn to the other representative of modern British science.

James Clerk Maxwell was the son of decidedly Christian parents. His mother taught him while a boy to commit the Psalms and Milton's poems to memory. At eight, he could repeat the *exix*. Psalm, entire. During his eighth year his mother died. Not only did he display a remarkable memory, but as a boy he had an inquiring turn of mind, and when shown any machine or contrivance, was fond of asking, "What's the go o' that." At ten he was sent to the Edinburgh Academy and resided with an aunt. His letters to his father about this time are curious boyish productions; they were often illustrated, purposely misspelt and contained many comical illusions. Sometimes he would introduce in any part of a word capitals, which when read in consecutive order down the page, would constitute words and sentences. At fourteen, he carried off prizes for scholarship, English, English verse, and Mathematics, and wrote an original mathematical paper on oval curves, which attracted the attention of Prof. Forbes, who read it to the Edinburgh Royal Society. From his sixteenth to his nineteenth year he attended the University of Edinburgh, sitting under Sir W. Hamilton, Professors Wilson, Forbes and Gregory. His vacations were spent at his home in the country and devoted to experimental optics and physics. Two more papers of his on Mathematical and Physical subjects were read before the Royal Society of Edinburgh by some one else, as he was deemed too young to instruct, in person at least, his seniors.

In his nineteenth year he went to Cambridge, first to St. Peter's College, and afterwards to Trinity, that ancient foundation which graduated Francis Bacon and Issac Newton.

At college he cultivated the society of classical students; his room was not so much a place for cramming mathematics as a miniature physical laboratory. His views of student life are embodied in a letter thus:

"Facts are very scarce here, there are little stories of great men for minute philosophers, sound intelligence from Newmarket for those that put their trust in horses, and calendric lore for the votaries of the Senate house. Man requires more. He finds *x* and *y* innutritious, Greek and Latin indigestible, and undergrabs nauseous. He starves while being crammed. [He wants man's meat, not college pudding. Is truth nowhere but in mathematics? Is beauty developed only in men's elegant words, or right in Whewell's Morality? Must nature as well as revelation be examined and measured out by the learned to the unlearned, all second-hand? I might go on thus. Now do not rashly say that I am disgusted with Cambridge, and meditating a retreat. On the contrary, I am so engrossed with shoppy things that I have no time to write to you. I am also persuaded that the study of *x* and *y* is to men an essential preparation for the intelligent study of the material universe; that the idea of beauty is propagated by communication; and that in order thereto human language must be studied, and that Whewell's

Morality is worth reading, if only to see that there may be such a thing as a system of ethics."

To Maxwell's twenty-third year we owe the production of a poem, entitled "The Student's Evening Hymn," which he wrote under the high pressure of preparation for an examination. The following extract from it will suffice;

"Through the creatures Thou hast made  
Show the brightness of Thy glory,  
Be eternal Truth displayed  
In their substance transitory,  
Till green earth and ocean hoary,  
Massy rock and tender blade  
Tell the same unending story—  
We are Truth in Form arrayed.  
When to study I retire,  
And from books of ancient sages  
Glean fresh sparks of buried fire  
Lurking in their ample pages—  
While the task my mind engages,  
Let old words new truths inspire—  
Truths that to all after ages,  
Prompt the thoughts that never tire."

To these he added at a later period:

"Teach me so thy works to read,  
That my faith,—new strength accruing—  
May from world to world proceed,  
Wisdom's fruitful search pursuing,  
Till Thy truth my mind imbuing,  
I proclaim the eternal creed,  
Oft the glorious theme renewing,  
God our Lord is God indeed."

It was during this year that Maxwell after the strain of the examination sought rest and recreation in visiting the home of a fellow student, whom he had befriended at college, and whose father, Rev. C. B. Taylor, was Rector of Orley, Suffolk; and while there, Maxwell fell sick in consequence of overwork at college. He was too sick to be moved, and was most kindly cared for by Mr. Taylor, and his family. It was by means of the love manifested in these attentions and the Christian ministrations of Mr. Taylor that Maxwell obtained a new perception of the love of God, which deeply and permanently affected his religious life. He was thenceforth not merely, as he had been, the son of Christian parents, but a Christian himself.

In 1854 (his 23rd year) he was graduated with the rank of Second Wrangler, and became Fellow at Trinity—continuing for a year or two his mathematical and physical studies. During this period he wrote a number of essays of a philosophical and religious character which were read before a select Literary Club. Brief extracts will show the bent of his thoughts:

"Happy is the man who can recognize in the work of to-day a connected portion of the work of life, and an embodiment of the work of eternity. The foundations of his confidence are unchangeable, for he has been made a partaker of Infinity. He strenuously works out his daily enterprises, because the present is given him for a possession. Thus ought man to be an impersonation of the Divine process of nature, and to show forth the union of the infinite with the finite, not slighting his temporal existence, remembering that in it only is individual action possible, nor yet shutting out from his view that which is eternal, knowing that time is a mystery which men cannot endure to contemplate until eternal truth enlighten it."