

"James Joseph Sylvester."
1897

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Burks, Bibliography.

JAMES JOSEPH SYLVESTER.

Death of the Great Mathematician in
London--His Work at Johns Hopkins
and Oxford--His Eccentricities.

If a people may properly hold in grateful honor the memory of those who have sown in their country the seeds of high intellectual ideals, then we may be excused for calling attention to what James Joseph Sylvester, who died in London yesterday, did for the universities and for the scientific studies of America.

Very few mathematicians of his strength and originality have ever lived. There have been great analysts whose secret was a symbolical method--it was, so to speak, their little game, by which they made problems of a certain class easy; others have accomplished great things by turning problems into geometrical shape; others have carefully avoided problems that were not adapted to their peculiar powers; but Sylvester seemed ready to attack any problem, provided only it was difficult--even problems in geometry, for which he was wanting in the peculiar knack that some men have; he never employed symbolical methods, but seemed to create a method specially adapted to each problem he took up. Perhaps he was not, on the whole, a mathematician of the greatest kind; but for naked logical strength but two or three have ever equalled him.

Sylvester had in a marked degree the absent-mindedness and other intellectual failings which usually more or less accompany the mathematical occupation; but these defects did not affect his moral nature. In his youth, his thoughts seemed to jostle one another in their tumultuous rush. He often talked about several disconnected subjects at once, jumping from one to another and back again. One of these was sure to be mathematical; another would often be poetical, for one of his pastimes was writing rhymes; a third subject of this conversation in parts was very likely to be some beauty whom he admired. He was unaffectedly conscious of his great powers, and for the most part of his defects, too. But he did not always understand why ladies whom he admired did not equally admire him. One of his earlier pieces contained this stanza:

"Stung in her turn, the heartless fair,
Who proudly eyes me now,
Shall weep to see some other share
The godhead of my brow."

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Except in London, he was at all times liable to lose himself in the streets, even where he was daily. He attributed this himself to defective space-intuition; and when some stranger once, at the corner of Charles Street and Mount Vernon Place in Baltimore, decidedly the most distinctive spot in town, inquired of him the way to Charles Street, "Sir," said Sylvester, "you have probably addressed your inquiry to the only individual in Baltimore who could not answer it." But the peculiarity was explicable enough. In the first place, he was extremely near-sighted, and in the next place his brain was generally boiling over with some intellectual process. In 1842 he was stopping at a hotel in Boston, and spent most of his time with Peirce in Cambridge. After a high symposium the last omnibus had gone, and as Sylvester could never have found his way home, Peirce walked the three miles with him. But, as they reached the hotel, both brains were so interested that Sylvester turned to walk a few steps. The result was that they walked all the way out to Cambridge again, and then again into Boston. We cannot say how many trips they made in all; but finally the flow of soul was checked by Peirce refusing point blank to allow Sylvester to return with him.

The warmth and color of Sylvester's thought about the abstractest subjects displayed itself at every turn. His mathematical papers are full of it:

The theory has grown upwards and outwards faster than I have been able to climb after it, like the beanstalk of profound significance in the child's story.

Of all the analytical questions left for me to solve by my predecessors or contemporaries (and they are neither few nor facile), this presents beyond all comparison the hardest knot I have succeeded in untying.

Every properly developed algebraical composition, like a skilful landscape, is expected to suggest the notion of an infinite distance lying beyond the limits of the canvas.

He was with difficulty dissuaded from having the title of one of his memoirs printed in gilt letters. In all this there was something racial; for Sylvester was a Jew--one of those Jews of whom there are so many as to make a marked type, whom to know intimately is to love and reverence, though the occasions may be not infrequent on which their excitable imagination renders them a little uncomfortable as companions.

He was born September 3, 1814, in London. Only to those with whom he was most intimate did he ever speak of his relatives, and though he spoke kindly, he seemed to have little in common with them. Besides, he had a singular admiration for the Aryan--which the Aryan in talking with Sylvester could not see much ground for--and was quite frank in acknowledging his own "Shemitic" defects. He was short, solidly built, brimming over with vitality, and with an enormous domed head. His profile was extremely fine and impressive. What sort of a boy he was we have never heard; but he was graduated from Johns in Cambridge in 1837, being second wrangler. His somewhat advanced age, twenty-three, seems to point to early disadvantages. Of course, being unable to sign the Thirty-nine Articles, he could not take his degree nor compete for the Smith prizes; and the priceless treasure that this arrangement cost the University and England may be estimated by the wonderful

stimulus which brought life into the veins of Oxford mathematics when, as a septuagenarian, he was appointed professor at that university. He was appointed professor of natural philosophy in the University of London; but Sylvester was created a pure mathematician, an idealist, a poet, a Platonist, and it was cruel business to try to make a physicist of him.

In 1841 he accepted a professorship in the University of Virginia, and came to this country after stopping to visit Hamilton in Dublin, where he was made an honorary fellow of Trinity College. The University of Virginia was then, as always, distinguished for its insistence upon thoroughness and for its rigidly correct dulness. Charles Bonnycastle had been the mathematical luminary there; and his degree of brilliancy suited those skies. Sylvester was found to be ridiculous (as genius generally is), and the students were disrespectful. Sylvester is said to have declared that if the disorder in the class continued he would challenge the perpetrators to a duel. He did not remain in Charlottesville a year. He returned to England and supported himself at first as an actuary, to the great detriment of his mathematical productiveness, and subsequently, having been called to the bar November 22, 1850, practised conveyancing besides. Cayley did the same, and was no doubt the superior conveyancer; but it is understood that Sylvester was also a good practitioner. In 1856 he was appointed professor of mathematics in the Royal Military Academy at Woolwich, and was again a fish out of water. Sylvester had been divinely commissioned to teach young mathematicians of genius and devotion, and not congested-brained cadets. In England, as our readers are aware, a government office is a vested right, of which a man cannot be deprived without compensation. However, in 1862, the government and Sylvester found it for their common interest that he should receive a sum of money and retire. He now made an extensive tour upon the Continent, and on his return went back to the old actuarial grind.

In 1876, at the instance of Peirce, he was called to the Johns Hopkins University. He accepted with much diffidence, for he always said he had not much mathematical reading. Nevertheless, his occupancy of the chair proved a glorious success, and a school of enthusiastic and very able young mathematicians grew up under his guidance. His students were always introduced to the matter that was glowing upon the anvil of his own workshop, and so learned how to make researches. In this way he conferred upon this country an inestimable benefit. He established here the American Journal of Mathematics, which continues to occupy a more than respectable position among journals of discovery. In December, 1883, he was elected Savilian professor of geometry in the University of Oxford, and thereupon returned to his native land, where, at length occupying a position such as ought to have been imposed upon him forty-five years earlier, he immediately began to stimulate the development of mathematics as he had done here.

Prof. Sylvester was all his life long down to his latest years an indefatigable solver of exercise problems, such as are proposed in the Educational Times. He considered them an indispensable whetstone of the wit; his whole style of analysis carries the marks of such exercise. He was certainly one of the most extraordinary logicians that ever lived. He would always begin the consideration of a difficult problem by carefully scrutinizing its features and comparing them with those of problems already solved, and he would then guess at some proposition about it, which he would try to put to the test in special instances. In some cases, years would elapse before he was able to

make certain whether his proposition was universally true or not. In one instance, he offered a reward of \$500 to whoever would either prove or disprove a supposed theorem. His demonstrations were in many cases extremely subtle. He said of his own reasoning that it was always "diagrammatic"; and that well expresses what all deductive reasoning must be to have any force.

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