

their use from the village school-master, an evening guest in the family. They were the beginning of the sublime studies which culminated in her immortal works, "The Mechanism of the Heavens," and the "Physical Geography." "My bedroom," she says, "had a window to the south, and a small closet near had one to the north. At these I spent many hours, studying the stars by the aid of the celestial globe."

Nasmyth, the artist, opened a school at Edinburgh for ladies; she attended it, hardly as a student, more as a looker-on or an amateur, but in time became an accomplished painter. She casually overheard Nasmyth say to a group of ladies, "You should study Euclid's Elements of Geometry, the foundation not only of perspective, but of astronomy and all mechanical science." Her curiosity was aroused by the prospect of such a range of inquiry, and she became the only woman in the world, said La Place, who understood his "*Mechanique Celeste*."

Thus gradually opened before her the splendid intellectual career in which at last she stood foremost of all the women of her age in scientific fame, the highest example, perhaps—certainly the highest recorded example—of feminine scholarship in the history of the world. "I had," she writes, "to take part in the household affairs, and to make and mend my own clothes. I rose early, played on the piano, and painted, during the time I could spare in the daylight hours; but I sat up very late reading 'Euclid.' The servants, however, told my mother, 'It is no wonder the stock of candles is soon exhausted, for Miss Mary sits up reading to a very late hour,' whereupon an order was given to take away my candle as soon as I was in bed. I had, however, already gone through the first six

books of 'Euclid,' and now I was thrown on my memory, which I exercised by beginning with the first book, and demonstrating in my mind a certain number of problems every night, till I could nearly go through the whole. My father came home for a short time, and, somehow or other, finding out what I was about, said to my mother, 'Reg, we must put a stop to this, or we shall have Mary in a strait-jacket some of these days. There was X., who went raving mad about the longitude.'"

There was genuine heroism in these intellectual struggles of a young girl without sympathy, and without the ordinary facilities of study; and there is a touching pathos in her allusion to her surrounding disadvantages. She was trying, half-bewildered, to make out some consistent astronomical theory from Robinson's "*Navigation*"—her first book of the kind, casually picked up in her home.

She was beautiful in person as well as in mind; "extremely pretty" in her young womanhood, with a "delicate beauty both of face and figure," and was called the "Rose of Jedburgh." She was, therefore, not without early suitors, and in 1804 was married to her cousin, Samuel Greig. They resided for some years in London, but she had few opportunities to avail herself of its advantages for her favourite studies.

After three years of married life she returned, a widow with two children, to her parental home at Burnt Island, where she resumed her studies with more diligence than ever. Professor Wallace, of Edinburgh University, made her out a catalogue of sixteen books in the highest branches of mathematics. The list was formidable, but she procured them and "mastered" them. "I was," she says, "thirty-three years of age when I bought this excellent little library."