

of spirit, and who rest their faith on the proverbial "practical man," will allow me in all amity to remind them that the practical man does not want to be pampered and coddled, to be nursed and protected after their fashion. Self-training, practical experience, hard-earned knowledge, and other similar expressions, worn threadbare long since, are captivating to some. Nevertheless, the self-trained practical man who rises to eminence—after all, one in many hundreds of his order—is the last person in the community to be seduced by them. He knows that nature's precepts are the same as they have been before all worlds, and that while none can claim a monopoly in them, no one can appropriate them without a long and earnest servitude to acquire them. He recognises the truth announced by the poet's description of gravitation:—

"That very law which moulds a tear,
And bids it trickle from its source,
That law preserves the earth a sphere,
And guides the planets in their course."

He knows that he has had to earn his knowledge by studying the same laws of nature and physics, and gaining the same general information which others do who have attended schools and universities—a privilege denied to him. He feels that he has had to struggle alone under a thousand discouragements to reach by rugged and circuitous tracks the same goal; that he has been like one trying to decipher unaided a secret writing, who has had to compare symbols in different positions and under different combinations, obliged to conjecture many a time and oft what their meaning may be, until, after a multitude of fruitless experiments, he comprehends their separate and relative significations. No such man would decline the help of teachers familiar with every branch of science he desires to master, or the use of a library, collections of properly classified minerals which you will doubtless cause to be assembled, or of apparatus to illustrate for him at once problems, by which he has been for a long time perplexed.

Apart, however, from this, let us view the matter in a broader light, and strike a key more in consonance with the liberality of sentiment with which you wish this matter should be treated. When we reflect on the distinction between science which collects principles, and art which applies them, we may acknowledge the force of the more rational persuasion of enlightened men of every

age, that theory and practice, instead of being hostile, are only different phases of the same form of thought, that to impose on them the ban of celibacy is for practical purposes the most impracticable of things, and that they should be allowed to continue undivorced, for ever bound together in indissoluble bonds of holy matrimony.

While discussing this, your attention may be called to the opinion of Robert Stephenson. He was, as you know, son of George, father of railways, who, when the unknown brakesman of Killingworth, disputed with Davy of world-wide reputation the priority of invention as well as usefulness of the safety-lamp, and who stinted the indulgence of his days of sparingly-requited labour in order to give his son the best education to enable him to aid his own acknowledged deficiencies. Writing from South America in 1825, whither he had been sent to superintend the working of gold mines at St. Anna, he says:—"Practical men are certainly to be esteemed as such, but I am far from attaching the importance to them which our masters appear inclined to do. Indeed, in the working of gold and silver in veins in this country it is absolutely essential that theory and practice should be united and go hand-in-hand."

It is difficult indeed to know how to repress this natural proclivity to innovate, or by what rigour to restrain this stationary mediocrity so erroneously attributed to the practical man. He, himself, rises in rebellion against the favourite code prepared for him, for no sooner does he allow his genius to soar above his mechanical occupations, and to speculate on some improvement on his servile toil, than he becomes himself a theorist—one of the obnoxious body of philosophers looked upon as idealists or dreamers.

Is it not manifest then that when a knowledge of mathematics and mechanical principles affecting the direction and pressure of forces, an ability to estimate the strength, the elasticity, and other properties of materials, with a view to economy, convenience, safety, and durability, has been gained by a man before he enters on the practical application of the principles of construction, and sets himself to build a house, &c., he will have an immeasurable superiority over the one whose performances have been for years chiefly imitative, who has not been able to find time to learn, or find others with leisure or inclination to teach him those principles calculated to simplify or expedite his unvarying handiwork, but who has been obliged to rest on the actual experience of his own working hours. Might we not as well expect to find a