

ments. Without encroaching on other very important studies then occupying their attention, they may be carried on to the Quadrature of the Circle and Trigonometry, which will give them an insight into geometrical theory and practical operations, and amply sufficient exercise in geometrical reasoning; and will be enough for those not going to college nor requiring mathematics professionally. The study of Geometry affords good lessons in precision of statement, and is an excellent exercise for the faculty of attention, demanding throughout close, earnest, sustained attention. It teaches to search out properties and consequences, to select from a variety those bearing on the point in question, to combine them into a connected chain of reasoning, and might be taught so as to exercise the inventive faculty. It also holds out examples of the most conclusive kind of reasoning. For mental training, as well as for the knowledge it imparts, Geometry must form an essential part in any complete course of education.

But, there may be too much of a good thing. After a certain number of propositions have been gone through, partly book-lessons learned, partly exercises the learner has to work out himself, more is of little use for mental training,—a mere repetition of one kind of reasoning, with not much range or variety. Probably a well selected course of about a hundred propositions, would do the pupil all the good, as to strengthening mental power, that he can derive from the study. I have long been of opinion that the value of mathematical studies for mental discipline has been considerably overrated. They do not furnish examples for exercise in all kinds of reasoning,—certainly not in that most required, in which it is probabilities, not certainties, of which we have to judge. The propositions are simple, clear, and well defined; the data certain; and the student is in a channel from which he cannot deviate. He who has been exercised solely or chiefly in the clear definitions, simple axioms, precise propositions, limited and certain data, and irresistible demonstrations of the mathematics, will be at fault when he encounters that jumble of ill-defined terms, uncertain premises, half-settled principles, which form the grounds of our ordinary reasoning,—that dim, hazy chaos out of which he must extract light and order. Two eminent logicians, Sir William Hamilton and Archbishop Whately did not concur in the high estimate which some have formed of the value of mathematical studies for the improvement of the mind.

But Geometry might be made available for more useful discipline than merely learning and repeating demonstrations set down in a book, which is not a high order of mental training. The active powers of the mind, and particularly the inventive faculty, might be called into play. This would require a considerable extension of the system of *exercises*. The learner should be set not only to find the demonstrations of given theorems, or solution of given problems, but to discover theorems and problems, that might be deduced from given data. All this would be troublesome to the teacher compared with the easy task of hearing and examining on lessons learned out of a book; except in small select classes, it might be difficult to arrange so that the learner would be thrown entirely on his own resources—home-work might not be reliable. But something of this kind should be aimed at, as the most valuable description of mathematical training; and for this end, it might even be worth while for the pupil to gain time by dispensing with learning certain demonstrations, remaining satisfied with knowing the theorems dogmatically, as established geometrical truths. The power to work out for himself is far better than merely learning things—for mental training.

I can only touch on these subjects: but I throw out these few words to invite attention to the questions,—whether we do not attach too high a value to the study of mathematics as a means of mental discipline; and whether we take sufficient advantage of the most effective kind of mathematical training.—*Educational Times*.

Jacques Cartier.

(By T. D. McGee.)

In the seaport of Saint Malo, 'twas a smiling morn in May,
When the Commodore Jacques Cartier to the westward sail'd away;
In the crowded old Cathedral all the town were on their knees,
For the safe return of kinsmen from the undiscover'd seas;
And every autumn b'ast that swept o'er pinnacle and pier,
Filled manly hearts with sorrow and gentle hearts with fear.

II.

A year passed o'er Saint Malo—again came round the day
When the Commodore Jacques Cartier to the westward sail'd away;
But no tidings from the absent had come the way they went,
And tearful were the vigils that many a maiden spent;
And manly hearts were filled with gloom, and gentle hearts with fear,
When no tidings came from Cartier at the closing of the year.

III.

But the Earth is as the Future, it hath its hidden side,
And the Captain of Saint Malo was rejoicing, in his pride,
In the forests of the North—while his townsmen mourned his loss
He was rearing on Mount Royal the *fleur-de-lis* and cross;
And when two months were over and added to the year,
Saint Malo hail'd him home again, cheer answering to cheer.

IV.

He told them of a region, hard, iron bound and cold,
Nor seas of pearl abounded, nor mines of shining gold,
Where the wind from Thulé freezes the word upon the lip,
And the ice in Spring comes sailing athwart the early ship;
He told them of the frozen scene until they thrill'd with fear,
And piled fresh fuel on the hearth to make him better cheer.

V.

But when he changed the strain—he to'd them how soon is cast
In early Spring the fetters that hold the waters fast;
How the winter causeway, broken, is drifted out to sea,
And the rills and rivers sing with pride the anthem of the free:
How the magic wand of summer clad the landscape, to his eyes,
Like the dry bones of the just, when they wake in Paradise.

VI.

He told them of the Algonquin braves—the hunters of the wild,
Of how the Indian mother in the forest rocks her child;
Of how, poor souls! they fancy, in every living thing
A spirit good or evil, that claims their worshipping;
Of how they brought their sick and maim'd for him to breathe upon,
And of the wonders wrought for them through the Gospel of St. John. (1)

VII.

He told them of the river whose mighty current gave
Its freshness, for a hundred leagues, to Ocean's briny wave;
He told them of the glorious scene presented to his sight,
What time he reared the cross and crown on Hochelaga's height,
And of the fortress cliff that keeps of Canada the key,
And they welcomed back Jacques Cartier from his perils o'er the sea.

(1) So great was the veneration for the white men, that the chief of the town Hochelaga, now Montreal, and many of the maimed, sick, and infirm, came to Jacques Cartier, entreating him, by expressive signs, to cure their ills. The pious Frenchman disclaimed any supernatural power, but he read aloud a part of the Gospel of St. John, made the sign of the Cross over the sufferers, and presented them with chaplets and holy symbols; he then prayed earnestly that the poor savages might be freed from the night of ignorance and infidelity. The Indians regarded these acts and words with deep gratitude and respectful admiration.—Warburton's *Canada*, vol. 1., p. 66.