youth. Not that I suppose that education itself can make Christians; but it is a divinely appointed instrumentality for the accomplishment of that divine end. And it appears to me passing strange, how any man assuming the name of Christian, can neglect the Christian education of his son, while no pains or expense are wanting in making him a skilful grammarian. It was a just as well as beautiful remark I heard some years since from the lips of the eloquent Dr. DUFF, that "knowledge is a double edged sword; and every thing depends on the arms that wield it. Wielded by religion, like MIDAS, it will turn all things into gold; wielded by irreligion, it must, like MEDUSA, turn all things into stone."

As a member of society, a mechanic should have some knowledge of the ordinary topics of social intercourse: and the foundation of that knowledge must be laid in a school acquaintance with Geography and the Elements of Natural and General History. No branches of knowledge are more easily acquired in youth than these; nor is the acquisition of any more grateful to the taste and curiosity of the youthful mind, especially when illustrated, as they always ought to be, by diagrams, objects and maps; nor is any other department of elementary learning so happily adapted to develope the social feelings and affections, and qualify any young person for the intercourse of life. For want of such knowledge, (and which if not acquired in youth is seldom attained to any considerable extent,) many a mechanic shuns intelligent society; and instead of seeking gratification and profit, and improving his leisure hours, in rational social intercourse or useful reading, he resorts to sensual indulgences and abandons himself to the lower propensities of the animal nature. As man's very nature is social—as he is formed for society, he must, and he will, in some form or other, fraternize with his fellow-man; and if the moral and intellectual part of his social nature be undeveloped by appropriate culture and exercise—if he be left a mere material being—a mere mass of bones and sinews and bodily appetites and passions, the animal propensities will of course become predominant, and the associations and habits will be of a like character. To counteract and subdue the lower appetites and passions of our nature, we must cultivate the higher powers and affections, and provide them with food and incentives for appropriate sustenance, exercise and enjoyment. The aspects and laws and productions of nature, which is the province of Geography and Natural History—the narrative of mankind, which is the theme of General History, are studies singularly adapted to enlarge and elevate the youthful mind as well as gratify and improve the youthful taste. The employment of mechanics brings them into contact with their fellow-men very much more than that of the agriculturist—and that contact must be for good or for evil according to their educational fitness for society; and therefore the social part of their education is proportionably important, and should be provided for with corresponding solicitude and care.

2. I observe, secondly, that the mechanic of Upper Canada is a member of a Free state: and, as such, he should have some knowledge of the constitution of government under which he lives, and of subjects relating to his rights and duties as a citizen. The civil rights of mechanics in this country are as extensive as those of the learned professions themselves; and as free men they have as much to do with the architecture of government as they have with the erection of cities or the productions of manufactures. As a free man, ought not the mechanic to understand the import of the term 'civil liberty?' And to understand that involves no small amount of political knowledge. As a free man, ought he not to be able to appreciate the civil polity under which he lives? And how can he do so rationally and intelligently, or except as a mere creature of prejudice, unless he studies its principles and developments? As a free man, ought he not to know his rights and how to exercise them? And how can he do so without study and reflection? As a free man, ought he not to be acquainted with his duties, and be able to perform them faithfully and for the good of his country, whether as an elector or as elected, whether as a witness or juryman, a private citizen or public officer? And such knowledge is not the growth of instinct, but the fruit of a proper education, matured by subsequent observation and reflection.

The subjects at which I have thus glanced form, indeed, a part of a sound education for every inhabitant of Upper Canada, whatever may be his profession, trade or employment; but they are invested with peculiar interest in connexion with mechanical pursuits, from the nature of those pursuits, and from the facilities which they afford for the acquisition of general knowledge, the cultivation of much social intercourse, and the exercise of extensive popular influence. I think I am warranted in saying, shame upon the parent who will inflict upon his intended mechanical sons the irreparable injury of depriving them of the advantages and happiness of such an educational preparation for their future position as members of society and citizens of a free country! But it is with the professional education of the mechanic that I have specially to do.

3. I remark, therefore, in the third place, that the intended mechanic is destined for a particular branch of human employment, and ought to have some knowledge of the nature of the substances with which he will have to do, as well as some acquaintance with the principles on which they may be moulded or modified and rendered subservient to his purposes. Mechanism has to do with almost every known substance in nature; and the principal departments of mechanics have each to do with many natural substances. Mechanicians, should, therefore, be acquainted with the nature of such substances as much as the professor of ancient or modern languages should understand their elements and structure, their idioms and literature, or as professor of mathematics should be conversant with the elements of EUCLID. Some branches of Mechanics, as well as Agriculture, have to do with the EARTH on which we tread, in the foundations of edifices, in preparing materials for several kinds of buildings and in erecting them, in constructing dams, roads, canals, and harbours, in providing the very window-glass by which our houses are lighted and the vessels with which our tables are furnished. It is, therefore, appropriate and desirable that the mechanic should have some knowledge of both the chemical and mechanical properties of that variously diversified substance which we call earth.

The same remark may be made, with additional force, in reference to the MINERAL SUBSTANCES which the earth contains, and without the use of which not a single employment of civilized life can be pursued, nor one of its blessings enjoyed. The chemical and mechanical modification and application of these substances embraces the whole circle of the arts, and no artizan should be ignorant of their properties and powers and laws.

And how much has mechanism to do with that *Fluid* substance which forms the ocean, intersects continents and islands with rivers and streams, which forms the motive power of many kinds of machinery and one of the essential elements of human subsistence, and the discovery and use of only one of whose mechanical properties, in the form of steam, has altered the character of most manufacturing employments, has modified the aspect, powers and relations of nations, and changed the commerce of the world. A knowledge of the mechanical properties and agencies of liquids is unquestionably an essential part of a sound mechanical education.

Scarcely less essential is it for the intended mechanic to know the properties and laws which characterize that elastic body or gas which envelops the globe we inhabit, which we inhale as a supporter of life, and on the laws and phenomena of which depend the structure of our dwellings and the rigging of our ships, the operations of machinery, the variations of the weather, the changes of the seasons, and the almost innumerable provisions and employments which result from them. Apart from the construction of musical instruments, and the pleasure we derive from sounds, there is hardly a single trade or branch of mechanical labour, the successful prosecution of which does not require some knowledge of *pneumatics*.

But mechanism has largely to do, and especially in this wooden country, with organized bodies; and, therefore, an acquaintance with the substances which enter into the composition of the vegetable kingdom—their proportions, principles of combination and decomposition—the laws which regulate the growth, strength, durability and decay of different kinds of plants and trees, ought not to be overlooked in the education of the intended mechanic. The enchanting field of vegetable physiology is an appropriate object of attention and study to every young person; but to the contemplated worker in wood of every description, an elementary knowledge of it is part and parcel of the proper preparation for his trade. And in such preparation I think the study of that unrivalled piece of mechanism which we call MAN ought not to be omitted.

The substances, then, on which mechanism operates, and the