an acquaintance with mechanical philosophy would arouse the torpid, and restrain the over-excited. It must afford the practical mechanic much satisfaction to see the effects he often observes, explained by a reference to their causes, and to obtain a distinct apprehension of every thing connected with his art.—But we are often told that fine theories and mathematical calculations are useless, and that practical information, as it is called, only is necessary. Such is not the fact. They must be united before any work can be completed. Before the machine can be produced, there must be a model. That model may exist in a picture on the mind, or be made of solid materials.—Now the construction of the model requires a knowledge of science, while the mere labor is performed by the hands. Again. It is enquired by some what direct influence can science exercise upon the labor of the artist or mechanic? To answer the question, let it be supposed that you require a carriage for your comfort and convenience, and you apply to a workman to have one constructed. In the first place as you have never studied coach-making, you are unable to give a proper plan of the carriage you desire, and therefore the whole matter is confided to the person you employ. The mechanic measures accurately the carriage of some other gentleman (this is of every day occurrence,) and with some trifling alterations in the shape of the body, color of the trimming, &c. finishes the work, which from its appearance you are pleased with. Here nothing more has been than to imitate. Perhaps the model copied was very imperfect,—your axles may be so small that on your first excursion they will break down. They may be so large, and consequently the friction so much increased that your horses are jaded and you wonder at the cause. The springs may be so inflexible as to make the seats uneasy, they may be too yielding and break, and what is the cause of all these difficulties? why only this. Neither the employer, nor the employed, knew enough of gravitation, motion, friction, and elasticity to build a coach. Cases of this kind might be multiplied. And the object of this Institution is to impart the information which will afford a certain remedy for such evils.

To agriculture the sciences are of vast importance. The fertility of the soil does not depend upon the presence of any one substance, but upon an admixture of the different earths, alkalies, and acids. By chemical analysis connected with mineralogy, each ingredient is examined, defects discovered, and means supplied to promote the growth of plants. The farmer should be made acquainted with vegetable physiology, and carefully study the nature and peculiarities of the plants he cultivates. Otherwise, how can it be expected they will thrive under his culture? He may cast the seed upon the earth, and be comforted with the prospect of a crop. But unless his labors are directed by knowledge, he can never be cheered with a plentiful harvest.

When a view is taken of the [illegible] of natural philosophy, and