

will give greater vitality to the Education Department.

The Agricultural Department, however, seems well awake, and has revolutionized the butter-making industry by teaching the farmers the proper methods of cream separating. Probably we shall get the highest price in the market when we have perfected our manufacture.

Experts are also being employed in our wine-making industry, and our tobacco, cigar, and other manufactures. Some, doubtless, are anxiously looking forward to marked improvement in these productions. Science, then, by enormously increasing the efficiency of labor, makes a corresponding increase in the value of the manufactures and productions. There is, as a direct result, more money to distribute both to the capitalist and to the laborer, *and wages rise accordingly.*

Now, of all studies Mr. Herbert Spencer puts science first. Some reasons are :—

1. It cultivates the *observation*, because the teaching of it is essentially objective ; things are learnt rather than words. The results are manifest to the senses.

2. It cultivates the *judgment*, because it prevents guessing, or jumping at conclusions.

"The great fault of the community," Professor Faraday says, "is want of judgment, and it is ignorant of its ignorance ;" and this is due, he says, to want of scientific culture. We can see how science improves the judgment ; for nothing is taken as true until the conclusions from data have been verified by observation and experiment. All prejudice must be laid aside, for the evidence speaks for itself. Seeing is believing.

As for the usefulness of the knowledge so acquired :—(a) It is a knowledge of facts, not of opinion merely. "Necessary and eternal are its

truths, and science concerns all mankind for all time." (b) Science underlies the fine arts. The artistic workman must know the laws to which the materials conform, *e.g.*, of color, shape, etc. For self preservation the knowledge of physiology is greatly needed ; for industrial purposes, chemistry is essential. There is scarcely an industry in which chemistry is not of service. It is useful in the kitchen ; for cookery, in ventilation, and the sanitary condition of our dwellings ; in agriculture—to economise manures, and to supply the land with what is necessary to the growth of the plant. In physics, "the mother of the sciences," we all have occasion to use the lever, the pulley, etc. And the general effect of scientific study is thus remarked by Prof. Tyndall :—"When prejudice is thus put underfoot, and the strains of personal bias have been washed away—when a man consents to lay aside his vanity and become nature's organ, his elevation is the instant consequence of his humility."

What we owe to science is beyond expression. It has tamed the wild force that rushes through the telegraph wire, harnessed the steam engine to serve man's purposes, increased commerce by steamboats, railways, electric cars, and in other ways millions now find support owing to it, where before there was only food for thousands. Wandering tribes by its aid have become populous nations, and it has given them comforts which their few naked ancestors never dreamt of. And the daily discoveries tend to show we are not only on the shore of a vast unexplored ocean of knowledge. Yet, students, who have spent years in education, and would blush to pronounce *Iphegènia*, *Iphegenia*, or to show any ignorance respecting the labors of a famous demi-god, show no shame in confessing their ignorance of the functions of the spinal cord, or