

of principle from the material world, and anarchy, confusion and chaos would result.

Law is also a necessity in all organized society. Man as a social being cannot exist without it. Hence, in every community, and among every class of human beings from barbarism to the highest grade of civilization, we find a code of laws for the regulation and control of individual men.

So we have *civil* government, *family* government, *school* government—each an absolute necessity for the existence of human society, in their various relations, and above all and over all, the Supreme law of God bears sway.

In the material world these laws are so definite and exact, as to control the smallest particle that floats in the sunbeam, and so comprehensive as to embrace worlds and systems of worlds that roll in infinite space.

So human law must be definite and comprehensive. And to be obeyed it must be understood by every citizen, child and scholar.

In the government of the school, the regulations necessary to secure order and proper discipline, must not only be fixed and uniform, but fully made known to every pupil, that there may be concert of action and a harmonious working of all the machinery. It will not do to trust a matter of so much importance to the good sense and good intentions of the scholars, however much we may confide in them. It will not do to allow each to be a law unto himself and to act alone upon his own responsibility. Every experienced teacher knows how utterly impracticable such a theory is. Every one should take an early opportunity to announce and explain the principles and facts upon which the school is to be governed.

These necessary school laws must be rigid and rigidly enforced. Says an experienced teacher in this connection: "A system of discipline ought to accomplish completely the object it aims at. It should have no rules which have not been well considered beforehand. It should then admit of no exceptions, but for the most imperative reasons. Let down the laws to day, and the scholars will leap the fences to-morrow, and snap their fingers at all barriers the day after. The system while it lasts must be inflexible, earnest, strong, thorough. It is much easier to govern perfectly than partially, to say nothing of the clear gain in temper and comfort. If an evil ought to be prevented, let the master deliberate and then prevent it. He can, if he will."

Again, the pupil must be taught and made to believe, that all school regulations and laws are based upon *authority*—authority vested in the office of the teacher, which is his *not* to withhold, but to *execute*.

This is the very germ, and the only foundation of good government. Let it be distinctly understood, that persuasion may never take the place of authority. In school management, as a means of preventing evil, we may persuade, invite and win, at any time, when the necessity of subordination is not questioned by the pupil; or after he has been subdued by authority, we may allure him by kind treatment. But kindness cannot supply the place of authority. Obedience is *not* a voluntary compliance with a request, but a hearty response to acknowledge authority—an implicit yielding to a command. The pupil must not wait the dictates of inclination, or feeling, before he yields, but promptly *obey*. Ours is not a government of persuasion, not of reasons assigned, not of the will of a majority, but of the will of *one* master. From his decision there may be an appeal, but *disobedience never*.—H. O. —*Rhode Island Schoolmaster*.

### Science for Children.

The schoolmasters of the present day may be divided into two categories: those who *teach*, and those who *hear lessons*; the latter class, unfortunately for the next generation, being by far the more numerous. The mischief done to the community generally by the short-comings of inefficient teachers is too well known to every one who has pierced below the surface of the great question of middle-class education. The difficulties, how-

ever, that beset a science teacher in his endeavors to force scientific truths into the unwilling and unprepared minds of boys, who have been subjected to the sway of these same lesson-hearers, can only be realized by those who have gone through the task. The case of a senior science class, which has been under my charge for some months past, will illustrate my meaning most fully. It consists of about a dozen boys, whose ages range between fourteen and seventeen years, and they receive twice a week an hour's instruction on chemistry and physics. The class may be divided into two distinct portions by a perfectly sharp line. Four of the boys have had the advantage of six or seven years' training under the principal of the school, who is not only a ripe scholar, but also an efficient teacher—a very rare collocation in these days. The rest have simply learnt lessons all their lives. The four boys who have been *taught* are as mentally distinct from the others, as if they were different species of the same genus. The first four are bright, attentive, wide-awake—I know of no other term to express exactly what I mean—logical, and clear-headed; they can fairly follow a chain of scientific reasoning, and produce it afterwards link by link; they have a certain power of induction and deduction, although of course, being new to science, this power is necessarily only just awakened; they can connect and correlate facts and ideas, they can enumerate a series of phenomena in logical sequence; in a word, although their industry and application are far from colossal, the task of teaching them the truths of natural science is a comparatively easy one. The other boys, as I have said before, almost form a distinct mental species. They cannot understand the possibility of learning any thing without the aid of a book, and the idea of finding out anything for themselves has never entered their heads. Still they are far from stupid boys, being all possessed of good average brains; yet their faculties have not merely been allowed to remain undeveloped, but they have been utterly entangled, stunted, and stultified by what Dr. Frankland would call their "previous school contamination." These boys, it must be understood, are the sons of parents belonging to the upper stratum of the middle class, and have mostly been to schools conducted by university men with honorable initials appended to their names—men, in fact, who are scholars but emphatically no teachers. Their great fault is a total want of mental method, without which the greatest brain is as nought. They are at home in Virgil and Horace, some of them are fair Greek scholars; they have "been through" Euclid and can work moderately difficult algebraical problems in a certain mechanical fashion; they are well acquainted with the leading facts of English history, and know the exact position and population of Adrianople; but as far as real mental power goes, any poor boy, who has been in a National school for three years, would beat them hollow.

These facts surely point out the absolute necessity of beginning scientific training at a very early age; and I fancy this necessity has not been sufficiently dwelt upon in the numberless essays, letters, lectures, and evidence on the subject of scientific education with which we have been deluged during the past decade. There seems to have been a notion abroad, that scientific teaching should not be begun before the age of twelve or fourteen; but why, I would ask, should boy's minds be allowed to remain fallow during all these years? The minds of boys of seven and eight should surely be as carefully developed as those of their seniors, and there is certainly no means of pure mental culture so successful as scientific teaching. A boy of this age should not be taught science so much for the sake of acquiring a certain number of facts, as of developing his powers of observation and reasoning, and giving a proper tone to his mental faculties. A boy of eight or nine takes a morning canter of three or four miles on his pony, not for the purpose of getting over some seven thousand yards of ground, but to strengthen his muscles and improve his carriage: his science lesson should be an intellectual canter, taken with the view to strengthen and improve his mental muscles and carriage.

It may be urged that children of eight or nine are too young