

# SCIENCE

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## THE EARLY TRAINING OF SCIENTISTS

It is a strange feature of the modern educational process that though children are born richly endowed with scientific instincts into a world which has gladly accepted a multitude of gifts from science, they encounter, from the cradle to the university, constant opposition to the education of these instincts.

The child is excellent raw-material for the making of the scientist. First of all, he is curiosity incarnate; he does not confine his attentions to those matters which adults consider practical, but tries to learn all he can about an environment which he finds brimming with interest. Moreover, he is an experimentalist, and the days are too short for the experiments he wishes to perform upon everything at hand, from the bric-a-brac to the patience of his elders. He relies upon experiment rather than upon authority for learning truth. Authoritative representations concerning the fragile qualities of glass, the taste of pepper or the temperature of a stove are to him but suggestions for experiments. Although his experimental technique is simple and his capacity for reasoning and theorizing are undeveloped, he has made a splendid beginning towards a scientific career.

In his further development, however, he meets with opposition at every turn. Many of his experiments earn punishment from his parents, who discourage his curiosity and even pervert the truth for their own ends. At school, book-learning is substituted for observation and experiment, and even when the topic is nature or science it is often taught in a very didactic way by a teacher who, though having taken many courses in pedagogy, may have but little appreciation of the spirit and method of science. At Sunday school he is likely to find a teacher who praises as religious virtue the