

The Penalty of Neglect of Science

General Science

Extract from the report of the American Association for the Advancement of Science's special committee on *The Place of Science in Education*:

When harassed by those who argued against vaccination Dr. William Osler, famous scientific physician then engaged in England, issued the following challenge, "I will go into the next severe epidemic with ten selected vaccinated persons and ten unvaccinated persons. I should prefer to choose the latter—three members of Parliament, three anti-vaccination doctors, if they could be found, and four anti-vaccination propagandists. And I will make the promise neither to jeer nor gibe when they catch the disease, but to look after them as brothers, and

for the four or five who are certain to die I will try to arrange the funerals with all the pomp and ceremony of an anti-vaccination demonstration." It is not recorded that anyone offered to accept Dr. Osler's challenge.

It seems impossible to have such science knowledge as that pertaining to health become most useful until it is built into one's emotions and his social relations, as well as into his thinking, consciousness, and appreciation. In an earlier day children in schools and homes frequently were affected with a form of "itch" caused by a very small epidermal insect. In closed, unventilated and unclean school rooms and homes this insect could thrive and extend its disturbances to all with whom it came in contact. During the childhood of many persons living now, to have the "itch" was an annoying misfortune but not a social disgrace. When the facts about the parasite became known, its relation to uncleanness and carelessness was demonstrated, and the "best families" didn't have it. Soon it became a social disgrace not only to have the disease, but even to perform those active superficial manifestations which indicate an itching epidermis. Today "itch" is almost unknown and so objectionable as to make even this use as illustration seem disturbingly bold. Likewise, much other science knowledge must be carried beyond mere knowing into the field of social use, into codes of human relationships, before it is most readily effective.

It must be recalled that in the very nature of things, newly discovered truth is at first in the possession of one or a few persons. No matter how helpful the new truth might be, the majority, indeed almost all persons, will be uninformed about it, hence may be unsympathetic with its use, until they become informed in some convincing way. A voting majority in a democracy is a serious menace unless it is an educated citizenry. Probably each great scientific discovery would have been voted down if its case had been left to popular vote. We need but turn the pages of history to read of the hundreds of Gallileos, Harveys, Newtons, Huxleys and Darwins whose discoveries were voted down by the large majority. Fortunately gravitation, heart-beats, attraction of planets, and forces that control

the development of living things, have not yet heard the voice of the majority.

Persons who have traveled much about the earth, report that probably the majority of the human race would still vote that the earth is not round; that some form of incantation gives at least temporary protection from disease; that supplication for rain is effective; and that taboos and mystic signs are potent in curing human ills and in contributing to the welfare of the believer and his friends. Majorities are very dangerous, if uninformed. The process of informing is slow. It is opposed by belief in what has been known, by lack of intellectual desire and vigor on the part of many, and by intellectual and social "vested interests." Slosson has said: "In actual life ignorance is allied to conservatism, and the combination is a strong one. In order to introduce a new idea into the mind of man it is generally necessary to eject an old idea. To move in new furniture one has first to move out the old."

It must be recalled, also, that only a few discover new truths and that these few must inform the many. The many must be informed in terms and by examples within their own range of experience. It is useless to hang up a light whose rays are outside the range of vision of him for whom it is put up. He may be outside the range in mere distance, or his sensitiveness to light may not fall within the scope of the light waves in use.

Then it must be further recalled that rapidly growing knowledge, increasing intellectual effort, and accumulating regulations of human conduct cause added tensions upon minds. Often these minds are unused or ill-adapted to added intellectual and social loads, and prefer to evade the somewhat unnatural strain. It is easier to vegetate than to work, and growing knowledge illy suits an increasingly quiet life. It is only when the rewards of scientific knowledge are greater than the comforts of a quiet life that dissatisfaction arouses to the necessary effort for gaining new ideals.

Science instruction both in school and out needs better organization, more effective cooperation to make even the health knowledge now available function more completely in the lives of people generally.

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