WORDS AND SENTENCES IN SCIENCE AND INDUSTRY

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Cooperation is the main highway of human progress. The use of words and sentences is the commonest vehicle traveling this highway. Too often this vehicle of cooperation shows the need of lubrication. Too often it breaks down. Its utility is none too good at best, for the indefiniteness of words, as used and as understood, limits communication tyrannically. The failure of our communication vehicle continues to function smoothly is not surprising; the imparting of information and ideas by the enunciation or writing of words and sentences is really a most complicated procedure. An ordered and modulated series of sounds is made in a well-nigh infinite variety of combinations, and listeners frequently understand. Marks are rapidly made one after the other on some surface, and readers find meaning in them. Because the ability to talk or write and to gain information by listening or reading is common the remarkability of this distinctive human attribute is not generally realized. Because the use of words and sentences is universal, adequate capability in their use tends to be taken for granted.

Science is exact. Industry is exacting. Men in science and industry therefore have special need for skill in clear and accurate communication one with another.

Mathematics is a language. Like a sentence a mathematical equation conveys a complete thought. So does a chemical equation. Scientists work with these languages and in these distinctly scientific modes of expression they recognize the necessity for the use of correct symbols and for proper balancing of equations.

Words are symbols, too, and sentences, like equa-