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Targets

The targeting of research has always been with us, but it has lately become a more insistent theme. This stems, in part, from the demands of an increasingly informed public which looks to science for the prompt solution of an array of troublesome problems. As the fraction of the federal budget assigned to research and development in health, ecology, energy, space, and many other areas of science has increased, the tax-paying citizen has properly exhibited increasing interest in the selection of specific areas in which research is to be pursued. The taxpayer pays the piper and with some justification demands, if not to call the tune, at least to contribute to the cacophony.

The word "target" is one of a number of terms derived from the military which have been adopted by science, perhaps as a consequence of the shotgun marriage between scientist and soldier which took place during World War II. Other military words and phrases now somewhat incongruously but firmly fixed in the scientist's jargon are "strategy" and "task force."

A target, we may take it, is a special kind of a goal. It is well defined and clearly visualized, falling within the direct line of sight of the eye or, at the very least, of the mind's eye of the observer. He knows beforehand what the target looks like and has ways of ascertaining whether a hit has been scored. He need only muster his task force, assemble his ammunition, determine his strategy, and bang away.

Yet, targets are sometimes deceptive. Occasionally they may prove to be mirages. Not infrequently the map is inaccurate or is misread. The judgment of target size and distance may be erroneous, the estimate of munition needs may be faulty. As in war, so in science one of the most difficult judgments the investigator is called upon to make is the selection of a target toward the conquest of which he will dedicate his resources.

From the pages of history comes an anecdote that may prove illustrative. During the War of 1812, an arm of the British Royal Navy was cruising in Chesapeake Bay. At dusk on the evening of 10 August 1813, the ships approached the harbor of the modest fishing village of St. Michaels, on the Eastern Shore of Maryland. The British command, sensing that it had found a vulnerable target, neglected to send a spy ashore to case the joint. It therefore did not learn that the villagers, aware of their peril, had all agreed to extinguish every light in the village and hang all available lanterns on the branches of trees in a nearby forest. The ruse worked magnificently, and all night long the British ships lobbed cannonballs, most of which fell harmlessly among the trees. St. Michaels is known to this day as "The town that fooled the British."

The morals of this tale are self-evident.

1) The identification of the proper target may be more difficult than is generally supposed.

2) Aiming at the wrong target can be enormously costly in terms of ammunition and other resources.

3) In selecting a target, one should secure and study the latest and most sophisticated available information. This conclusion is equally true whether the target be military or scientific.—DEWITT STETTEN, JR., *Deputy Director for Science, National Institutes of Health, Bethesda, Maryland 20014*