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A Chemistry Tip

which to live. Progress in normal science, then, results in the intensive investigation in a limited area and the invention of machines assist the investigation. This could not happen without a specific paradigm to show the way because nature is too complex to be explored at random.

A paradigm change is both constructive and destructive. It is constructive because it accounts for a wider range of natural phenomena or greater precision of something previously known. It is destructive because some beliefs and procedures are discharged.

The "germ" paradigm still persists. However, bacteriology could be at the initial stages of a revolution, for a revolution begins with the awareness of anomalies. The "germ" paradigm within the last decade has developed some serious anomalies, especially in the area of cancer research. The "germ" paradigm has told the cancer researchers what to look for and where to look for it. But in many cases infectious agents (viruses) cannot be found in cancerous tissue. In addition, in those cancerous tissues in which viruses have been found, the isolated viruses have proved to be non-infectious. The resolution of the problems facing cancer research may come about by articulating the "germ" paradigm or it may require that a new paradigm overthrow the "germ" paradigm.

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In the CHEMS laboratory reaction of hydrochloric acid with Mg ribbon, addition of some food coloring to the acid solution makes gas volume easier to read. This increases student interest as the dynamics of the reaction are easier to observe. *The Oregon Science Teacher*