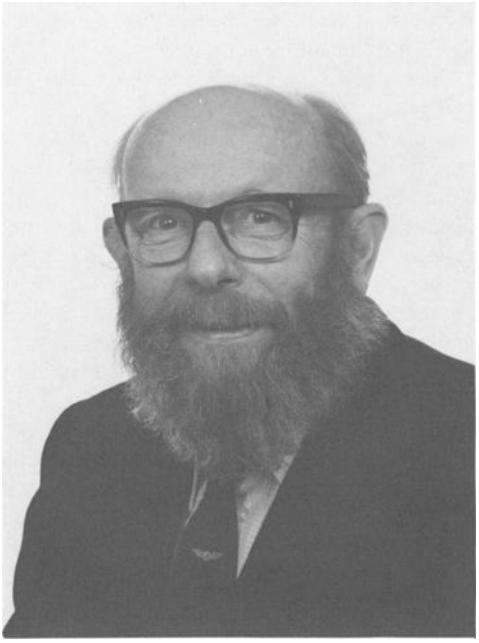
GUEST EDITORIAL



Dr. A. S. Curry, M.A., Ph.D., D.Sc., C.Chem., F.R.S.C., F.R.C.Path.

Research

The Editor has very kindly asked me to write an editorial and I respond with the title "Research."

He and I spent many years at the sharp end of finding out why aircraft fell out of the sky and our researches led us to investigate the methodology involved in the accurate and precise measurements for carboxyhemoglobin, cyanide, and drugs in decomposing bodies. We found many problems, not the least of which was the interpretation of our results.

For ten years I was Director of the Home Office Central Research Establishment, and there I found that "research" was a spectrum word ranging from the academic to the practical and that it was vital to meet the capabilities of the scientist with the project. Perhaps a practical test was the answer or maybe we could solve the problem by thinking about it!

The investigational results had to be married with drugs intelligence—perhaps gas chromatography/mass spectrometry (GC/MS) or high performance liquid chromatography (HPLC) with the detectives in Europe and America. Both teams could be said to have been on research topics at that time. Now the research has paid off and even satellite links are complementing the flying mass spectrometers.

In the biological areas the research on blood groups has been overtaken by "genetic fingerprinting," and it is in part of our competitive spirit that I note that this was an English discovery!

Knowledge comes from fundamental discoveries and even some of them from serendipity, but most of ours is applied research. We use Nobel Prize winners' work but almost always to

solve a crime. Banting and Best may not have thought that their work on insulin would catch a murderer.

In my own area, I would like to know where a drug is acting in a particular cell. When pathologists cannot find a cause of death, we toxicologists come up with some drugs and say "maybe that is the answer," but the fatal lesion is never proved. I see a glimmer of hope on the horizon in this field with fluorescent antibodies and enzymatic screening within the cell, but we have a long way to go.

Out of studies came the question, "Are you sure that the answer is right?." That led to quality control and the discovery that the most eminent laboratories made mistakes and that unrecognized contamination could lead to gross errors.

I know I felt we had rediscovered the wheel! I must deplore the current tendencies of publicists and lawyers to retry a case many years later and to judge the expert witnesses by present-day standards rather than those that pertained at the time.

I also find it difficult to judge when a "research" technique is worthy of operational trial. You can put this caution down to age or experience as you wish, and each occasion is different, but in medicine the decision may be life-saving or it may kill but at least one has a probability factor. The lawyers want a simple "yes" or "no" but then hedge their bets on "evidence." I well remember a very eminent lawyer telling me that he was not after the truth but only evidence. This made an impact on my thinking and I still find many scientists and law students do not know the difference. We do research to get a better idea of the truth—never let us loose that ideal. What use society makes of it then be it on their own heads. One day a scientist, maybe a forensic scientist, will discover why we die and so lead us on to everlasting life. The lawyer will say, no doubt, "off with their heads!"

I decided to write about "research" and then discovered I didn't know what it is—except a driving force that makes us try and find out what the hell is happening!

Dr. A. S. Curry[1]
24 Lima Court
Bath Road
Reading, Berks, U.K.

[1]Formerly, chief scientific officer, Forensic Science Branch, Home Office, London, U.K.