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EDITORIAL

Purposeless research

In the common perception, chemists have the reputation of mixing, stirring, boiling and generally torturing ('coaxing' is a widely used euphemism) chemicals to form new substances, which sometimes turn out to have useful properties. This view of chemistry finds support in the fact that the discoveries of exploitable properties are often serendipitous. Of course, this picture of chemistry excludes the 'clean chemists' who sit in air-conditioned rooms in front of computer screens or in the company of extremely sophisticated instruments. This category would be indistinguishable from physicists, but for the fact that disciplinary boundaries are sometimes as jealously guarded in science, as the Line of Control. Traditionally, chemistry has been practiced in smelly and messy surroundings which do not appear to be conducive to intellectual activity. Our mental image of experimental laboratories is strongly influenced by college and university experiences. Under these circumstances, I was not too surprised to recently hear the statement (from a fellow scientist, of course): 'Inorganic chemists are prone to make compounds without any particular purpose in mind.' Apart from illustrating the all-too-sharp disciplinary prejudices in science, this statement raises an important issue: Is science practiced without a 'purpose' important, relevant or even useful?

It is almost sacrilegious nowadays to defend the practice of apparently inapplicable ('useless') science. Today most scientific projects are driven by a clearly defined purpose; indeed we have become used to associating a missionary zeal with their protagonists. Government agencies are happiest with targetted 'missions' and rightly so. After all there are a myriad problems of real life that are waiting to be solved by spectacular new technologies that seem to be just around the corner. Scientific investigations must then be nudged in a direction which will eventually give birth to these wonderful technological solutions. Science has also become a big business, with large amounts of public money being spent on research. No wonder that the purse strings are loosened only when 'useful' science is promised. We are also living in times where market forces and global politics dictate the direction of research and development efforts. In such a scenario, is there a place for the 'amateur' scientist who does experiments merely because it is a pleasurable activity? It may be worth recalling that there was a time when the demonstrations and lectures at the Royal Institution in London were witnessed by the rich, indulgent and largely idle English aristocracy; this audience was privileged enough to have watched Michael Faraday make history. The situation today is a far cry from the pre-World War II years, when research was loosely organized, relatively little money was spent and science was the pastime of a few dedicated practitioners. The transformation of scientific research from a low-budget, intellectually driven activity closely associated with teaching, practiced by modestly paid academicians, to a professional and business-like activity has been dramatic. There is a parallel in sports.

Not so long ago, English cricket still had the divisions of 'Gentlemen' and 'Players', the former representing the often aristocratic amateurs who played for enjoyment, while the latter were the more plebian professionals who played for a living. Readers who watched the TV serial 'Bodyline' may have noted the subtle tensions between the arrogant 'amateur' Douglas Jardine and the perfect professional Harold Larwood, in their efforts to tame Don Bradman. Ironically, Jardine's approach would be applauded today as ruthlessly 'professional'. Tennis too had its divisions, with hallowed tournaments like Wimbledon, being the exclusive domain of amateurs. But professionalism was on the rise by the 1960s and today there are no real 'amateurs'. Science too has gone the same way, the transition more gradual; the rewards and the public interest are, of course, much less.

But to return to the original theme; must every laboratory experiment be the result of cold calculation and must we only celebrate the brutally efficient, professional successes of science? Is there no room for those

who would like to pursue a hobbyist's approach to science? In these commercial times it seems incongruous to suggest that doing experiments for fun is justifiable. After all, a hobby cannot be subsidized by public funds. But, maybe there still is a place for an old fashioned, amateur's approach, within the precincts of academic institutions, where many young minds are still to decide whether or not to stay with science. Even cricket and tennis must be fun to play, in order to attract the young. The most hardened performers hardly give their best once the enjoyment is gone. So it is with science. We are unfortunately living in times when the pressures of delivering results 'useful' are beginning to overtake even the 'most academic' of our scientists. While we have generally failed to develop an efficient professional cadre of scientists in many important areas, we are in great danger of also eliminating the mildly irrational dreamers. Even cricket would be a hard game to play if we had neither 'Gentlemen' nor 'Players'.

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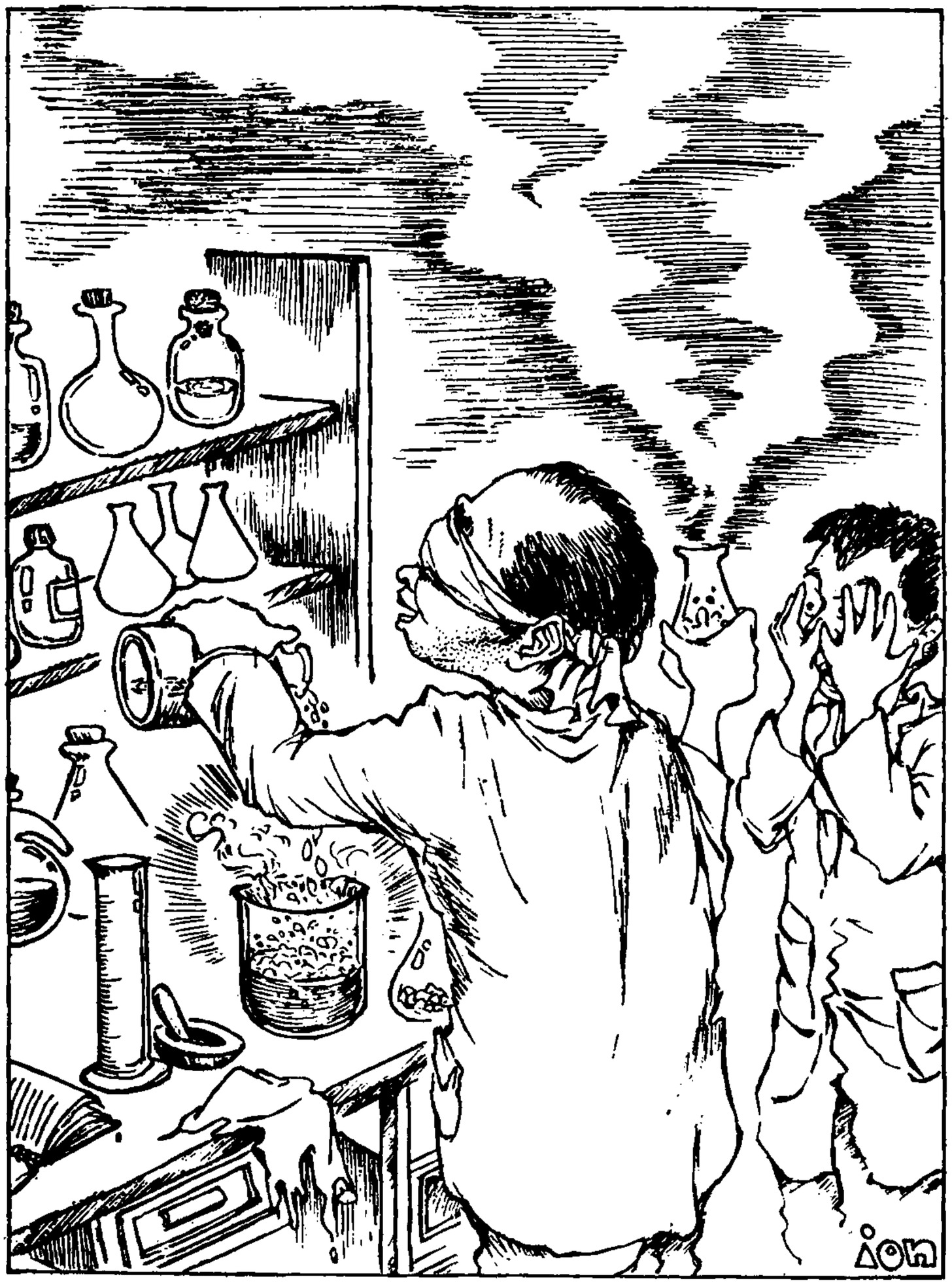

After a series of failures, Professor decided to rely more on his sixth sense to manufacture that wonder drug.