

# Blowing up grandma, or how one pharmacist entered the profession

Ray Sturgess recounts what made him choose to become a pharmacist

It started innocently enough, like most obsessions. The school chemistry laboratory exerted an influence on me from the very first practical chemistry session. I was, dare I say, in my element. My addiction was assured the moment that Peter Pickles, our chemistry master, placed the pellet of potassium in a dish of water. The innocent bit of metal, like a silvery crumb of cheese, coruscated into a firework display of lilac flame. I marvelled that a tiny piece of potassium metal could transform water, a dampener associated with extinguishing fires, into a fluid of exciting possibilities. Latin and English I loved. They were interesting, at times even enthralling. But chemistry was electrifying, seeming to demonstrate the power and vitality of life itself.

If my fellow pupils, in 1943, regarded chemistry in any way different to other subjects, it was because it was taught in a laboratory instead of in a classroom. But the magic of chemistry passed them by. It was left to my form mate Raymond Bowler and me to carry the flame. Raymond was ahead of me, already experimenting with a chemistry set at home. His family was well-off (his father was an electrician) whereas we subsisted on my mother's wage of three pounds fifteen shillings a week — I would have to wait until Christmas for a chemistry set. As it was only September, the weeks dragged sluggishly by.

## My chemistry set

On Christmas morning, I was up at dawn, ripping open the wrapping on the oblong box, heedless of the family rule of saving wrapping paper. I took off the lid and there, in small red cardboard drums with metal press-on lids, were arrayed the magic ingredients: potassium nitrate, manganese dioxide, sodium carbonate, sulphur and the mysterious darkly iridescent crystals of potassium permanganate — the name itself was ecstasy. And in a circular depression in the cardboard lay a coil of magnesium ribbon that when Peter Pickles had lit some at school had burned with a spectacular white glare, which for a few moments had left our retinas semi-blinded. There were three glass test tubes slotted into the cardboard base of the box. Its centrepiece was a sparkling glass spirit lamp whose blue methylated spirits flame was to light my way into a treasure house of chemical exploration.

At home, the dining table served as my laboratory bench since there was no alternative.

So that I could begin my experiments, for once I helped to clear away the breakfast plates and cutlery. I protected the table with a length of oilcloth, lit the spirit lamp and began. I did not follow a chemistry textbook. My plan was simple. Every chemical was to be mixed and heated with every other. I was disappointed to discover that some of the mixtures when heated turned into an immovable coagulated blob in the bottom of the test tube. Test tubes, as I found, were expensive (a penny each) so I decided to be more discriminating with my heated mixtures. I was lucky not to have blown myself up — I had not got to making up potassium permanganate mixtures at that stage.

By the end of the Christmas holiday, my daily routine of five or six hours of "experimenting" — I bridled at any suggestion by adults that I was "playing with my chemistry set" — had exhausted the possibilities of the original powders. Back at school, I learnt from Raymond Bowler of a whole new range of chemicals that produced exciting reactions. All I needed was the money. The answer, I realised, was quite simple. By walking the second stage of my school journey from Leicester city centre to the Wyggeston School on University Road instead of taking the bus, I could save a penny. Doing without the bus on the afternoon return journey doubled my savings and, by Friday, unless there was torrential rain, I had amassed 10 pence.

## Berridges

Just off the market square in town was Berridges, an old-established treasure house of a pharmacy that catered for schoolboy experimenters. Previously, I had only ever been into a chemist's shop to buy dried chamomile flowers for my grandmother, which she stewed in hot water to make a lotion to apply to her thinning hair. Berridges was presided over by two old gentlemen (they were all of 45) in white coats, whose eyes would glint approvingly at my requests for tuppence worth of potassium dichromate or a length of

glass tubing. They even sold those difficult-to-find necessities, ready-bored rubber corks.

On chemical purchase days, usually Fridays, I bolted down my tea, cleared the table and lit the spirit lamp. My grandmother sat next to the dining table in her leatherette chair with brown velvet cushions, facing the living room's coal range, which was our only heating and, with its side oven, our only means of cooking. She perpetually knitted away on large wooden needles making bedjackets and was amazingly tolerant of the chemical smells I produced. Grandma was losing her sight through cataracts. I had heard that losing one sense improved the others but, fortunately, she did not seem to be developing a sharper sense of smell.

## Dinah Shore

When Grandma and I did have disagreements it was usually over my choice of radio stations. The BBC had just started the Third Programme that put out a comprehensive range of classical music. I was into my Beethoven period and would increase the volume when his symphonies or concertos (I followed the Radio Three convention of those days and called them by the Italian



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plural, concerti) were played, causing Grandma to protest at "that racket". Matters were made worse by my discovery of the American Forces Network wavelength, which Grandma classed as an even greater vexation than Beethoven. Perhaps it was her sense of hearing and not smell that was sharpening as her sight deteriorated. Fortunately, the best listening on AFN was in the morning before I set off to school and before my grandmother was up. My mother had already left for work and I had the living room to myself in the company of Glen Miller and Tommy Dorsey. It was the perfect start to the day, being regaled with the honeyed tones of Martha Tilton, Martha Mears and Jo Stafford while I tucked into my bacon and tomatoes. One morning Dinah Shore came on and sang "Manhattan Serenade", and I became her hopelessly gooey, adoring fan.

### Making hydrogen

Encouraged by Raymond Bowler, I became more professional in my experimenting and bought zinc granules and sulphuric acid from Berridges, and a conical flask in which to heat them up to produce hydrogen. That night, when my mother was at choir practice I did the experiment, putting the zinc granules in the bottom of the flask and adding the sulphuric acid. The action of the acid,  $H_2SO_4$ , on the zinc metal produced zinc sulphate and released the  $H_2$  as hydrogen gas, which I passed through a glass tube in the rubber cork. I had invested the colossal sum of one shilling and sixpence on a gas jar from Berridges, and I intended to collect the hydrogen in the jar.

To be certain that the hydrogen was being produced, I decided, in my impatient way, to test the gas as it emerged from the glass tube. Hydrogen gas burns quietly with a pale yellow flame and if there was flame when I applied a match I would know that the hydrogen was on stream and that I could collect it in the gas jar. I put the lighted match near the mouth of the tube and a small yellow flame appeared. But instead of burning steadily, it moved rapidly down the tube and into the flask. There was a surprisingly loud explosion and the liquid contents of the flask shot out into the room. Since her chair was in the direct line of fire, most of the acid landed on Grandma. On her shoulder lay the rubber cork and glass tubing. She gasped and put down her knitting.

"Whatever's that," she asked. Mildly, I thought in the circumstances.

"It's all right, Grandma," I reassured her, my mind busy with the chemistry of the situation. Acids were neutralised by alkalis. I quickly made a solution of sodium carbonate and dabbed at her wispy-thin hair. Then I dabbed at her cardigan until I thought the acid must be neutralised. That night in bed I realised that I had not neutralised the acid on the bedjacket that Grandma was knitting. I consoled myself with the thought that it was being knitted on Grandma's half inch knitting needles and was mostly holes anyway.

After the explosion, Grandma had got out the chamomile flowers, brewed her lotion and dabbed away at her hair, my mother told me the next day.

"You know how she worries about her hair. You'll really have to be more careful," she added.

I explained that hydrogen is not dangerous, that it was just that there was still air in the flask and that hydrogen and air form an explosive mixture. The chemistry theory passed over my mother's head. For once she put her foot down.

"The nights are getting lighter now. You can do your experiments in that old greenhouse outside," she said.



### A stop to my obsession

We lived in the chauffeur's cottage of the Anstey Frith, a substantial manor house and estate on the eastern fringes of Glenfield village. It was the only accommodation that my mother had been able to find after she and Grandma had moved from Mablethorpe at the beginning of the 1939–45 war, which had put an end to their boarding house business. The beach at Mablethorpe, being on the east coast, and a potential location for any German invasion, had been sealed off by barbed wire and the town was finished for the duration as a holiday destination.

Next door to us, joined to our house, was the gardener's cottage, occupied by Mr Jessop and his wife. The only other professional gardener I had known was Mr Clift, our neighbour when we lived in Bulwer Road in Leicester when I was a boy. Mr Clift had been a large man, exuding a quiet benevolence. When his employers were on holiday one summer, Mr Clift had invited us to a picnic at the house in Knighton where he worked, my first chance to get an idea of the style in which the well-to-do lived. Mr Jessop, from Suffolk, was large and bovine. I never saw him without a cap or give a smile.

The government was urging the populace to "dig for victory" by growing vegetables, and Mr Jessop showed my mother the plot of clay soil that went with the chauffeur's

cottage and which we were entitled to cultivate. My mother worked and ran the house, which meant that I was the gardener. I was 14 and had never seen a packet of seeds, but mother explained the elements of digging and sowing and I made an effort. Mr Jessop would sometimes pass by with a barrowful of manure, but he never gave me any manure or a word of advice.

The greenhouse into which I moved with my chemicals and apparatus was the chauffeur's. He had been in the navy for two years and the greenhouse was empty apart from a few dead geraniums in dried out plant pots. There was staging down one side which made an ideal laboratory bench. I experimented happily that evening and left my chemicals and apparatus in the greenhouse. When I went into it the following evening there was not a trace. The staging was bare.

I ran in to tell my mother. We agreed that it must be the work of Mr Jessop. We also knew that there was no point in asking him to return my things. We sensed that the nearest he would get to enjoyment in his pitiful life would be to cause someone else grief. Strangely enough, after the initial shock, I was philosophical about the loss. I had become obsessed with experimenting. I had even snipped off the lower four inches of the living room curtains, to carry out tests on the material. My pillaging was justified to the extent that the curtaining turned out to have interesting chemical properties. The curtains had a pattern of red poppies on a yellow background and when boiled in water produce an orange solution that acted as a pH indicator, turning red with acid and yellow with alkali. Even so, I realised that I had been in the grip of an obsession. But all that was suddenly behind me. I felt the lifting of a burden, the liberation from an addiction that had run its course. There was more to life than chemistry. It had not properly sunk in yet, but there were girls.

We received regular reminders of my experimenting days. The brown velvet back cushion in Grandma's chair, which I had forgot to neutralise after the acid explosion, developed a series of quarter inch holes over the next few weeks, perfectly circular, as if precision drilled.

My obsession with chemistry did, however, in the end have positive results, by cementing my friendship with Raymond Bowler. After the school certificate examinations in my final year at school, we had plenty of free time (spare periods, they were called) and in one of the free-for-all discussions in the form room, the privileged boys were talking about the jobs their fathers had lined up for them. These were the fee-paying boys with fathers in business or the professions in the city of Leicester. Peeved and envious, as a poor and fatherless scholarship boy, I heard myself shout out, "I've no idea what I'm going to do!"

Raymond Bowler, across the room heard my outburst, and quietly replied, "You want to go in for pharmacy. My brother did and he's earning 10 pounds a week." And suddenly I had a future.