



Image of the profession

# Claims to fame

One summer's day in 1928, Alexander Fleming, a physician in the Inoculation Department of St. Mary's Hospital in London, England, observed that a mould had contaminated an agar plate seeded with *Staphylococcus* and had apparently dissolved the bacteria in its vicinity.<sup>1</sup> He succeeded in extracting some of the active principle in the mould, gave it the name "penicillin" after its source, *Penicillium*, and published a series of papers on its antibiotic action on a variety of bacterial cultures. He failed in attempts to purify the extract to a quality, or in a quantity, sufficient for animal experimentation, much less clinical testing, and finally abandoned this work. Ernst Chain, a biochemist in Howard Florey's laboratory in Oxford, learned about penicillin from the literature 10 years later, directed all his efforts toward its isolation and obtained a greatly purified form in early 1940,<sup>2</sup> after only about a year's work. Chain's success can be attributed to his experience with the purification of enzymes, the most ephemeral of substances. Fleming, Chain and Florey shared the 1945 Nobel Prize for physiology and medicine.

In 1971, the Royal Society of London held a symposium celebrating the introduction, 30 years earlier, of the first antibiotic into clinical medicine. In his introductory address,<sup>3</sup> Chain gave his account of the events. It is disheartening to read how he belittled Fleming's discovery with the speculation that he, Chain, or someone else would have found penicillin sooner or later. Chain acknowledged neither Fleming's bacteriological expertise nor the fact that Fleming had been primed for the discovery of penicillin by his discovery in 1922 of lysozyme, a naturally occurring substance in tears and the nasal mucosa that is also capable of dissolving bacteria.

Fleming's discovery of penicillin remains one of the proudest moments in the history of our profession.

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### References

1. Maurois A. *La vie de Sir Alexander Fleming*. Paris: Hachette; 1959.
2. Chain E, Florey HW, Gardner AD, Heatley NG, Jennings MA, Orr-Ewing J, et al. Penicillin as a chemotherapeutic agent. *Lancet* 1940;1:226-8.
3. Chain E. Thirty years of penicillin therapy. *Proc R Soc Lond B Biol Sci* 1971;179:293-319.



"Technicians flog children to collect tears for the preparation of Fleming's lysozyme." Reproduced from the St. Mary's Hospital *Gazette*, 1923, with permission of Audio Visual Services, Imperial College School of Medicine (St. Mary's Campus), London, UK.

## Illness and metaphor

# Dry eye syndrome

### A Very Common Prescription

I store a tube of tears in my refrigerator. Many people must do the same. It has been an excessively dry summer and you use your eyes more than is good for them, the doctor said. At the drug store I was embarrassed to see what it was that he had prescribed for me. Tears! Why, good God, I mean I cry almost every day of my life. If I've no better reason I've only to relax my grip to have my eyes moisten at the memory of certain scenes in old movies: say, Gregory Peck's funeral in *The Gunfighter*. Surely, that ought to be enough. I was tempted to say this to the clerk when she handed over the medication. Lady, it's not what you think, my heart isn't made of flint; believe me, I hurt too. But that wasn't as bad as reading the fine print when I got home. Keep tightly sealed and refrigerate after use, it said. If we have house guests I'll hide the tube at the bottom of the vegetable crisper. And to think there are factories! I picture them as being windowless, lit by pale blue bulbs, and containing row upon row of workers in smocks and hairnets who sit on long benches, bend over long tables, weeping into sterile tissues for forty hours a week, men and women who when they're asked their occupation have to answer: tear-maker.

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