Industry and Ideology: I.G. Farben in the Nazi Era *by Peter Hayes* (Cambridge University Press, Cambridge, 1987), pp. xxviii + 411. Cloth $99. ISBN 0521 32948 5.

The close association of the huge chemical concern I.G. Farben with the Nazis' rise to power, and later atrocities, is one of the more glaring examples of the ubiquitous involvement of science, technology and big business with politics and the military since at least the late nineteenth century. This book carefully documents this association from the concern's beginnings in the dyestuffs and related industries by companies such as BASF, Bayer and Hoechst in the early 1900s to its dismantling by the allies at the end of World War II and the imprisonment of its leaders following the Nuremberg trials. The book's particular strength lies in its author's skill in unravelling the complex of influences at work in the enmeshing of the concern's directors in a web of evil centring on Auschwitz, where Farben was building a synthetic rubber works in the closing stages of the war with slave labour consigned from the concentration camp, and where the infamous showers were being supplied with Zyklon B, a lethal gas manufactured by the I.G. subsidiary Degesch and normally employed as a powerful delousing agent. For 'humanitarian' reasons, the gas was supplied without its usual and characteristically noxious odour. Hayes has skilfully constructed his account, so that a sense of the gradual and seemingly inescapable entanglement in these enormities is conveyed to the reader, with the horrific events at Auschwitz being reserved for the book's final chapter before an Epilogue discussing the Nuremberg trials and some conclusions which might be drawn from the whole grisly episode.

But the chief interest of this book, I felt, consists in the important **general** questions it raises concerning the working of what President Eisenhower first dubbed the military-industrial complex: a phrase with which we are now all very familiar, but whose historical roots are frequently either left out of discussions on the subject altogether or receive only very slight treatment. (David Dickson's otherwise excellent *New Politics of Science*,[1] for example, contains no mention of I.G. Farben.) As Keith Pavitt and Michael Worboys have remarked, the 'close involvement of science and technology with war and the military is **not** [my emphasis] new',[2] and books like Hayes' serve a valuable function in delineating the forms that this involvement can take. Much of what Hayes has to say will sound familiar to anyone interested in the workings of the military-industrial complex today, 'Star Wars' money for private sector R & D being the obvious case to spring to mind. (See, for instance, 'Science Park Eyes Huge Defence Potential', *The Australian*, 24 March 1987).

Thus, in 1932, as Farben's fortunes reached a low ebb during the Depression, and '[r]esearch, the lifeblood of the combine, came almost to a standstill', we find Paul Moldenhauer, an executive of the corporation, saying things like (on the eve of the Nazis' landslide victory in the Reichstag) 'I prefer the National Socialists . . . At least here there is a movement, a search for new ways and new goals'' (pp. 42, 61). A contribution from Farben of somewhere between 20,000 and 45,000 marks to the Party shortly afterwards was the first of many totalling some 4.5 million marks over the next couple of years. And when Hitler began his rearmament programme the combine found that the Fuhrer's policies and its needs 'dovetailed almost perfectly'. As Hayes explains, 'the Party's emphasis on autarky, rearmament, and work creation had revived I.G.'s hopes

for several products that had significant military applications and that the concern could produce almost entirely from domestic resources [at a time of critical foreign exchange shortages], notably . . . artificial rubber, or buna, and synthetic fuel' (pp. 113-4).

Farben didn't stop there, however. Besides massive expansion of its synthetically fixed nitrogen for use in explosives, the combine by 1936, had already become involved in the production of chemical warfare agents in factories being specially constructed for the purpose. By 1939 additional plants were producing mustard gas and a particularly toxic nerve gas called Tabun, which the firm's chemists had happened upon four years earlier. Actually, it was a BASF chemist, Fritz Haber (co-discoverer with I.G. Farben director Carl Bosch of the ammonia synthesising process which bears their names) who, working in this I.G. parent company's laboratories during World War I, had originally discovered nerve has, insisting that 'it was his duty as a patriot to do what he could to help Germany.' This kind of language was to be used frequently by I.G. executives; in early 1934, for example, Volkswirtschaftliche division chief Anton Reithinger insisted that it was 'duty to the national economy' (p. 130) that motivated his division's diversification into a range of products with primarily military applications.

As I said, much of this sounds disturbingly familiar. Harriet Zuckerman has recently described the shaping of scientific research in her own country in a climate of 'enlarged fears about national security and about the competitiveness of the United States in the world market',[3] and one can be forgiven for thinking that Australian science and technology might not be altogether immune from the same kinds of influences. See *The Australian* article cited above. And whether we like it or not, the current incessant appeal to Australian industry and associated science and technology to be more 'competitive' springs from the same social Darwinist roots that motivated the executives at I.G. Farben. Their belief, as Hayes describes it, in 'the inevitability of inequality, the proper place of the working class, and the inefficiency of democratic decision making' (p. xviii), which they shared with their Nazi friends. Even in 1941 Otto Ambros, who had been entrusted with the task of setting up the synthetic rubber works at Auschwitz could say 'our new friendship with the SS is proving very profitable'. Without wishing to draw too close a parallel, this sounds remarkably similar to recent utterances of prominent 'New' Right personnel who claim to be merely striving for a 'freedom' which has been lost 'in the mistaken belief that we could create equality where none exists in nature'.[4] This is not to say that all economic competition is necessarily a bad thing; just that taken to its extreme it can be: war, after all, is its logical extension.

Hayes' book is a generally well written, readable (even if it does become rather bogged down in detail at times) and exhaustively documented contribution to our understanding of one of the most sordid episodes in the history of science and industry. The author does have the irritating tendency of some historians to denigrate previous attempts to deal with his subject as 'rather preliminary' studies, etc., and, what is worse, to contrast the 'breadth' of his own account with the 'highly selective' (pp. xiv-xv) use of sources by previous authors, and so forth. But these are minor detractions from a book which provides the kind of counter that is needed to such remarks as that by Tom Forester, recently appointed lecturer in computing and information studies at Griffith University who, in an interview, expressed the view that too much attention was being devoted to teaching history in universities and schools and not enough to 'future'

studies. The 'lessons of history', such as 'don't vote for Hitler', are 'easily understood'[5] Forester said. If only this were really so.

REFERENCES

1. D. Dickson, *The New Politics of Science,* Pantheon Books, New York, 1984.
2. K. Pavitt and M. Worboys, *Science, Technology and the Modern Industrial State,* Butterworths, London, 1977, p. 23.
3. H. Zuckerman, 'Uses and Control of Knowledge: Implications for the Social Fabric', in J.F. Short, Jr. (ed.), *The Social Fabric,* Sage, Beverly Hills, 1986, p. 340.
4. *Sydney Morning Herald,* 5 March 1988.
5. *Griffith Gazette,* 8 April 1987.

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Pharmaceutical Economics *edited by Björn Lindgren*
(Liber Förlag, Malmo, 1984) pp. 286, ISBN 91-38-61372-7.

This book contains twelve of the papers presented at the 6th Arne Ryde Symposium on Pharmaceutical Economics held in Sweden in September 1982. The symposium was organised jointly by the Department of Economics at the University of Lund and the Swedish Institute for Health Economics.

The papers in this volume have not been classified into any parts or sections and at first glance one might form the impression that there is no underlying theme to the collection, other than relevance to the pharmaceutical industry. To a large extent this is true although the editor, in his introduction, argues that the papers generally deal either with issues concerning the use of existing pharmaceuticals or with the performance of the pharmaceutical industry (p.13). This dichotomy, however, is rather broad and is not very indicative of the contents of the included papers.

Briefly summarising each of the papers in turn, the first by Hay utilises cross-section data from 202 Health Systems Agency regions in the United States (US) for 1978 to investigate the determinants of regional variation in per capita prescribed drug expenditures. Of particular interest is the finding with respect to the substitutability of drugs for other health care services. The hypothesis that higher per capita drug expenditures will result in fewer hospital days per 1,000 population is only weakly supported, and no significant relationship is found between per capita drug expenditures and per capita total health care expenditures.

Zweifel develops an economic model of physician behaviour which generates a number of hypotheses concerned with the substitutability of ambulatory care for hospital care. The empirical investigation uses data on 270 Swiss general practitioners and so incorporates a specific institutional feature of that health care system, *viz.* that physicians in German-speaking regions (except major cities) can sell drugs on their own account. The hypothesis that increased use of these 'sold drugs' would reduce the propensity to hospitalise patients was not empirically supported.