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Nuclear Paranoia

The Greatest Power on Earth: the story of nuclear fission, by Ronald W. Clark; Sidgwick & Jackson, 1981

Reviewed by Walter C Patterson

The secrets of the atomic nucleus have always been considered among the most esoteric in the whole canon of science. But the secrets of the atomic nucleus are an open book compared to the secrets of the atomic politicians.

The well-known potential barrier around a heavy nucleus is practically transparent by comparison with the wall that surrounds nuclear policy. The phenomenon has been observed – albeit with extreme difficulty – for more than 40 years, virtually from the electrifying few months in 1938 when a scattered handful of brilliant scientists first identified the fission of the uranium nucleus.

The wall around nuclear policy-making is as high today as it was 40 years ago: here in Britain, within the past year, we have seen the present Prime Minister and a few senior Cabinet colleagues decide in secret to commit Britain to spending at least £5 billion on a new generation of nuclear weapons, the Trident system; and we have learnt that the previous Labour government actually began spending public money on underground nuclear testing in the US for this new generation of weapons even before the secret decision was taken to order them.

It is, of course, this pathological pattern of secrecy which has always been drawn tightly around nuclear activities which has given them the aura of the esoteric. The technology is no more complex than many others with which we play happily everyday – colour television is an obvious example, pocket calculators another. But nuclear technology makes people uneasy - and with good reason: because it unerringly brings out the worst in political leaders in a way that no other technology has ever been seen to do.

Twenty years ago, Ronald Clark published a book entitled *The Birth of the Bomb*. It bore the sub-title, *Britain's part in the weapon that changed the world*, one of the stimuli which prompted him to write the book being to counter the then prevalent impression that the atom bomb had been developed more or less unaided by the United States. While doing the research for this earlier book, Clark had the opportunity to meet and speak to many of the key people in the story of nuclear fission – Otto Hahn, Hans Halban, Lew Kowarski, John Cockcroft, Otto Frisch - all alas since deceased. Clark has now returned to the topic, to bring the story up to date. As might be expected, he draws extensively on the material from his earlier book; the new one recounts again many of the vivid personal vignettes which made the earlier book a modest classic of popular science writing. But his new book goes much farther, and much deeper, into the murky shadows of distrust and deception which descended even as the physical curtain of the uranium nucleus was being drawn aside for the first time.

Clark describes the familiar story of the research in the 1930s which broke open the secret of the nucleus; the Frisch-Peierls memorandum; the MAUD committee; the Szilard-Einstein letter; the frankly desultory efforts in the United States, and the distinctly more urgent efforts in Britain in 1940-41; and the narrowing eyes and quickening pulses of the top political leaders at the ever more possible prospect of the atomic bomb. He discusses with numerous quotations, some from

documents only recently declassified, the devious in-fighting between ostensible allies - Churchill, Roosevelt and their advisors, the Canadians, the French, the Russians - which poisoned the well of nuclear energy even before any had drunk from it. He delineates with many depressing examples the seeming impossibility for politicians and governments to deal openly and honestly with nuclear issues, a habit well established before the end of World War II, which has persisted ever since, and which has unfortunately also spilled over into civil side of nuclear energy far too often. In this habit of secrecy the British nuclear establishment must be counted.

Clark describes the extraordinary episode in 1941 when ICI made what amounted to a takeover bid for the British nuclear effort, with an eye to its postwar potentials for power production. This conviction on the part of the British nuclear community, that civil nuclear energy would ultimately prove to be a money-spinner, has now prevailed for 40 years, despite decades of evidence to the contrary.

Nevertheless, this concern for future nuclear profits was by no means the least of the irritants between Britain and the United States during World War II. The American fear that Britain would take commercial advantage of American war-related nuclear work was one of the primary reasons why the Americans progressively shut the British out of the Manhattan Project. When the Americans learned that the leading French scientists had actually patented some nuclear processes the Americans became even more close-mouthed than ever.

Nor was this distrust strictly between governments. Clark quotes a startling memorandum from Churchill to Lord Cherwell about Niels Bohr, one of the greatest scientists of the century, a key figure in nuclear history and a man of outstanding personal courage and integrity: “The President [Roosevelt] and I are much worried about Professor Bohr. How did he come into this business? He is a great advocate of publicity. He made an unauthorized disclosure to Chief Justice [sic] Frankfurter who startled the President by telling him he knew all the details. He says he is in close correspondence with a Russian professor, an old friend of his in Russia to whom he has written about the matter and may be writing still. The Russian professor has urged him to go to Russia in order to discuss matters. What is all this about? It seems to me Bohr ought to be confined or at any rate made to see that he is very near the edge of mortal crimes. I had not visualized any of this before, though I did not like the man when you showed him to me, with his hair all over his head, at Downing Street. Let me have by return your views about this man. I do not like it at all.”

After the war’s end the paranoia, if anything, increased. The British decision to develop nuclear weapons was taken by precisely six people. The first Soviet explosion in 1949 undercut opposition in the United States to development of the hydrogen bomb; and so it went on. Now there are at least six nations with nuclear weapons, and at least a dozen more with the ability to produce them at will.

Clark makes it clear that the politicians believed from the outset, and still believe, that nuclear weapons are weapons of unparalleled political power. But of late they seem to have forgotten the physical power of nuclear weapons. As the nuclear sabre-rattling grows every more hysterical, it is possible to succumb to a desperate temptation to renew a proposal from the Franck Report of 1945: that we gather together the Reagans and Thatchers and Brezhnevs and belligerent heads of state from every corner of the globe, the Third World included, transport them to a deserted island, and there for their enlightenment detonate one thermonuclear warhead in the atmosphere, to remind them what they are playing with.

As Clark tells “the story of nuclear fission” the tone of his fluent, absorbing prose grows ever more sombre, lit with flashes of biting insight. He defines “proliferation” as “the acquisition by non-nuclear powers of the nuclear weapons one already has oneself”; this comment appears, with suitably ironic symbolism, on page 238. About Britain’s decision to develop the hydrogen bomb, imposing further strains on an industrial fabric already bent out of shape by the atomic bomb programme, Clark reflects: “rational thought often flies out of the window when nuclear discussion

comes in at the door" – a point worth remembering the next time a nuclear advocate decries nuclear critics as "emotional".

The substance and tenor of Clark's book evoke inescapably another scientific metaphor: the uncertainty principle. In nuclear affairs, we are fated never to know the whole truth, about major policy decisions and events; and the nuclear uncertainty we now face may be the final uncertainty.

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