# Letters

## German Scientists and Atom Bomb

If any proof were still needed of the unfortunate fact that some scientists, when discussing political or moral problems, tend to think unscientifically, Condon's thoroughly prejudiced review of my book *Brighter Than a Thousand Suns* would become a prize exhibit [(*Science* **128**, 1619 (1958)].

In order to prove that I am "propagandizing" for a favorable view of some German scientists under the Hitler regime without "real evidence," he suppresses all the evidence in my book which does not suit him. Condon does not mention the fact that excellent men and proven opponents of the Hitler regime like Otto Hahn, Paul Rosebaud, Wolfgang Gentner, and Hans Suess (who has since become a United States citizen) deliberately refrained from helping the Nazi war machine (see pages 97 and 98 of my book). He suppresses the long story I have told about Fritz Houtermans, who completed his first study of the uranium problem in September 1940 and wrote during the war on the "Problems of Release of Nuclear Chain Reactions" but saw to it that this study did not get into the hands of the Army Weapons Department (page 95). Condon does not comment on Nobel prize winner Max von Laue's words, when consoling Houtermans, who came to him in panic after he had heard that Heisenberg and Weizsaecker had started working on the "uranium problem": "My dear colleague, no one ever invents anything he does not really want to invent" (page 94).

I maintain—and after all there is the main evidence behind me, the surprising fact that the German physicists, so greatly feared for their scientific ability, did make so amazingly little progress towards a nuclear bomb—that lack of enthusiasm—"passivism"—born out of their fear of what Hitler might do once he had an atomic bomb restrained their actions, whereas the scientists on the Allied side (and as a fighter for the Allied cause, who received the written official expression of gratitude from the United States Government for my active part in fighting Hitler, I am one who belongs with them) had then every reason to believe that their cause was just. But I feel that the dropping of the bomb on Hiroshima has somehow tarnished this proud feeling.

It is simply not true that I have been "singling out the atomic scientists for moral condemnation." First of all, I did not condemn them. I simply wanted to show that they became the captives of a machinery they had helped to build. Throughout my book I tried to make my reader feel some understanding of and compassion for men who, owing to the fact that they lived in a world in which science, politics, and morals were unfortunately "compartmentalized," finally acted as they did.

If there is a villain in my book it is that old-fashioned "specialization" born precisely in the German universities and later carried over into the American universities, which tends to make scientists narrow and one-sided by presenting a part of life rather than the whole of it—to turn them into people who agree sometimes much too easily with rather horrible decisions put before them. And if my book has any hero it is the new spirit of awakening universalism and modesty grown precisely out of the ghastly experience of the atom bomb.

I wholeheartedly agree with Condon that a team of historians ought to write the crucial history of those men as soon and as objectively as possible. Having gone into that field with fewer preconceived notions than some of the men who now defend in a rather emotional way the "official view" against the facts I have discovered, I am convinced that such a team will not only find fault with me but will also find some merit in my having unearthed some facts which until now had been buried under the bouquets of professional courtesy and veiled by the mist of nationalistic thinking.

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## Source of Fallout

A question has been raised about the source of the fallout whose partial analysis we reported in the article "Long-lived cobalt isotopes observed in fallout" [*Science* **128**, 417 (1958)]. The objective of this article was to report the detection of measurable quantities of radiocobalt in three specific samples of fallout material. These quantities were expressed in terms of radiocobalt-strontium atom ratios. It was noted that the samples were from a single detonation.

It is now possible to state that the samples were from a "clean" bomb and that bombs of higher relative fission yield would result in lower cobalt-to-strontium ratios than those reported. Data available to us indicate that the amount of induced radiocobalt produced is approximately proportional to the total yield (fission plus fusion) of a weapon. Consequently, the $Co^{60}/Sr^{90}$ ratio is proportional to the total-yield/fission yield ratio.

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