letters

Dirac recalls Kapitza

I was very interested in the article by Grace Spruch about Kapitza (September, page 34). I have been a very good friend of Kapitza for a long time. I have known him since 1923 and was glad to see such a detailed and accurate account of his life.

I did not know that Kapitza felt so insecure during his early years in Cambridge. He seemed to me full of self-confidence and relied on his firm friendship with Rutherford. When it was a question of financing the apparatus for his work on strong magnetic fields produced by the energy of a flywheel, he applied for double the amount of money that he needed, so that if his apparatus got smashed he could have a second chance. He was allotted this money. Actually, the apparatus did not smash and he did not need the reserve money. This incident shows his character of boldness which must have dominated his insecurity.

Kapitza like to tease people. (He never teased me.) His friend Housman lived upstairs in Trinity College and had trouble with the stairs, so he was thinking of having an elevator installed. When he spoke about it to Kapitza, Kapitza said "What will you do if the elevator sticks between two floors?" Housman was so disturbed by this possibility that he abandoned the idea.

Kapitza stood up bravely to Stalin. Basically Kapitza and Stalin respected one another. When Kapitza refused to work on the H bomb he was stripped of most of his positions and honors. But he was allowed to retain his membership in the Academy of Sciences, with a small stipend attached to it, and also his dacha. He just had to live quietly in the dacha with that stipend. He was not strictly under house arrest. He could move about freely, but his former friends were afraid to meet him so he had nowhere to go, and so he stayed home. He fitted up a small laboratory in his dacha, with no one to help him but his wife, but even so he did some good work there.

In course of time the restrictions against Kapitza were relaxed and he was allowed to give lectures once a week. Then came Stalin's 70th birthday. Kapitza refused to attend the celebrations and the permission to lecture was withdrawn.

Kapitza wrote a letter to Stalin saying that Beria was untrustworthy and should be watched. This letter was of course strictly confidential. Somehow it got into Beria's hands. Beria then became Kapitza's implacable enemy and wanted to have him done away with. But Stalin ordered Beria not to touch Kapitza.

Then came Stalin's death. It was a very dangerous time for Kapitza. There was no one to protect him any more. Kapitza just continued to live very quietly and hoped that Beria would have too many other problems to be able to deal with Kapitza.

One morning two men appeared at Kapitza's dacha and wanted to see his laboratory. Kapitza showed them around and explained things to them, but soon became convinced that they were not real physicists and had come for some political motive, he could not guess what. At twelve o'clock the men suddenly said they had seen enough and left abruptly. Kapitza heard later that at 12 o'clock on that same day Beria had been arrested. Kapitza believes that these two men were really his friends, who would have tried to protect him if Beria had taken any last-minute action against him. With the fall of Beria, Kapitza was restored to all his previous positions and honors.

Kapitza was expected at the Einstein Centennial Celebrations in Ulm in September 1978, but at the last moment he cancelled his visit on the grounds of ill health. Some people wonder if he was really sick or if the Russian government had withdrawn its permission for him to attend. But I met him in Lindau in June 1979 at the meeting of Nobel Prize winners and he then confirmed that he really had to cancel his visit to Ulm because he had had heart trouble. I was very happy then to meet Kapitza and his wife again and find them in good health.

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The first and last sentence of the article on Pyotr Kapitza by Grace Marmor Spruch (September, page 34) allege that during a Pugwash Conference, the Soviet participants issued a statement condemning Academician Andrei Sakharov

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and his activities. This is entirely untrue; no such statement, nor any other, was issued by Soviet participants at any of the Pugwash Conferences. Those familiar with these conferences know of the inviolable rule that only the Pugwash Council is authorized to make public statements at conferences.

The article by Spruch probably refers to a story, which circulated in 1973, that Kapitza's name was not on the list of those members of the Soviet Academy of Sciences who had published a letter attacking Sakharov. But that letter was published in Moscow, and had nothing to do with Pugwash. While some Soviet scientists who have attended Pugwash Conferences were among the signors of this letter, others—such as the late L. A. Artsimovich as well as Kapitza—never permitted their names to be associated with any anti-Sakharov campaigns.

We hope and expect that expect that many of Sakharov's Soviet colleagues will join with scientists from outside the Soviet Union in expressing concern about and trying to reverse the recent actions of Soviet authorities against Academician Sakharov.

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(The authors of this letter were the first two Secretary Generals of the Pugwash Conferences on Science and World Affairs.)

THE AUTHOR COMMENTS: Although my primary source of information was interviews with friends and colleagues from Kapitza's Cambridge days, more recent material had to come, in some measure, from newspapers, because of the inaccessibility of the subject. In a feature article in *The New York Times*, 16 September 1973, Israel Shenker discussed a warning by the National Academy of Sciences to Soviet authorities that harassment of Sakharov could interrupt American–Soviet scientific cooperation. The article contained the following: "The American scientists' concern had been sharpened in discussion with members of the Soviet Academy attending a Pugwash Conference (an informal forum of scientists from East and West) in Helsinki. That discussion, as Professor Harrison Brown put it, 'fortified our belief' that Dr Sakharov was in danger. Four of the five Soviet academicians at Pugwash had signed a letter attacking Dr Sakharov. The fifth, Pyotr Kapitza, also long persecuted by Soviet authorities, had not signed."

I had been unaware that the letter mentioned by Shenker, as Joseph Rotblat and Bernard Feld point out, was evidently one published before the Pugwash Conference and signed by forty members of the Soviet Academy. I misinterpreted Shenker's remarks to mean that a separate letter had been issued by the Soviet scientists at the Pugwash Conference.

I apologize for the error, but take some comfort in the opportunity it provides to publicize the nature of the Pugwash Conferences; I can feel only relief that rectification in no way alters any position taken in my article, since it does not detract from the courageous stance of Kapitza or the heroism of Sakharov.

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Suppressing amateurs

In the past twelve months or so many soothing words have been spent describing the opportunities of both fresh and experienced physicists who either cannot get a research position or are out of one because of the recession. (J. R. Fanchi, February 1979, page 15; Lawrence Cranberg, December 1979, page 9; Robert Feldman, January, page 9)

I feel perplexed by these words and also by the encouraging messages to work as an "amateur" scientist. I find these words hypocritical because at the same time nothing is done to give us a chance to protect our scientist status. Our papers, without the magic names of academic or other respected institutions, are not accepted for publication. Being without those institutions we cannot get research funds. Also during the recent meeting of AAS in San Francisco, we were denied the opportunity of presentation.

Are our papers rejected because the editors do not have the heart to charge us for the publication and reprints? Does it not occur to them to get a fund for covering that cost for the benefit of authors and the country alike? Some of us are able to do scientific work even without multi-million-dollar facilities. Is this what bothers the referees? It is against some unalterable, divine policy to grant funds for researches proposed by scientists outside institutions? It seems to me the heart of the problem is that our "professional"—as opposed to "amateur"—colleagues are rather content to have us out of the competition.

We are subscribers to the scientific journals. We pay our membership fees to our scientific societies, and I do not believe that the scientific community of this country ever explicitly consented to the exclusive use of the columns of the scientific journals and other forums by our "professional" colleagues.

I believe it is imperative to protest this unofficial but well-organized suppression of unwanted scientists in this country. It is very laudable to spread the concept and practice of human rights all over the world. However, our own shortcomings should be rectified before we warn other governments about theirs. For the individual scientist it does not matter which set of rules blocks his scientific activity as long as the results are the same.

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Ship of nuclei

The models used in physics are determined, in part, by the biases of their creators. Land-based physicists have traditionally viewed the nuclear mass surface as a "valley" of stability; however, other interpretations are possible. For instance, to one living by the sea, the portion of the mass surface shown in the computer plot on page 30 in December resembles the hull of a ship. This resemblance would be even more pronounced if the mass excess *per nucleon* (F. W. Aston's "packing fraction") were plotted on the vertical axis.

Since all nuclei, including those involved in "every living thing" (Genesis 6:19) are contained in this ship, and since Aston was the first (in 1927) to glimpse a portion of its shape (the profile of its stem and keel), the name *Aston's Ark* seems appropriate.

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Careers in data processing

Robert Feldman's Guest Comment (January, page 9) entitled "A Former College Teacher at the High Schools" brings up the decade-old question of career paths for the species of the overpopulated physics community. My own experiences and choices, as a young physicist seeking employment in the late 1960's and early '70's, are as valid today as they were a decade ago.

After multiple rejections from the academic community, I asked a relative to review the applicability of my resume to the industrial world. He pointed me to an alternative career path in the newly-formed data-processing field. After initial (and unwarranted) trepidation, I found my first job in the "real world" fun—flexible hours; good, tough problems in both hardware and software to solve; congenial atmosphere; and not least, a salary that started at twice the amount I had hoped for. Since then, I have taken to data processing like the proverbial fish in water. I am presently president of my own data-processing consulting firm, still solving good, tough problems (both technical and administrative).

The moral, I suppose, is that there is a huge, constantly growing demand in an area requiring technico-logic intelligence