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Igor' Vasil'evich Kurchatov and his greatest cause

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Igor' Vasil'evich Kurchatov v Vospominaniyakh i Dokumentakh (Igor' Vasil'evich Kurchatov Through Reminiscences and Documents) (Editorial Board: Yu N Smirnov, Editor-in-Chief, et al.) (Moscow: Izdat, 2003) 656 p. ISBN 5-86656-138-7; 2nd ed., revised and enlarged (Moscow: Izdat, 2004) 669 p. ISBN 5-86656-149-2

For the majority of present-day Russian citizens, the surname Kurchatov bears little or no significance. Only some Muscovites relate it to the name of a street and a square in the north-west of Moscow. A recent survey of senior pupils in Moscow schools revealed that almost none of them could recollect what cause their great compatriot had devoted his life to.

Unfortunately, the young people, who had just refreshed their memory prior to their graduation examinations, immediately relieved their memory of everything that is not required for successful business. Also responsible is the country's mass media, which for more than 10 years has been pursuing a policy of erasing many of our people's accomplishments from current history. Among them are the development of the nuclear shield of our homeland and the advent of civil nuclear power engineering.

The readers of *Physics Uspekhi* are well aware that Igor' Vasil'evich Kurchatov was not only the scientific supervisor of these two huge national projects which radically changed the country's appearance in the second half of the 20th century, but also the discoverer of the phenomena of segnetoelectricity (ferroelectricity), nuclear isomerism, and, together with G Flerov and K Petrzhak, spontaneous uranium fission. Unbiased historians of science admit that it was only the ideological opposition to communism that prevented the West scientific community from awarding the Nobel Prize in Physics for at least one of these outstanding discoveries, in which Kurchatov's leading role is indisputable...

Fortunately, the centenary of Kurchatov's birth, which was properly commemorated in our country on January 12, 2003, was accompanied by more than a series of ceremonial meetings. Also prepared (primarily through the efforts mounted by staff members of the RRC "Kurchatov Institute") and published for this jubilee were several monographs, one of which is the concern of my review.

The book *Igor' Vasil'evich Kurchatov v Vospominaniyakh i Dokumentakh (Igor' Vasil'evich Kurchatov Through Reminis-*

cences and Documents) (Moscow: Izdat, 2003), with his energetic signature on the cover, opens with an address to the reader written by Academician Aleksandre Rumyantsev, Atomic Energy Minister (in those days) of the Russian Federation, and a magnificent article by Academician Eugene Velikhov. The latter embraces "the seventeen years of Kurchatov's triumph, which turned Russia into a world superpower" — from the development of nuclear deterrent to the first successes of fusion investigations on tokamaks. The reader's attention will undoubtedly be drawn to the therein-published texts of speeches by Japanese Prime Minister Koizumi Junichiro and US Congressperson Kurt Veldon, as well as to the circumstantial article by Lev Ryabev who had worked side by side with Kurchatov and later headed Minsredmash (the name of the Ministry of Atomic Energy in former times) for many years.

Another section of the book is entitled "The Scientific Council of the Institute approved me as a physicist" — a line from Kurchatov's autobiography. It contains a peculiar document of 1935 (both in the form of a hand-written original and a typed copy) — "Reference for Professor I V Kurchatov" signed by the Director of the Leningrad Physical-Technical Institute, Academician A F Ioffe, in 1934. It also contains a biographical essay about Kurchatov, which was issued in 1981 and prepared by his brother B V Kurchatov, a well-known radiochemist, who had worked with him. This section is concluded with an extremely interesting selection of materials headed as "Priznanie" ("Recognition"). Collected here are quotations from speeches and publications by Academicians Anatoliĭ Aleksandrov, Zhores Alferov, Yakov Zel'dovich, Communist Party leader Nikita Khrushchev, and veterans of the American atomic project Arnold Kramish, Thomas Reed, Glenn Seaborg, and Edward Teller.

It is hard to resist the temptation to cite some of these terse descriptions, especially those given by western experts. The 'father' of the American hydrogen bomb Edward Teller: "I have respect for scientists who did their job well. Beyond all question this fully applies to outstanding Russian scientists like Igor' Kurchatov and Yulii Khariton". Nobel Prize Laureate G Seaborg, Chairman of the US Atomic Energy Commission in 1961–1971: "Kurchatov was one of the world's greatest atomic physicists, and we all are obliged to him for his contribution to the cause of humanity". The veterans of the American atomic project Arnold Kramish and Thomas Reed: "There can be no doubt that the names of Kurchatov and Khariton take rank with the names of Tchaikovsky, Tsiolkovsky and Tolstoy, which belong to Russia — a nation which generates geniuses".

These brilliant testimonials addressed to Kurchatov are supplemented with a wealth of vivid and interesting details from the central (by conception and volume) part of the book entitled "Colleagues and associates reminisce...". Here,

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placed in diplomatically wise alphabetical order are paragraphs written by “the last of the Mohicans” — those who had the luck to work side by side with Kurchatov or under his supervision, or even to be his friend. Among them are Zel’dovich, Khariton, Sakharov, Trutnev, Aleksandrov, Slavskii, Shafranov, and many others, 40 in all. From the kaleidoscope of these, as a rule, short reminiscences, in front of the reader there emerges the gigantic figure of a great scientist, a charismatic supervisor, and an eminent personality.

What lovely words Kurchatov’s associates have found for their leader! Yu L Sokolov, our elder: “When creating Igor’ Vasil’evich, the Lord lavishly endowed him with the very best genes which formed an amazingly harmonious and integral character with firm, unshakeable views and principles.... Manifested in everything the Beard (*this was what Kurchatov’s associates called him among themselves* — Yu V S) had been endowed with by nature was his simple and kind soul which was immediately evident in his peculiar, uncommonly considerate and tactful attitude to people”. Academician Mikhail Sadvovskii: “Igor’ Vasil’evich Kurchatov is something exceptional, he is a natural phenomenon”. One of the first staff members of Laboratory No. 2, as the Institute of Atomic Energy (IAE) was called at the dawn of atomic era, Academician Isaak Kikoin: “Thermonuclear fusion was I V Kurchatov’s swan song. He spent his last days directly in the laboratory at the control panel, at his desk by the thermonuclear facilities of our Institute... . He lived a happy life. Igor’ Vasil’evich was engaged in the most topical, most burning, and most promising scientific problems. He believed in the infinite power of science and infected his collaborators with this belief. Even now this underlies the successes of IAE and the successes of nuclear science in our country”. Placed almost at the end of this section is a set of illustrations with magnificent photographs of Kurchatov at different periods of his life.

One more minor and yet significant part of the book under review will interest any reader. It is entitled “The Soviet atomic project and intelligence”. It contains only three articles; they were all written by Academician Yulii Khariton (two of them in co-authorship with Yu N Smirnov) and they dot the i’s and cross the t’s regarding arguments over whether the Soviet atomic project was home-grown or borrowed from overseas. As the epigraph to this section, the group of editors placed the words of Nobel Prize Laureate Zhores Alferov: “No intelligence service whatsoever could give nuclear weapons and nuclear industry to the Soviet country. This was done by the school of physics of the Leningrad Physical-Technical Institute headed by Kurchatov. This was accomplished due to the Soviet physics school in general, which came into being in the 1930s. Were it not for this school, we would have got neither the nuclear industry, nor nuclear weapons, nor would we have gained many other things”.

The book contains two formal but nevertheless interesting sections spanning the 1940–1960 period; they contain Kurchatov’s speeches and publications in the press as well as documents on the nuclear problem. The reader’s attention will undoubtedly be attracted by the reprint of the handwritten top-secret letter of thanks from the nuclear weapons creators, addressed to Stalin with his comment “Why without Rill’ (a German)?”. By the way, the text provides the answer to this question. The book is concluded with a small reference section — a list of the main data of Kurchatov’s life and activity, information about primary source documents, and

brief information about the authors of the memoirs (Alas! In the 1st book edition this reference section bears several unfortunate late-revealed misprints).

The first edition of the book *Igor’ Vasil’evich Kurchatov v Vospominaniyakh i Dokumentakh (Igor’ Vasil’evich Kurchatov Through Reminiscences and Documents)*, which came out a few days before the jubilee celebrations in January 2003, was virtually instantly distributed among the participants of the International Scientific Conference “Nuclear Age: Science and Society” timed to the jubilee. It is pertinent to note that, apart from the representatives of 98 (!) Russian enterprises, organizations, and institutes of higher education, the opportunity to participate in this conference was taken by scientists, statesmen and political figures from England, Belarus’, Hungary, Germany, Georgia, Kazakhstan, China, the USA, Ukraine, Sweden, Switzerland, Finland, France, the Czech Republic, and Japan. Since the jubilee celebrations were wide in scope and among its participants were distinguished guests not only from Russia but from several other countries, it was decided to republish the book and supplement it with the materials covering the celebrations. This advantageously distinguishes the second edition of the book (revised, enlarged, and corrected by M E Khalizeva and Yu N Smirnov) from the first one.

Included in the second edition of the book, which is pleasant to handle, are two additional sections: “Kurchatov and the new century”, with the most important reports and speeches from the jubilee celebrations, and “Appendix”, with two articles written by well-known Kurchatov’s collaborators. The section “Documents” was enriched with six interesting sources, which describe the development of the first hydrogen bomb in the USSR and its successful test. One more set of photographs and a list of abbreviations encountered in the main text were added to the book, and the misprints found in the first edition were corrected.

There is no question that the book under review is a significant and deserving contribution to the history of natural sciences and, in particular, nuclear science, as well as the history of our country, a magnificent tribute to our remarkable compatriot who managed to accomplish so much and passed away so early (he died in 1960 when he was 57). From the pages of these editions there emerges the figure of not only a scientist and a tough “general of science”, but also a first-rate, lively, and witty man, a versatile interlocutor, a handsome man, who was called Igor the Prince in lobby interviews for his resemblance to the character from the Russian folk epic.

In the West, unfortunately a distorted image of Kurchatov disseminated through the efforts of mass media: he is more commonly known there as a ‘copier’ of American nuclear secrets, which is absolutely impossible with respect to this outstanding scientist, as clearly demonstrated by the materials in the edition under review.

I would like to believe that it would be possible to publish this excellent book in English as well and to place announcement about it on the Internet. Unfortunately, information about past jubilee celebrations, as well as on the two editions of memoirs, is absent even at the site of the RRC “Kurchatov Institute”.

This monograph may be referred to as the last “Farewell” addressed to Igor’ Vasil’evich Kurchatov by Kurchatov’s still-living collaborators. We will hardly live till the next jubilee and, considering the present-day attitude toward science in our country, we should not hold our breath until

the next time the powers that be remember this great compatriot. It is well that at least this book will remain as yet another monument to him, written and published by his disciples and companions... . Read it!

True, this book is difficult to obtain. So far it has been distributed primarily among the participants of the jubilee celebrations dedicated to the centennial of Kurchatov's birth. It is little known even in the circles of physicists in our country. Even in the USA, by the way, where the remarkable book *Stalin and the Bomb*, written by Professor Holloway, was published, when discussing the history of Soviet nuclear-weapons development they restrict themselves, with few exceptions, to only a few names of our compatriots. Wide circles of overseas readers have yet to learn about Kurchatov's vitally important role in the solution of the nuclear problem in the USSR and to appreciate the scale of this personality. Publication of the book under review (or its adapted version) for the English-speaking reader, it seems to me, would play an important part in this regard.