

Annotations to the History of Physics

V. K. LEBEDINSKIĬ: EDITOR OF PHYSICS JOURNALS

(On the 25th anniversary of his death)

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BEFORE the Great October Socialist Revolution, there was only one scientific physics journal published in Russia: the Journal of the Russian Physical and Chemical Society (Zhurnal Russkogo fiziko-khimicheskogo obshchestva - ZhRFKhO).

Russian scientists had long felt the need for a publication to record advances in the exact sciences, and in 1885 V. Bobynin had founded the review Physical-Mathematical Sciences, Their Past and Present, with the sub-title: Journal of Pure and Applied Mathematics, Astronomy and Physics. However, this review could not fill the role of a specialized scientific journal, particularly as regards physics. In 1900, Professor P. A. Zilov founded in Warsaw the periodical Physics Survey, but, like another periodical for the young, The Amateur Physicist, it was intended in the main to popularize physical knowledge. The Herald of Experimental Physics and Elementary Mathematics, a periodical which was published in Odessa, pursued the same purpose.

Unlike the preceding, ZhRFKhO was a national physics journal, which had been in existence for a long time and which had become the only periodical publishing the original work of Russian scientists. Its unique position became particularly evident when its two component sections, the physical and the chemical, split apart and began to be published separately. It was at that precise moment that Vladimir Konstantinovich Lebedinskiĭ became the editor of the Physical Section.

V. K. Lebedinskiĭ was no newcomer in the scientific publications field. For over ten years he had been an active collaborator of Electricity, (Elektrichestvo) a journal in which, in addition to the results of his own experiments, he had published annual surveys of advances in the study of electricity. In these articles, he had reported on the latest findings of scientists and attempted to evaluate the progress made and to place it in its logical context as part of the general evolution of science.

As it happened, in nineteenth century Russia chemistry was at a more advanced stage of development than physics. Russian physics in the nineteenth century produced no scientists of the caliber of A. M. Butlerov or D. I. Mendeleev. Both in the Russian Physical and Chemical Society and in the Society's Journal, chemistry literally crowded out physics,

taking up three or four times as much space in the Journal as did physics. The idea was broached that the Society should be divided and the chemical and physical sections of the Journal be published separately. In the minutes of the 237th meeting of the Physics Branch of the Society, held on December 13, 1905, we read: "In view of the fact that the Chemical Section of the ZhRFKhO has been greatly expanding, so that it becomes necessary to raise the subscription rate, the Council of the Physics Branch and the Journal Commission have come to the following conclusion. The high cost of subscription is a heavy burden on those subscribers who are interested primarily in the physics part of the Journal. This defeats one of the purposes of the Physics Branch, namely, the dissemination of physical knowledge, since there can be no doubt that the circulation will drop sharply, as occurred in 1885 when the subscription rate was raised from 5 to 8 rubles. The number of subscribers on that occasion dropped from 266 to 189 . . . The Council of the Physics Branch and the Journal Commission are compelled to agree to the rate being raised in 1906, provided that the Journal is divided into two sections. . . . Furthermore, the Journal Commission believes that the second part of the Physical Section of the Journal may be improved, and to that end proposes the following measures: 'Election of a special commission, to concern itself exclusively with the abstracts division, i.e., select reviews and articles for abstracting, recruit abstractors, etc As regards the first part of the Physical Section of the Journal, it has long been noted that only a fraction of the original articles on physics by Russian scientists are published in ZhRFKhO. The Journal Commission and the Editor, as well as all members of the Physics Branch of the Society, must therefore see to it that all Russian physicists become contributors to the Journal.' ""*

After lengthy discussions, both at plenary meetings of the whole Society and at meetings of its two branches†, it was decided that the Society would remain united, but that the physical and chemical sections of the Journal would be published separately, under the old title, continuing to number the volumes

*ZhRFKhO 37, 9, Phys. Sect., part I, pp. 349-352.

†Minutes published in the ZhRFKhO, 1905-1906.

as before, but with the sub-head Physical Section or Chemical Section, as appropriate.*

It goes without saying that the editorship of such a journal was a very responsible position. In addition to having a scientific background, the editor had to be an able organizer. Lebedinskiĭ, whose work for Electricity was well known to the members of the Physics Branch of the Russian Physical and Chemical Society, was deemed to be the best available candidate; accordingly, at the next meeting of the Branch, held on December 29, 1905, he was elected editor of the Physical Section of the ZhRFKhO.†

As soon as he entered upon his duties, the new editor endeavored to enlist the collaboration of as many members of the Physics Branch as possible. In the minutes of February 14, 1906, we read: "V. K. Lebedinskiĭ reminded the Branch that the physics part of the Society's Journal must in the course of the year serve as a transition to the Journal which the Branch would publish from 1907 on. Consequently, great importance attached to the work of the Abstracts Commission, which was entrusted with compiling Part II of the Physical Section of ZhRFKhO; from now on, articles published in that part would be cast in the form of brief reviews. The speaker requested members of the Branch to take part in writing the reviews."‡

Soon after, the following advertisement appeared over Lebedinskiĭ's signature on the cover of No. 8 of ZhRFKhO for 1906; "Starting with 1907, the Physical Section of ZhRFKhO will be published separately from the Chemical Section . . . Part II of this periodical, containing review, abstracts, bibliography on physics and articles on experimental practice, will also come out as a separate publication, Physics Problems (Voprosy fiziki), ten issues a year."

This publication will be discussed below. At this point, it may be pertinent to quote from the Editor's report for 1907: "During the year under review, the Journal of the Physics Branch, in the 34th year of its existence, entered upon a new phase. It split away from the Chemical Section of ZhRFKhO and became an independent publication wholly devoted to physics. Its independence and improved format were the natural result of our common desire to raise it to a higher level and make it play a greater part in the evolution of science in our country. Many members of the Physics Branch feel that our publication does not adequately reflect the state of physics in Russia and that the reason for this is that there is no unanimous desire on the part of Russian physicists to establish a central journal of that kind. The Council of the Physics Branch sent a circular to 67 persons

requesting them to submit their articles to our journal, even if they also sent them for publication elsewhere, or else abstracts of their articles and other scientific writings. This circular letter was composed by O. D. Khvol'son. It met with a better response than a similar letter sent out by the Council in 1902: 14 persons replied to it, a particularly favorable answer being sent in by P. N. Lebedev. It would seem that only a little more remains to be done by the Branch before it can say that the primary purpose of Part I of the journal - to reflect all the work of Russian physicists - has been attained."**

Part II of the Physical Section of the ZhRFKhO was to be published separately, and the question of its name was discussed at great length. Among the names proposed were: Physics Problems, Physical Journal, Physics News, and Physics Annual.† The first of these names (Voprosy fiziki), suggested by K. K. Baumgart, who is still active today, was the one chosen.‡

Like many outstanding scientists, Lebedinskiĭ was extremely modest, perhaps too modest; he was inclined to underestimate his own achievements. Nevertheless, in his diary, where he spoke to himself alone, he has evaluated correctly the part he played in many important new endeavors. This is what he wrote on September 19, 1930: "I have entered upon the fortieth year of my professional activity; this fall has been both interesting and successful. During my entire life I have never done anything significant, but I believe I have always shown initiative; I have begun many undertakings which the future proved worthwhile."*** In the list of projects which follows, the writer includes the publication Physics Problems, and remarks that as a result, "various new ideas appeared" in physics, philosophy, mathematics, etc.

In reporting on the very first year of his work as editor, Lebedinskiĭ noted with pleasure that the new journal which was his brainchild had fully justified itself and that the entire membership of the Physics Branch of the Society had taken part in founding it. We read in the report: "The success of this enterprise is due to the kind support of quite a number of persons. Late in 1905, we set up the Abstracts Commission which was headed by O. D. Khvol'son, I. I. Borgman and D. S. Rozhdestvenskiĭ and which selected the first subjects, some of which were dealt with in the year under review, while others still await consideration. Some of the members of the aforesaid Commission are still collaborating in the reviewing operation. The whole Physics Branch made a contribution to this work by leaving the membership dues at their former level, despite the fact that the chemical part of the Journal was no longer included. These re-

*Minutes of the 247th meeting of the Physics Branch of the Society, November 14, 1906; ZhRFKhO 39, 1, Phys. Sect., p. 34.

†ZhRFKhO 38, 1, part I, p. 58.

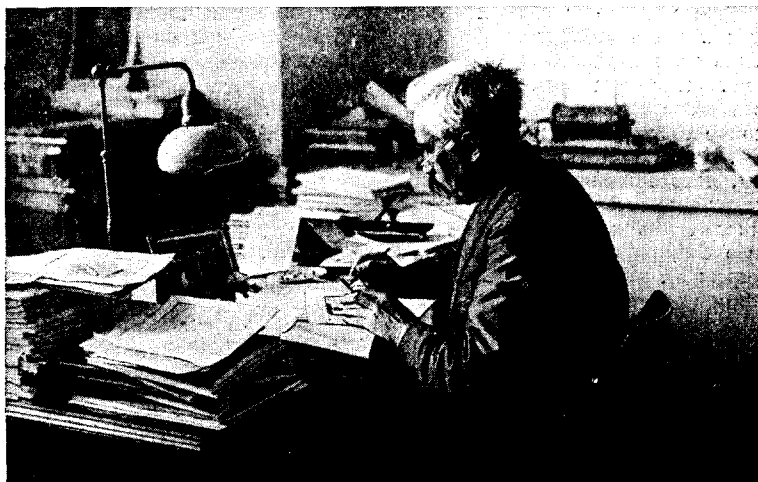
‡ZhRFKhO 38, 1, part I, p. 64.

*ZhRFKhO 40, 1, pp. IV and V (1908).

†Ibid., 39, I, p. 34 (1907).

‡Ibid., 40, 1, p. V (1908).

**Electrichestvo, No. 7, 80 (1957).



Vladimir Konstantinovich Lebedinskiĭ, (1868-1937)

views are either the result of independent study of some branch of our science on the part of the author or are the work of beginning physicists executed under the guidance of persons well-versed in scientific literature. The usefulness of this work in making it easier for us to follow the progress of science, in helping the teacher, in furnishing the first opportunity to the budding author, in providing serious reading matter for young physicists, is surely not open to question. The growing importance of the second part of our journal gave us the idea of also publishing it as a separate periodical, intended for a wider circle of readers than the full journal of the Physics Branch.”*

Proof of the popularity achieved by Physics Problems abounds. We shall confine ourselves to quoting from some of the minutes of the Physics Branch of the Russian Physical and Chemical Society. The minutes for March 10, 1909 read: “Reference was made to the communication from the Central Administration of Military Educational Establishments, to the effect that Physics Problems had been recommended in the circular addressed to military educational establishments for the basic libraries of military academies and for reading by senior cadets.”† At the same meeting, the Branch was informed of “a request by Afanasii Ivanovich Nikolaev, a former student of St. Petersburg University, for a free subscription to the journal Physics Problems, to be sent to him at the Alexander exiles’ prison in Irkutsk.” The decision of the Branch reads: “The Council of the Branch recommends that the request be granted, the administration of the prison being first asked whether the periodical will be delivered to the prisoner.”‡

Lebedinskiĭ himself was fully aware that as editor he had taken only the first steps to his chosen goal. His principal aim was to make the Journal the periodical of all Russian physicists, and not only those who lived in the capital or had some connection with St. Petersburg University. “The future of Physics Problems”, said its editor, “as a journal devoted to the progress of the physical sciences, a comprehensive and contemporary journal, depends on how many people will contribute to it. So far most of the authors represented in it belong to the younger generation of the Physics Institute of St. Petersburg University; but there is hope that young scientists in other institutes and laboratories will join us.”*

Lebedinskiĭ was editor of the Physical Section of ZhRfKhO and of Physics Problems for four years. Historians of Russian science will certainly note the significant role which these publications played in developing our national physics. Of course, physics made real progress in our country only after the Great October Socialist Revolution, when academicians A. F. Ioffe, P. P. Lazarev, D. S. Rozhdestvenskiĭ, L. I. Mandel’shtam and their disciples, many of whom themselves founded whole schools of physics, became active in the field. Nevertheless it is obvious that the universally recognized achievements of Soviet physics were built on a solid foundation. ZhRfKhO did much to prepare the ground for Soviet physics, particularly during the years when Lebedinskiĭ was the editor of its Physical Section. It was difficult, and indeed impossible, for the editor alone to cope with so complex and responsible a task, but as he himself emphasized, he received great assistance from outstanding Russian physicists. Among those he named in this connection were I. I. Borgman, O. D. Khvol’son, P. N. Lebedev, P. P. Lazarev, et al.† That also explains to a large

*ZhRfKhO 40, Phys. Sect., 1, p. V (1908).

†Ibid., 41, 5, p. 235 (1908).

‡ZhRfKhO 41, 5, p. 236 (1909).

*ZhRfKhO 40, 1, p. VI (1908).

†ZhRfKhO 41, Phys. Sect 1, p. IV (1909).

extent the unprecedented increase in the journal's circulation. Thus, in 1908 alone the circulation of the Physical Section increased by more than two-thirds, while that of Physics Problems nearly doubled (89%). It must, of course, be borne in mind that the 1900's were a period in the history of Russian culture marked by a sharp increase in publication, especially of periodicals. At the same time, those were also the years when many periodicals suspended publication, not always for reasons of censorship. The surviving reviews were successful because they met the vital needs of their day.

One of these felt needs was to reflect adequately the part played by Russian scientists in the development of science. The traditional worship of everything from abroad and the - in this case misguided - desire not to be taken for a chauvinist (let us recall that during that reactionary period some of the most rabid enemies of progress used to cover up their evil machinations by "patriotic" slogans) were then very strong. As editor of ZhRFKKhO Lebedinskiĭ had to cope with these attitudes.

A case in point was the controversy about who invented the radio. Lebedinskiĭ was one of those who staunchly supported A. S. Popov's priority as regards this outstanding discovery. He constantly mentioned Popov's claim in reviews and other articles in Electricity, and saw to it that this view was also upheld in the Physical Section of ZhRFKKhO and in Physics Problems.

In 1906, Fleming's basic work on the principles of wireless telegraphy was published in London. Fleming's contribution to wireless telegraphy was significant, and his book was not without merit. In reviewing it, Lebedinskiĭ wrote: "Fleming, a professor of London University, is the organizer of one of the best electrical engineering laboratories in the world. In addition to offering a full course in the subject, his book is of interest to the specialist because of the way in which it expounds the theoretical side of the question and of its description of laboratory measurements as they were made at London University."*

At the same time, however, Lebedinskiĭ pointed out that the author often gave an incorrect presentation of questions relating to the history of science. "In many parts of Prof. Fleming's work, which naturally contains numerous references to the world literature on the subject, there is a certain tendency to emphasize the importance of English authors; this is understandable, and the same can be said of authors of other nationalities . . . But sometimes the reader makes unexpected discoveries; thus, on page 80 the author declares that the latest theory of the electric arc, which everyone attributes to V. F. Mitkevich and Stark (1903), was forecast by Fleming himself in 1899, but he does not say where and in

what form . . . On the other hand, in describing the invention of wireless telegraphy, the author states with assurance that after the publication of Lodge's book on Hertz's experiments, Muirhead, Jackson Srefall and 'possibly many others' worked on the idea of wireless telegraphy. 'Inter alia', the author goes on, 'Prof. A. S. Popov, stimulated by Lodge's book. . .' Later, the conclusion is drawn from a long quotation from our journal that until 1896, when Marconi arrived in England, 'no one had overcome the practical difficulties' and publicly transmitted telegraphic signals with the aid of electromagnetic waves (page 425). It should be noted that the operation of Popov's receiver (with a relay, coherer, automatic striker, and bell) was demonstrated at the meeting of the Physics Society of April 25, 1895, when mention was also made of the advisability of attaching an "air line" (aerial), which was duly done in the experiments of March 12, 1896, whereas Marconi's system was first demonstrated by Price on June 4, 1897 (page 427)."

It would seem, in view of the above, that no one should be in any doubt as regards the invention of radio, at least not in Russia. Yet even among Russian scientists and engineers, the traditional blind worship of Western science was rife. That same year 1907 saw the publication of "Scientific Bases of Wireless Telegraphy", a book by A. A. Petrovskiĭ, Popov's protégé and one of his most ardent disciples. The author, who had been an eye-witness of Popov's work, proved convincingly Popov's priority in inventing the new medium of communication. And yet in reviewing the book, D. M. Sokol'tsev had the audacity to say: "In the last chapter the author relates the history of wireless telegraphy and describes some of the systems of wireless transmission. Here he repeats the old patriotic fairytale that the wireless telegraph was invented by A. S. Popov, and describes only two systems in detail: the non-existent Russian system of A. S. Popov, and the German Telefunken. To the first system he devotes 17 pages and to the second 3. In general, the book would not suffer in the least if this chapter were left out completely."†

As Lebedinskiĭ wrote later, he deliberately left in those lines, merely adding a footnote with reference to his own review of Fleming's book. "I myself," says Lebedinskiĭ, "was on the side of the 'fairytale', but as editor offered an opportunity for expressing the opposite opinion, in the knowledge that it was shared by many Russian scientists (as was proved to me in Moscow ten years later) and in the hope that so uncompromising a position would give rise to a controversy and result in the truth being established sooner. And indeed, in 1908 the Physics Society set up a committee under the chairmanship of O. D. Khvol'son to investigate the question of Popov's in-

*Physics Problems 9, p. 364 (1907).

*Physics Problems, pp. 366 and 367 (1907).

†ZhRFKKhO 40, Phys. Sect. 1, pp. 32 and 33.

vention. After corresponding with Branley, Righi, and Lodge and examining Popov's work, the committee came to the following conclusion: 'A. S. Popov should, in all justice, be recognized as the inventor of wireless telegraphy using electromagnetic waves' (ZhRFKhO, 1900, pp. 63-72).''*

Lebedinskiĭ's activity as scientific editor reached its apogee after the Great October Socialist Revolution, when for the space of ten years (1918-1928) he edited the journal Wireless Telegraphy and Telephony. Here he made use of his experience with ZhRFKhO: until 1921 this publication too consisted of two parts, and the second part, containing popular articles, reviews, surveys, etc., was also published separately under the title The Radio Engineer.

There is no need for us to describe the expansion of scientific periodicals concerned with physics during the forty-five years of the Soviet regime. Let us

*Wireless Telegraphy and Telephony, No. 14, 460 (1922).

merely note that today there are two journals which are the direct successors of ZhRFKhO. One is the Journal of Experimental and Theoretical Physics (JETP), which publishes original papers on physics. The other is Uspekhi Fizicheskikh Nauk, whose main purpose is to publish reviews on topical problems of contemporary physics. This latter journal has been in publication since 1918 and by now numbers 77 volumes.

In view of the achievements of modern science, scientific journals today face unprecedented tasks. Those engaged in their publication could learn a great deal from Lebedinskiĭ, that remarkable physicist and thinker, in the words of G. M. Krzhizhanovskiĭ, who so described him at the Eighth All-Russian Electrotechnical Congress.*

*Proceedings of the Eighth All-Russian Electrotechnical Congress held in Moscow on October 10, 1921, No. 1, p. 157.

Translated by Mrs. Valentine Rosen