The letters of academician V.A. Obruchev from the collection of the Geological institute of RAS and their importance for the history of geosciences

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Abstract. The paper presents a general overview of 870 letters from Russian academician Vladimir Afanasyevich Obruchev (1863-1956) collected at the Geological Institute of the Russian Academy of Sciences. The main topics of the letters are considered: the Obruchev’s publications, editor works, scientific expeditions, activity at the institutes of the Academy of Sciences of the USSR, the study of the Quaternary and mineral deposits. The chronology, authors and main topics of the letters are also indicated. The history of geology studies, organised by V.A. Obruchev and V.V. Tikhomirov, is described separately. Obruchev’s epistolary heritage is very important for the history of science and needs further study.

1. Introduction

The postal correspondence between scientists remained an important part of their scientific work in the middle of the 20th century in the USSR. They kept in touch with colleagues, co-authors and editors by mail. First of all, they shared scientific news, discussed new ideas and methods, prepared manuscripts and sent out reprints. The epistolary heritage was preserved because correspondents greatly appreciated letters from famous scientists and carefully preserved them. The collection of Vladimir Afanasyevich Obruchev’s letters is very important, because these documents describe the main types of his versatile scientific activities, characterise his ideas, plans and principles. He regularly recalled his expeditions and his long scientific career, which he described in letters.

In 1886, V.A. Obruchev studied at the Mining Institute in St. Petersburg. His professor was Ivan Vasilyevich Mushketov (1850-1902), under whose leadership he became a postgraduate. He participated in several expeditions to Central Asia and became interested in the origin of loess deposits. From 1892 to 1894 he embarked on important expeditions to Altai and Northern China. He worked as a professional geologist in Eastern Siberia, where he studied geology of gold deposits and ancient glaciation. He was a professor at Tomsk Technological Institute (1901-1912), Taurida University (1918-1921) and Moscow Mining Academy (1921-1929). In 1929, he was elected a member of the Academy of Sciences of the USSR (AS USSR), then he became the high official (academician-secretary) at the Department of Geological and Geographical Sciences of the AS USSR (1942-1946), and then a member of the Presidium of the AS USSR (1946-1953). He was the head of the Geological Institute (1930-1933) and the Permafrost Institute (since 1939) AS USSR. He made a great contribution to the popularisation of geosciences among young people. Obruchev became best known in Russia for his large circulation of
popular science and science fiction books.

Obruchev exchanged letters with Eduard Suess (1831-1914) since 1891, and supported his ideas about the tectonic structure of Siberia [1]. Unfortunately, the epistolary heritage of Obruchev remains not studied well. His son Sergey Vladimirovich Obruchev (1891-1965) published quotations from 18 of his letters (1894-1955). He also translated drafts of letters to Suess (1892), Ferdinand Richthofen (1899) and to Alfred Hettner (1895-1912). The total number of Obruchev’s letters is about 1500 [2].

2. Materials and methods

V. A. Obruchev was the first director (1930-1933) of the Geological Institute of the AS USSR, established in Leningrad, then was the head of the Department of Lithogenesis and Geology of Minerals. After moving to Moscow (1934) the Institute became the preparation center of the 17th session of the International Geological Congress (Moscow, 1937), where Obruchev was vice-president and member of the organising committee. Then the institute was reorganised into a joint Institute of Geological Sciences (1937-1956). He was the head of the Commission for Study of the Quaternary since 1939. Even in his old age he was the head of the Department of Geology of Central and South Asia (1956).

Vladimir Vladimirovich Tikhomirov (1915-1994), the founder and head of the Department for the History of Geology at the Geological Institute. He has been collecting literature, documents and photographs about the history of geosciences since 1949. It is currently being processed and combined in the online information system “History of Geology and Mining” [3]. Tikhomirov and Obruchev actively discussed issues of the history of geology and systematisation of its knowledge in serial publications, following the Obruchev’s method and ideas published in the volumes “History of Geological Exploration of Siberia” [4]. The first collection of Obruchev’s letters, under consideration, was started by 22 letters received by Tikhomirov (since 1952). They also had the opportunity to closely communicate during time they spent in the “Uzkoye” Academic Health Centre near Moscow (figure 1).

Figure 1. V.V. Tikhomirov and V.A. Obruchev in the “Uzkoye” Academic Health Centre near Moscow, in 1954

After Vladimir Afanasyevich Obruchev’s death on June 19, 1956, Tikhomirov tried to collect his scientific heritage. Many correspondents replied to Tikhomirov’s invitation to send Obruchev’s letters back for studying and copying. Scientists and their relatives forwarded Obruchev’s letters and commented on them. More than 550 original letters and additional photographs and typewritten copies were received. Photocopies of all letters were made first on glass photographic plates, and later copied to special contrast film. Gradually the total number of Obruchev’s letters and notes reached 870. The
receipts were recorded in the journal. Most of the original letters were transferred to the Archive of the
AS USSR and to the Central State Archives of the USSR National Economy. A catalogue of the letters
has now been compiled, and the letters are sorted by date, author and subject. Most of the letters have
been scanned and translated into text format, and the rest will also soon be available for publication.

It is worth noting that the letters are neatly and legibly handwritten by Obruchev. Most of the exact
dates of letters are easily established from their text or from postage stamps on envelopes. In general,
the available letters from Obruchev are not a private type of letter writing, but provide important
scientific information on the history of the Earth sciences.

3. Letters in scientific work of academician Obruchev

After 1949, correspondence became the main way of maintaining contacts for Obruchev, as he had to
spend most of his time away from Moscow in his country house in Mozzhinka village (located near the
Zvenigorod town, Moscow Region). He explained that this isolation was due to his health. It saved him
from flu epidemics and allowed him to be less distracted by visitors. He devoted several hours daily to
answering letters and inquiries. That is why most of the letters (63 %) are from the 1950s.

Obruchev had extensive scientific connections and carried out organisational work, mostly as a
director of the Permafrost Institute. Extensive correspondence also demanded his publication and
editorial work, mostly with the journal “Izvestia Academii nauk” (Bulletin AS USSR), Geological
series. He wrote to Tikhomirov: “I am very busy answering all sorts of inquiries and questions that I
receive from all parts of the USSR with every mail” (May 10, 1955. Letter # 695).

![Figure 2. V.A. Obruchev working with papers and letters](image)

4. The main subjects discussed in letters

The main topics of Obruchev’s letters are related to his scientific research and interests. Among them is
the history of glaciations and permafrost in Siberia, issues of the origin of loess in Central and Middle
Asia, tectonics and neotectonics, and the geology of mineral deposits in Siberia. The coverage of his
interests is described in letters is presented in the table 1.

Discussion of publications and editorial activities dominated in correspondence (over 500 letters).
Obruchev responded to scientific reports, wrote reviews and press notices, which he was regularly asked
to do. The letters also dealt with the state of printing and republishing of his books, then sending them
to colleagues and to school libraries.

Obruchev’s long professorship and his popularisation of science left him in touch with universities
(students and professors), schools (pupils and teachers) and so called “circles” (school clubs of geology,
geography, local history and tourism). He not only thanked them for holiday greetings, awards and
honorary titles (over 60 letters), but also provided direct assistance in sending books, geological and
tourist equipment and money transfers (13 letters about this).
Table 1. The main subjects discussed in the letters of V.A. Obruchev

| Subject                                | Letters | Period         |
|----------------------------------------|---------|----------------|
| History of Geology                     | 133     | 1909-1956      |
| Study of the Quaternary                | 14      | 1949-1956      |
| Loess and his origins                  | 19      | 1947-1956      |
| Glaciation and permafrost              | 14      | 1943-1956      |
| Tectonics of Siberia                  | 7       | 1947-1954      |
| Siberian Gold                          | 21      | 1953-1956      |
| Northern China                         | 24      | 1947-1955      |
| Central Asia and Kazakhstan           | 12      | 1944-1955      |
| Siberia                                | 48      | 1939-1956      |
| University education                   | 24      | 1944-1956      |
| School education                       | 75      | 1947-1956      |
| Return the Geology to Soviet schools   | 11      | 1951-1956      |
| Geographic and geological school clubs | 28      | 1950-1956      |
| Reviews and articles                   | 197     | 1930-1956      |

Table 2. The main recipients of V.A. Obruchev’s letters

| Institution                                                                 | Letters | Addressee names                   |
|-----------------------------------------------------------------------------|---------|-----------------------------------|
| Publications and editorial work                                             | 160     | Ardashnikova Sarah Donovna        |
|                                                                              |         | Granina Alexandra Nikiforovna    |
| Geology of Siberia, Academy of Sciences and Ministry of Geology of the USSR | 31      | Varsanofieva Vera Aleksandrovna   |
|                                                                              | 20      | Ditmar Vladimir Georgievich       |
|                                                                              | 19      | Sedletsky Ivan Dmitrievich        |
|                                                                              | 14      | Satpayev Kanysh Imanteayevich     |
|                                                                              | 13      | Blokhin Sergey Vasilyevich        |
|                                                                              | 11      | Leonov Nikolai Ivanovich          |
| Institute of Permafrost, Institute of Geological Sciences AS RAS and Quaternary study | 128     | Chekotilo Andrey Markovich        |
|                                                                              | 53      | Lamakin Vasily Vasilyevich        |
|                                                                              | 37      | Churakov Alexander Nikolaevich    |
|                                                                              | 26      | Lomonomich Mikhail Ivanovich      |
|                                                                              | 22      | Tikhomirov Vladimir Vladimirovich |
|                                                                              | 10      | Pavlovsky Evgeny Vladimirovich    |
| School clubs and teachers                                                    | 48      | Gruzdeva Albina Ivanovna          |
|                                                                              | 31      | Barabanov Vladimir Fedorovich     |

Obruchev described the geology and geography of Siberia. Letters mostly concern tectonics, stratigraphy, geomorphology, climate, Quaternary glaciations, sediments and loess, as well as problems
of gold and coal deposits. He discussed and prepared some important applications to the USSR Ministry of Geology and to the participants of conferences. Obruchev was interested in and recalled his work in various expeditions, among them Caucasus, Crimea, Ural, China, Central Asia, Siberia, Russian Far East and North.

870 letters went to more than 90 addressees in many institutions. The main colleagues by correspondence are shown in Table 2.

In 1948 and 1953 the 85th and 90th birthdays of V.A. Obruchev (October 10, 1863) were widely celebrated. He responded to congratulations and clarified his biography in connection with the anniversary publications.

Since 1934, there was a separate secondary school subject “Geology” in the USSR. Unfortunately, after the Second World War it was canceled and the basics of teaching geological knowledge was included to the general course of natural sciences [5]. Obruchev’s letters indicated a consistent struggle for the restoration of geology teaching to schools. He supported students, teachers and school geological clubs. He wrote popular science books and manuals on geology, and was responsible for sending it to school libraries. He purchased equipment for schoolchildren and their summer geological excursions.

5. History of geology in letters

The main topic of letters communication with Tikhomirov was the history of geology and preparation of its publications. Obruchev wrote: “of course I was very pleased to see that we have renewed interest, after 35 years break, in studying the past of our geological science” (January 2, 1952. Letter # 689).

Obruchev’s personal clarifications and comments were important for the history of science, as a witness to the events and author of fundamental books and summaries. He shared documents and references about scientists with such explanations: “If for history you need biographical information about somebody – let me know their names and I little by little in my leisure hours can report what I know and what is not in the printed obituaries” (underlined by Obruchev, February 17, 1952. Letter # 690). He sent and described his own photographs: “Finally, I was brought from Moscow old photos that interest you to publish them in my article on the history of geology. This is my portrait of 1889 or 1890, when I was the only official full-time geologist at the East Siberian Mining Office” (August 5, 1952. Letter # 705). “And I don’t have my portrait from the time I worked in Turkestan in 1886-1888, there were no dry plates in those years and I didn’t photograph anything; private photographers arrived only in 1890 and one who came to Irkutsk at that time took that photo” (July 2, 1954. Letter # 698).

Thanks to the methods developed by Obruchev, the organisation of geological abstracts and reports (by regions and institutions) began, a periodisation in the history of geology was developed and centralised management was approved. He instructed Tikhomirov: “has the question of allocating funds for organising work on compiling the history of geological research since the time of Lomonosov been raised, or will the institutions agree to this work seek them out themselves or release them from their own budget? Will there be a common leading centre or will everything be scattered among various organisations, each of which will do the work as it wishes?” (June 28, 1954. Letter # 699). “Until such organisers are appointed, the geological survey reviews of the USSR will not move forward properly” (December 13, 1954. Letter # 696).

Obruchev also pointed out that oversecrecy in the USSR hinders the work of historians of science. He wrote: “Raise this issue in the office. The new bibliography, at the present rate of classification can not be done, but the old one can” (January 2, 1952. Letter # 689). He welcomed the reduction in the classification of literature after Stalin’s death: “Thank you for sending all the instructions for the work with abstracts. It is expected that it will finally begin, and the harmful classification of various matters will finally be destroyed” (November 1, 1955. Letter # 693).

Finally, on the initiative of academician Obruchev, the Commission on the Geological Study of the USSR was set up in 1955, chaired by Nikolay Sergeyevich Shatsky (1895-1960), then by Tikhomirov, since 1958. Thanks to this it was possible to publish in 1961-1991, a multi-volume edition of abstracts and bibliographies “Geological Survey of the USSR” (from 1800 till 1970) for 50 regions.
6. Conclusion
Obruchev’s letters are of great importance to the history of geosciences as numerous of its as documents clarifying the main directions and plans of his long creative work. They reveal his goals and aspirations in science and development of education. Letters described his organisational work and broad scientific and public relations. Texts in letters serve as an important supplement to his numerous publications, reviews and editorial work, they characterise the identity of the author from different angles. Many of Obruchev ideas expressed in his letters remain relevant and need to be included in the history of science circulations.

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References
[1] Minina E L 2006 From Russia to Austria and back: Correspondence between E. Suess and V.A. Obruchev Herald RAS 76(10) 946–952
[2] Obruchev V A 1964 Selected works vol 6 (Moscow: Nauka) pp 229–288
[3] Vtorov I P 2019 The Information System “History of Geology and Mining” as a scientific tool for historians of Earth sciences IOP Conf. Ser.: Earth Environ. Sci. 350 012020
[4] Obruchev V A 1931-1949 History of geological exploration of Siberia Periods 1–5 (Moscow and Leningrad: AS USSR)
[5] Varsanofieva V A 1946 Teaching mineralogy and geology in the Soviet school Natural sciences in school 3 133–158
[6] Perlov L E 2021 Academician V.A. Obruchev: Letters Troitskiy variant – science 328 11