

**Scientific results report**  
**PHARMATRANS.**  
**All Things Apothecary in 16th-20th-century Transylvania. The History of Pharmacy**  
**Collection in Cluj-Napoca**  
**2022**

**Executive abstract**

All objectives have been reached in 2022, a few will be completed in 2023, while other notable results have not been anticipated at all. Among the latter one can mention the inclusion in the collection and processing of more than 1000 artifacts (recorded under 110 inventory numbers). The project has benefited from good management throughout the second year of implementation (coordination, meeting of team members and collaborators, online and in person, progress monitoring and results, report) and is being audited (activity 2.1). The project and its activities have been promoted on the project website (result and catalogue structure updates, 22 blog posts in Romanian and 22 in English), the website of the host institution (twice yearly newsletters), and social networks (more than 60 posts, as compared to the minimum 50 estimated) (activity 2.2). Three conference presentations have been prepared and delivered, one more than estimated, two during international meetings and one during a national academic event (activity 2.3). Four articles have been written (two published, two under evaluation for publication), one study written in 2021 has been published and another translated, edited, and is under print in a collective volume. The objective for this year was to have three articles partially written, so this objective has been exceeded (activity 2.4). Team members have visited history of pharmacy and science museums abroad (Milano) and have acquired specialized books and contacted specialists abroad, especially the research team of a similar Polish project (activity 2.5). A bit more than the 250 envisaged goods have been conserved/restored (i.e. 264), but more than 1000 have been processed and added to the collection, which was previously not taken into consideration (activity 2.6). Most of the catalogue entries and introductions have been written, backed by substantial background research, all manuscripts partially transcribed and translated, all old books processed, while several artifacts have undergone special investigations. The structure of the introductory volume has been set, with several articles from significant contributors received, some already translated and edited (activity 2.7). Advanced analyses have been performed on artifacts (X-ray fluorescence, microphotography under direct and polarized light, paper and parchment tests) and samples of materia medica have been collected and analyzed abroad, by specialized centers in Italy and Poland (chromatography, mass-spectrometry, light chromatography) (activity 2.8). The interpretation of the results and completion of at least one specialized article based on these findings are planned for 2023.

The second year of the research project has mainly focused on the **research for and the completion of the exhaustive catalogue** of the History of Pharmacy Collection in Cluj (**activity 2.7**), the main objective of the research team. First, we have photographed (with the continued pro-bono cooperation of Dr. Alexandru Rădulescu) and processed (inventoried and included in the collection) most of the previously unknown artifacts identified when the collection was relocated from the Hintz House to the temporary storage rooms of the National Museum of Transylvanian History, plus several donations received in 2021-2022 and recent archaeological finds. Thus, the collection has been **enriched with 1030 artifacts** (manuscripts, books, pharmaceutical containers, ephemera, druggist containers, a lot of more than 600 pharmaceutical financial and accounting documents from the Engel pharmacy in Iași etc.) (Fig. 1), recorded under 110 inventory numbers IF 2413-2523. Though the newly added items have already surpassed our initial estimation and have considerably enriched the collection, there are still more unprocessed items (such as a large lot of accounting documents from the Hintz pharmacy and about 200 unidentified contemporary containers, of lesser historical value). Due to independent factors, such as the extended medical leave of the paper restorer of the National Museum of Transylvanian History and the lack of sufficient time, we have decided to exclude such goods from the scope of the present project. The catalogue will likely have a subsequent volume published by the museum after the completion of the project, as we envisage a new wave of public interest and donations after the reopening of the exhibition in the Hintz House in 2023. We have also decided that the lot of documents pertaining to the history of the collection (notes and correspondence of prof. Valeriu Bologa, the founder of the museum, documents pertaining to the previous museographers, blueprints of the museum) will be subsequently processed and included in the sub-collection “The History of the National Museum of Transylvanian History” by curator Dr. Ovidiu Munteanu.

Dr. Mária Pakucs has completed the inspection, processing, partial transcription and translation of the **manuscripts** in the collection. She has travelled from Bucharest to Cluj twice in order to inspect both the manuscripts and the artifacts with paleographic writing. Some of these items required special inspection under UV light for better visibility, especially the inscriptions on pharmaceutical ledger covers and the drawers of the 18<sup>th</sup>-century medicine chest (Fig. 2).

The six-volume catalogue is almost complete, with all item entries written by team members (to be refined and corrected in the beginning of 2023) and the introductions to the

separate volumes sketched. The structure of the first volume of the catalogue has been set, with several contributions from external specialists delivered and edited (though not all of those invited have answered our invitation):

#### Introductory studies

- Ana-Maria Gruia, “Introduction”
- Ana-Maria Gruia, “Pharmatrans project presentation”
- Ana-Maria Gruia, “The history of the collection”
- Ana-Maria Gruia, “An overview of the collection”
- Ioana Gruia, “The old books in the history of pharmacy collection”
- Maria Pakucs, “The manuscripts in the history of pharmacy collection”
- Ioana Cova, “Conservation and restoration interventions on artifacts in the collection”
- Márta Guttmann, Andrea Beatrix Magó, Investigations performed on artifacts in the collection

#### Historical case studies

- Ana-Maria Gruia, “The pharmacies of Cluj”
- Robert Offner, “Tobias Mauksch, the privileged pharmacist of Cluj/ Kolozsvár/ Klausenburg”
- Melinda Mitu, “Dr. Hintz György József I (1840-1890)” – delivered in Romanian, has been translated in English.
- Kovács Zsolt, “The history of the Hintz House in the light of the recent research and restoration works” – delivered in Romanian, has been translated in English.
- Oana Habor, “Pharmaceutical education in Cluj (1919-1934)” – delivered in Romanian, has been translated in English.

For the history of the pharmacy and of the collection, Dr. Ana-Maria Gruia has conducted several informal interviews with Dr. Eva Crişan, the first museographer in charge of the collection under the management of the History Museum in Cluj, Dr. Gábor Hintz, how has initiated the recovery process of the Hintz pharmacy from the Romanian State, and Dr. Georg Hintz, the current owner of the house. Oral history thus becomes of the numerous tools employed in the completion of the research project. Georg Hintz has also revealed that the family had preserved the original documents from the 1949 nationalization of the pharmacy. Copies of this previously unknown and

very valuable historical source have been made available for study and will be detailed in Ana Gruia's study regarding the pharmacies from Cluj, in the introductory catalogue volume detailed above.

The second type of activities performed in 2022 was aimed at continuing the **analysis of materials and surfaces** (activity 2.7), mainly of the components of the 18<sup>th</sup>-century medicine chest. Dr. Magó Andrea Beatrix, collaborator working for the National Museum of Transylvanian History, has completed the **microphotographic investigation** of 8 complex artifacts. She has performed microscopic analyses under transmitted, reflected, and polarized light on several textile, paper, thread and *materia medica* samples from the medicine chest, discovering that the paper employed as cover for the containers was handmade out of vegetal fibres (rags were recycled, shredded and made into a paste, leaving colored microfibrils in the structure of the paper). The investigations have also revealed the structure of the thread used for securing the paper covers (made of twisted fibers) (Fig. 3). She has also confirmed that the content of some of the bottles matches the inscriptions. The investigations were performed using an OLYMPUS CX33 microscope and a polarizing NIKON-OPTIPHOT2-POL microscope (working condition with one Nicol and cross Nicol). The analysis of the paper components of the Baroque medicine chest included the identification of paper pH and the quantity of glue employed. Some samples were basic and other acidic, but this may be explained by the interaction of the paper covers with the medical preparations and the specific preservation conditions. Dr. Magó has also checked the type of paper glue. This test reveals the excessive, normal, weak or absent quantity of glue in the paper based on the absorption of a micro water drop during a set interval. The absorption times differed considerably, pointing again to the possible change of paper covers due to the interaction with the contents, or the possible use of different types of paper when the covers were replaced (the change in content required the change of cover, with a new inscription).

The series of planned investigations has continued with a number of non-invasive XRF (**X-ray fluorescence**) tests performed with a portable EDXRF spectrometer Elva X Prospector3 MAX with energy dispersive SDD detector in collaboration with SC Union SRL Cluj-Napoca (Fig. 4). The tests have led to the identification of the metal alloys used for several components of the 18th-century apothecary chest. We have thus discovered that the key and rivets of the chest are made of an alloy rich in iron, the other metal components are made of copper and tin, while the screw caps of the glass containers are made of lead (toxic, but soft and easy to process).

The type of parchment and/or velum on some of the pharmacist diplomas and old books has been determined with the aid of Dr. Lucreția Miu, from Institutul Național de Cercetare-Dezvoltare pentru Textile și Pielarie in Bucharest. This was a chance, but very useful collaboration, mediated by Ioana Cova, as the project team and museum staff lack a specialist in parchment and leather.

During 2022 team members have also selected, sampled (Fig. 5) and sent for analysis the *materia medica* and materials to several institutions (activity 2.8). In 2023, 5 samples will be sent for **SEM-EDX** investigations of inorganic materials (glass, metal) and *materia medica* to the National Institute of Research and Development for Izotopic and Molecular Technologies in Cluj-Napoca, in collaboration with the Faculty of Chemistry. 14 samples were sent for **chromatographic and mass spectrometric analyses** at the Department of Chemistry and Industrial Chemistry of the University in Pisa (some paid for, some on the basis of scientific cooperation). The team led by Prof. Maria Perla Colombini has created a database of biomolecular markers through the analysis of reference materials, replicas of old formulations, and artificial ageing of both reference materials and replicas, and can thus provide some of the interpretation of the results. The same 14 samples were sent for **liquid chromatographic–mass spectrometry analyses** to the Department of Pharmacognosy and Herbal Medicines of the Wrocław Medical University. The latter analyses have been performed free of charge, based on an ad-hoc scientific cooperation with a Polish research project<sup>1</sup> that we have discovered while taking part in the history of pharmacy congress in Milan. The results of all these analyses have just been received and will be fully processed and interpreted during 2023. In the collection, analysis, and interpretation of the samples we have benefited from the cooperation of Dr. Márta Guttmann, chemist and expert conservator, lecturer at the University of Sibiu and Dr. Beatrix Magó, working with the National Museum of Transylvanian History.

Another objective was to **clean, consolidate, and restore the artifacts** that require such specialized interventions (activity 2.6). The 264 artifacts selected items, made of paper, parchment, glass, and ceramic, have been processed and documented by Ioana Cova (team member) and her colleagues from the conservation and restoration department that she coordinates, Cornelia Rotariu, Tudor Tomescu and Radu Cordoș. The pharmaceutical collection is generally in a good

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<sup>1</sup> Coordinator dr Jakub Węglorz, supported by the Polish National Science Centre [funding number: 2017/26/E/HS3/00452].

state of preservation, and except for a few cases of actual restoration (broken containers), the interventions were focused on the cleaning and consolidation of the patrimony goods. Ioana Cova has performed most of the interventions, focused on the cleaning and straightening of manuscript books, recipes, pharmaceutical diplomas on paper and parchment, and 20<sup>th</sup>-century financial records of pharmacies (Fig. 6).

**Visiting pharmacy museums** and collections and networking with peers and specialists abroad is another objective that has been reached in 2022 ([activity 2.5](#)). In September 2022 Dr. Ana-Maria Gruia has visited the history of pharmacy collection of the *Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci* in Milan, with a special guided tour by Mrs. Simona Casonato and her colleagues. Most of the artifacts in this collection were obtained from the antiquities market, thus their original contexts of use remain unknown, but the small display is very beautiful and evocative. In 2016 all items were conserved/restored. During the same month, Dr. Gruia has also visited the *History Museum of the Ospedale Maggiore*, with a collection of pharmaceutical and medical items from the hospital of Milan founded in the 15<sup>th</sup> century, including an impressive archive (Fig. 7), and the *Civico Museo di Storia Naturale*. The latter contains a new exhibition of minerals (some of which were also used in the making of medicines), as well as the old but scientifically very interesting display of fossils and natural specimens that were also in the attention of pharmacists throughout history. During the congress in Milan Dr. Gruia has also met several international specialists in the history of medicine, some of which will allow for the development of future collaborations (with the association of pharmacy museums from the German-speaking areas and the team of the research project in Poland mentioned above).

Team members have put much effort into the elaboration of several **research papers**, more than initially estimated ([activity 2.4](#)). One of the articles has been completed in 2021 but was printed in the very end of the year: Ana-Maria Gruia, “Engel Pharmacy “La Coróna”, near the gate of the royal court, Jassy”, in *Studia UBB – Historia*, vol. 66, 2/2021, p. 45-76 (doi:10.24193/subbhist.2021.2.03). Another article has been published in the periodical of the National Museum of Transylvanian History in Cluj (Erih Plus and CEEOL): Ioana Gruia, “Handbook for Medicine by Iosif Țiucra, a Teacher. A 19<sup>th</sup>-century Manuscript in the History of Pharmacy Collection (MNIT)”, in *Acta Musei Napocensis II Historica*, 59/II/2022 (under print). Three more articles are partially written: Maria Pakucs, “‘They Steal It from the Sultan's Pharmacy.’ Transylvanian imports of drugs and chemicals from the Ottoman Empire in the early

modern period” and Ioana Gruia, ”Libro di me, Gio Batta Gussetti” (both prepared for AMN Historica 60/II/2023). Another article, written in 2021, has been translated into Hungarian, edited, and will be published in 2023: Ana-Maria Gruia, ”A bezoárkőtől a kőrisbogáron át a szarvasagancsig. Állati eredetű gyógyszerek a kolozsvári Gyógyszerészettörténeti Gyűjtemény állományában” [From bezoar and cantaridae to deer antler. Medicines of animal origin in the History of Pharmacy Collection in Cluj-Napoca], in R. Offner, Zs. Bogdándi (eds), Egészség, betegség és gyógyítás a régi Kolozsvárott (Kolozsvár egészségügytörténete a 19. század végéig). Kolozsvár 2023. The most significant article, to be submitted in 2023 to an ISH periodical to be subsequently selected, will be the collective work of most of the project team members and collaborators, focusing on the 18<sup>th</sup>-century medicine chest and integrating the results and interpretations of the all investigations and chemical analyses performed so far. It is in the stage of a preliminary sketch.

Team members have also performed research for and delivered three conference presentations (activity 2.3). Dr. Ana-Maria Gruia has delivered the presentation entitled “Pharmatrans – a Transylvanian exploratory research project” at the 45th International Congress for the History of Pharmacy organized in Milan by the International Society for the History of Pharmacy, 7-10 September 2022. At the invitation of the Polish colleagues encountered in Milan, she will also deliver an online presentation entitled ”Museum Reconstructions of Pharmacy Interiors” during the scientific workshop entitled ‘Historical reconstruction as a research tool’, organized by the Institute of History, of the Wrocław University, in 10-11 December 2022. Ioana Cova has delivered the presentation *Aspecte privind conservarea Colecției de Istorie a Farmaciei din Cluj* [On the conservation of the History of Pharmacy Collection in Cluj] during the works of the Bucovina - File de Istorie Symposium (the XXIVth edition), in the conservation and restoration panel. The symposium was organized by Muzeul Național al Bucovinei in Suceava, in partnership with Universitatea „Stefan cel Mare” - Facultatea de Istorie și Geografie, November 24-25, 2022.

The final objective was to promote the project, its activities, and its results (activity 2.2). On several occasions, especially during the congress in Milan, we have distributed visit cards promoting the project and its website that we have constantly updated. The website, available at <https://pharmatrans.mnrit.ro> in both Romanian and English, is affiliated to the official website of the National Museum of Transylvanian History in Cluj-Napoca and includes the annual scientific reports. Upon completion, the full catalogue will be available on this website in a free download

format. In 2022 we have created 44 blog posts (Romanian and English), grouped according to three categories: study visits, research, and conservation and restoration (Fig. 9). In 2022 the website has had more than 4000 visits between January and October (Fig. 10), estimating an increase to more than 5,000 visits by the end of the year. The data show an almost double number of visits as compared to 2021 and a constant interest in the project, with almost even monthly visits. The project is also presented on the official website of the National Museum of Transylvanian History, at <https://www.mnit.ro/pharmatrans/>.

On social media platforms we have posted more than 60 times (marked with hashtags such as #pharmatrans #mnit #uefiscdi and #cnacs). Most are posted on the Facebook page of the History of Pharmacy Collection (<https://www.facebook.com/colectiefarmacluj>) – 39 posts, shared on the fan page of the collection (<https://www.facebook.com/MuzeulFarmaciei>) and in several Facebook groups (from Romania: museographers, conservators, inhabitants of Cluj, history students, pharmacists; and an international group of pharmacy historians). Partial reports have also been published in the newsletter of the museum: January/July 2021,<sup>2</sup> July/December 2021,<sup>3</sup> January/June 2022,<sup>4</sup> and a material was also delivered for the July/December 2022 issue.

The promotion of the project has been completed through more than 30 posts on the personal profiles of team members on academic and social media platforms – Ana-Maria Gruia on Instagram (<https://www.instagram.com/goddessgruia/>), Ana-Maria Gruia on Facebook (<https://www.facebook.com/ana.gruia/>), Ioana Monica Gruiță on LinkedIn (<https://www.linkedin.com/in/ioana-monica-gruita-phd-1652391b/>), Ana-Maria Gruia on LinkedIn (<https://www.linkedin.com/in/ana-maria-gruia-3327a310/>), Mária Pakucs on Facebook (<https://www.facebook.com/mpakucs>).

Ana-Maria Gruia's paper entitled "Project presentation: PHARMATRANS. All Things Apothecary in 16th-20th-century Transylvania. The History of Pharmacy Collection in Cluj-Napoca. 2022" has been accepted for publication in *Acta Musei Napocensis II Historia* 59/II/2022 (ErichPlus) and is currently under print.

Throughout the second year of the project, the activities have been coordinated by project leader Dr. Ana-Maria Gruia and the audit is currently underway by an external specialist (activity

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<sup>2</sup> Available at <https://www.mnit.ro/wp-content/uploads/Newsletter-IAN-IUN-2021-6.pdf>

<sup>3</sup> Available at [https://www.mnit.ro/wp-content/uploads/Newsletter-iul-dec-2021-5-2.pdf?fbclid=IwAR1w5iOB4wcLsyhnjgsdTbiG1G2inTw6kMcFBPRL9\\_BQp36h8mmOIZrHLOM](https://www.mnit.ro/wp-content/uploads/Newsletter-iul-dec-2021-5-2.pdf?fbclid=IwAR1w5iOB4wcLsyhnjgsdTbiG1G2inTw6kMcFBPRL9_BQp36h8mmOIZrHLOM)

<sup>4</sup> Available at <https://www.mnit.ro/wp-content/uploads/Newsletter-iul-dec-2021-1.pdf>



2.1). Team members and collaborators have frequently met in person, mainly those from Cluj-Napoca, but occasionally also with Dr. Pakucs from Bucharest. We have also maintained our regular meetings and communication online (emails, zoom meetings, by phone). Dr. Gruia has completed the scientific report and has been responsible for all management activities.

Project director,  
Dr. Ana-Maria Gruia

25.11.2022



## Illustrations



Fig. 1. Lot of cut-out metal plaques for the stencil marking of pharmaceutical containers, rediscovered in the old collections (inventory number IF 2451).



Fig. 2. Identification of faded writing on the drawers of the Baroque medicine chest under UV light (inventory number IF 1903).

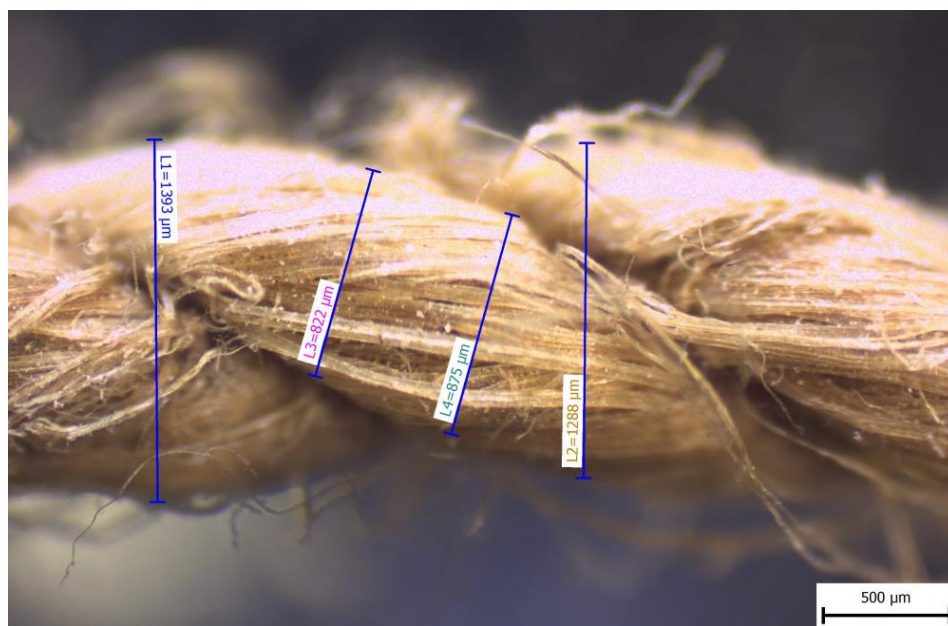


Fig. 3. Microphotograph of the structure of the thread used for securing the paper cover of a pharmaceutical container (inventory number IF 1911).



Fig. 4. XRF (X-ray fluorescence) test showing the composition of the glass of an apothecary container (inventory number IF 1948).





Fig. 5. Materia medica sample collection.

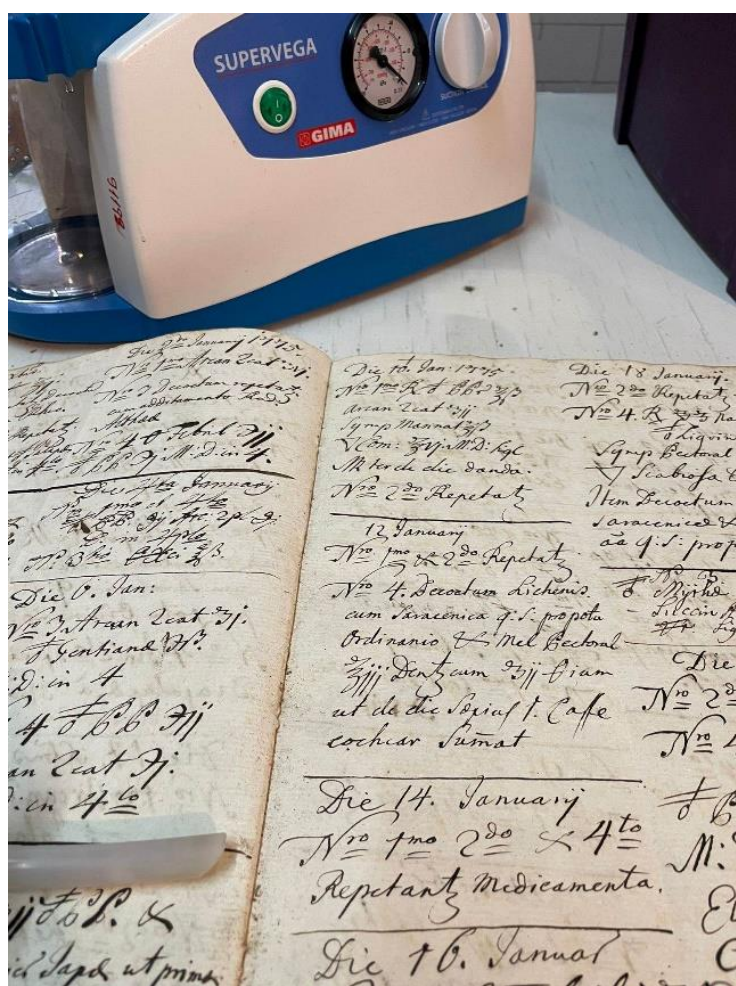


Fig. 6. Cleaning an 18<sup>th</sup>-century manuscript ledger.



Fig. 7. Archive of the Ca' Grande in Milan (preserving the administrative documents of the Ospedale Maggiore).

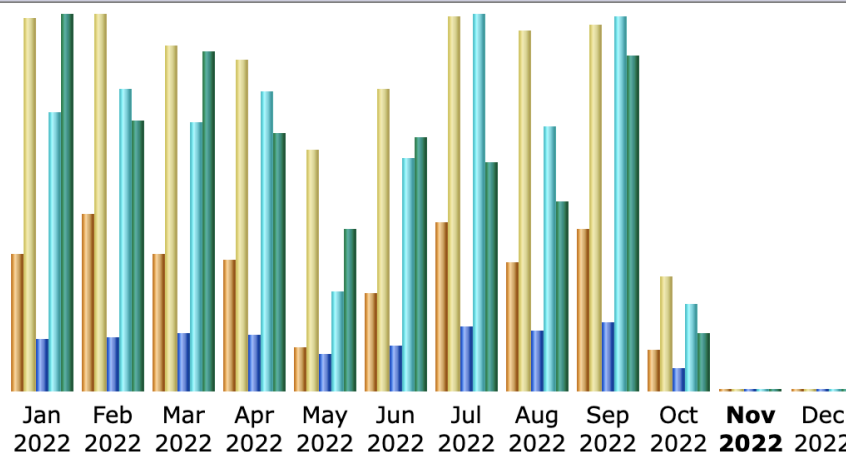


Fig. 8. Business cards distributed in Milan.



Fig. 9. Blog page of the dedicated website, affiliated to the website of the National Museum of Transylvanian History: pharmatrans.mnit.ro.

## Monthly history



Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2022	174	476	2,388	13,019	819.61 MB
Feb 2022	226	481	2,508	14,037	589.81 MB
Mar 2022	174	442	2,704	12,484	740.56 MB
Apr 2022	168	424	2,574	13,934	563.27 MB
May 2022	55	309	1,682	4,618	352.28 MB
Jun 2022	123	387	2,064	10,811	554.35 MB
Jul 2022	216	479	2,955	17,527	499.00 MB
Aug 2022	164	460	2,753	12,326	413.68 MB
Sep 2022	206	469	3,191	17,489	729.37 MB
Oct 2022	53	145	1,057	4,029	124.76 MB
<b>Nov 2022</b>	0	0	0	0	0
Dec 2022	0	0	0	0	0
<b>Total</b>	<b>1,559</b>	<b>4,072</b>	<b>23,876</b>	<b>120,274</b>	<b>5.26 GB</b>

Fig. 10. Website visits - pharmatrans.mnit.ro (as of November, 2022).