

Eva Falaschi

Pliniography: A Digital Bibliography of Pliny the Elder

1. *The Naturalis Historia and Digital Humanities: A Fundamental Partnership*

The *Naturalis Historia* has been one of the most widely used books in the history of European culture. It has been widely – and with continuity through the centuries – read, commented, quoted, and excerpted in many fields of human knowledge, including botany, medicine, zoology, agriculture, art and mineralogy. In fact, its 37 books contain a collection of information, organized by theme, on all the aspects of nature and the use of natural resources in human life. It also deals with the problem of the exploitation of nature, the relationship between man and nature and the destruction of landscapes. Its author, Pliny the Elder (23/24-79 AD), had a distinguished political and military career and is famous for his death after the eruption of Vesuvius in 79 AD, when, being the head of the Roman fleet at Misenum, he decided to set sail, in order to aid people and observe the natural phenomenon closely¹.

Containing a lot of practical and useful information on many human activities, the *Naturalis Historia* has been considered a valuable book, to be copied and transmitted to future generations. The long history of this work – it was dedicated to Princeps Titus in 77 AD – and its great influence on European culture has produced a huge quantity of commentaries and scholarship throughout the centuries. At the same time, the length of the work (37 books) and its varied content makes the *Naturalis Historia* a difficult work to study, given that it requires expertise not just in Latin literature, but also in many technical fields such as medicine, botany, zoology, mineralogy, agriculture, geography, history and art. These aspects have always represented the richness and importance of the *Naturalis Historia* for European society, but also its limited possibility, for a single scholar, to approach it.

For these reasons, digital humanities represent a powerful tool to improve our capability to understand this work and its cultural legacy and to manage the large amount of data and knowledge that this book contains and has produced through the centuries. The project [OltrePlinio / Beyond Pliny](#), developed at the Scuola Normale Superiore of Pisa [Adornato et al. 2018]², has been addressing these issues since 2014, by developing digital

¹ Pliny the Younger, *Epistles* 6.16 and 6.20.

² *OltrePlinio* started as a seed project at the Laboratorio di Documentazione Storico Artistica of the Scuola Normale Superiore in Pisa and became a PRIN 2012 research project (*Beyond Pliny. Reception and transmission of art theories, artists' canons, technical and artistic lexicon, between the Late Classical Period and the Roman Imperial Age. A multidisciplinary approach to the Naturalis Historia, Books 33-36*; PRIN-MIUR Fund, Research Project of National Interest, Italian Ministry of Education, Universities and Research). It is now supported by the Laboratorio di Storia Archeologia Epigrafia e Tradizione dell'Antico at the Scuola Normale Superiore.

tools that help the academic community as well as a wider public of non-specialists to study and become familiar with Pliny's work. This paper presents the tool *Pliniography*, a bibliographical database on Pliny the Elder and the *Naturalis Historia*.

2. *Pliniography: A Simple Idea, a Huge Impact*

To build a house you must begin from the foundations. Following this idea, the first steps of the project *OltrePlinio* were to design a tool that would put as many scholars as possible in the position of studying Pliny the Elder and his *Naturalis Historia* with a certain ease. Due to its long tradition and variety of contents, the first problem – and probably one of the biggest – that a scholar of Pliny or of any Pliny-related field faces is to find out the previous bibliography on a specific topic. The *Naturalis Historia* is quoted and discussed not only in the wide bibliography on this work itself, but also in the scholarship of the many technical fields it deals with. Moreover, owing to its legacy, it is considered in the studies dedicated to the Greek and Roman world as well as in those relating to the subsequent phases of European history and culture. This makes it almost impossible for scholars to find out all the references, and, for those who are not Pliny specialists, sometimes even the main ones.

To address the problem, during the 19th and the 20th century collections of biographical references on Pliny the Elder were published [Von Jan 1848; Urlichs 1858; Detlefsen 1858; Detlefsen 1869; Urlichs 1876, 1877, 1878; Krohn 1931; Hanslik 1941; Le Bonniec 1946; Hanslik 1955 and 1964; Schoder 1968; Sallmann 1975; Römer 1978; Schoder 1982; Cova 1986; Serbat 1986; De Nonno et al. 1991]. The long list of these contributions shows the huge effort made by scholars, but also the great necessity they felt, faced with such a wide bibliography, to have reference tools to find it. Considering that all these lists were compiled by hand, it was a very valuable work. However, they are numerous and cover different periods and parts of bibliography; they also contain mistakes and, in some cases, are not easy to find. Moreover, sometimes they take up a lot of time to consult: lists on paper are not practical when they are numerous and have an old layout which does not correspond to current editorial standards; in addition, the biographical references they include are often unclear or incomplete, and indicate just a part of a title or of the name of a journal. Above all, these lists do not cover the last three decades of scholarship, in which the studies have been very fervid and have followed new paths, especially in understanding the *Naturalis Historia* in its context of creation as well as in investigating its legacy. Therefore, an updated, complete, and accurate tool on Plinian bibliography is strongly demanded.

[Pliniography](#)³ has been designed to offer a searchable bibliographic database on Pliny the Elder, which includes the bibliography in as many languages as possible, not just in

³ *Pliniography* (DOI: 10.25429/sns.it/lettere/oltreplinio0001) was designed by Gianfranco Adornato, Eva Falaschi and Alessandro Poggio, and developed by Net7. Since it is online (February 2021), it has been edited by Eva Falaschi and Alessandro Poggio, with the collaboration of Maria Ida Gulletta and some MA

English, Italian, French, German, and Spanish. The team is already working on the Plinian Dutch bibliography and on a first collection of Serbian and Croatian bibliography, hoping to enlarge to contributions in other languages thanks to the collaboration with universities. The database is not just a collection of biographical titles. Each contribution corresponds to a record in English (Figures 1-2) which contains the complete biographical reference, a description of the content and tags. The latter indicate the main topics and the passages of the *Naturalis Historia* discussed in the contribution. Reviews, translations and new editions of the contribution are also included. Links to online resources, when available, are added, as well as links to other related records (for example, the record on a book chapter includes a link to the record of the related book). The record is introduced by a label which indicates its typology (*Edition / Translation, Volume, Article Volume* (that is, book chapter), *Article Journal* (that is, article published in a journal), *Dissertation, Website*): the system, in fact, aims at also including dissertations and scientific websites, in order to focus attention on new research, works that were not published or have not yet been published and the development of digital tools to know and study Pliny-related subjects.

The layout of records was purposely developed to distinguish it from those usually used in Digital Libraries, such as library catalogues. While continuing to follow the logical order of biographical references, the layout is designed to meet the visual structures of the web rather than reproduce the layout of a printed page. This assists in finding a new aesthetics that corresponds better to current cognition processes and makes the record more user-friendly for new generations, without losing clearness and scientific substance in reporting the information. In fact, the organization of the biographical data in boxes which are placed next to each other or occupy different lines allows us to indicate levels of information and provide the user a guide in the reading, which must proceed, according to the Western standard, from top to bottom, left to right.

The publication of records in the database works in the same way as common scientific publications. Records are entrusted to advanced students and scholars based on their research interests and expertise: they are indicated as the authors of the records at the bottom of the latter. The editorial board oversees the editing of the records and their coherence, especially with respect to the use of the tags. Drafts circulate twice and there is also a final proofreading by an English native speaker.

The database allows you to carry out a free search by entering keywords in the search bar (Figure 3). The tags and the searchable structure of the records guarantee the possibility to search by keyword through the entire biographical database. The search, in fact, is not limited to the author and title, but includes all the fields of a record. The results can also be ordered by date and can be refined through filters (*Authors, Editors, Tags, Sections, Language*; Figure 4), in order to build personalized paths. This structure makes this tool very powerful in the possibility to find the bibliography on a single topic or passage.

and PhD students of the Scuola Normale Superiore (Tommaso Brusasca, Sofia Casini, Francesca D'Andrea, Alessia Di Santi).

The filters have been selected not only to facilitate the bibliographical research on a topic (for example, the *Tags* filter) but also to promote the investigation into the history of Plinian studies. In fact, although the *Naturalis Historia* has been read and studied throughout its two-thousand-years history, different interests have been arisen in different centuries and places, according to the necessities and the issues of each time and culture. Therefore, filters such as *Authors* or *Language*, combined with the possibility to order the results chronologically, allow users to focus on the contributions of an individual scholar or on the approaches and interests in Pliny's *Naturalis Historia* in a certain linguistic area. Moreover, the *Sections* filter offers the possibility to select the main contribution on a Plinian subject and is mainly addressed to students or beginners in Pliny studies. In fact, it divides the entered contributions into three categories: *Pliny*, *Beyond Pliny* and *Editions*. *Pliny* includes the contributions which focus on Pliny the Elder and the *Naturalis Historia*. *Beyond Pliny* comprises the bibliography on the reception of Pliny and its later tradition as well as the contributions on Plinian-related topics: for example, it includes books on ancient Greek painting where the *Naturalis Historia* is quoted and discussed. *Editions* selects the critical editions and translations of the text. In this way, looking for the bibliography on sculptor Pheidias, the beginner user can be helped by this filter to divide the bibliography on the presence of Pheidias in the *Naturalis Historia* (*Pliny*) from that on Pheidias in general or on the presence of Pheidias in the reception of the *Naturalis Historia* (*Beyond Pliny*).

A further instrument is offered to students and beginners: the page *Selected Bibliography* selects from the entire database the contributions which can be useful for people at the beginning of their studies on Pliny or for those who need overviews and an introduction to Pliny-related topics (Figure 3).

Pliniography adapts the concept of an online library catalogue to a virtual library focused on a single subject, Pliny the Elder's *Naturalis Historia*. It is based on the [Muruca framework](#), which allows Digital Humanities researchers and research teams to create, curate and share their own Digital Editions [Aiola et al. 2021], by using open source software systems such as WordPress, Solr and Fedora. [Solr](#) provides the search engine, while [Fedora](#) is a flexible repository platform with native linked data capabilities for the management and dissemination of digital content.

However, *Pliniography* is different in its aims, structure and possibilities of search from library catalogues or similar tools applied to Greek and Roman antiquity. In fact, library catalogues cover many disciplines and only in a few cases do their records also include a description of content and tags. At the same time, tools such as the [Année Philologique](#) focus on a macro-research area (in the case of the *Année Philologique*, Ancient Greek and Roman civilization) and include a large amount of varied bibliography as well as requiring a paid subscription. Therefore, these tools serve very efficiently different aims from that of *Pliniography*, which focusses on a single subject (Pliny and the *Naturalis Historia*), allowing users to study it in-depth with the guarantee that a team of Plinian scholars have already read, selected, described and tagged the contributions entered in the database. Moreover, open access ensures availability to a wider public of students,

schoolteachers and enthusiastic people who wish to discover or teach Pliny's legacy on nature.

3. Conclusions. Pliniography, A Mission for the Future

Pliniography is designed to widen the community of people working on Pliny the Elder's *Naturalis Historia*, by offering a tool that allows users to drastically cut the times of searching for the bibliography on a specific Plinian topic.

Considering the wide range of subjects included in the *Naturalis Historia* and the difficulties encountered so far in studying it, this tool represents the first step to revive the debate on the *Naturalis Historia* in the bi-millennial of the birth of Pliny the Elder, which will fall in 2023 and will see the organization of various scientific and outreach activities by *OltrePlinio*. The importance of this debate has its roots in past, present and future society: the *Naturalis Historia* represents not only one of the cornerstones of European culture but also a very topical reading in contemporary society, which is addressing the issue of its relationship with nature and the exploitation of this latter.

A digital tool such as *Pliniography* aids in the dissemination, at various levels, of the knowledge on Pliny the Elder and a quick acquisition of the *status quaestionis* from which to start developing future research. It can also be a model for the study of other authors – not only those belonging to the Greek and Roman civilizations – whose legacy and bibliography is as wide as that of Pliny the Elder.

Works Cited

[Adornato et al. 2018] Adornato, G., E. Falaschi, A. Poggio, G. Benotto, R. Zitarosa, “OltrePlinio: progetto interdisciplinare sulla *Naturalis Historia* tra antico e moderno”. In F. Conte (ed.), *Le risorse digitali per la storia dell'arte moderna in Italia. Progetti, ricerca scientifica e territorio*, Roma (2018), 123-136.

[Aiola et al. 2021] Aiola, C., G. Andreini, F. Di Donato, T. Lombardo, *Sharing knowledge digitally; the Muruca case study*, provisional version of the contribution presented to the 2021 AIUCD Annual Congress. <https://aiucd2021.labcd.unipi.it/wp-content/uploads/2021/01/a046.pdf>. Accessed March 21, 2022.

[Cova 1986] Cova, P. V. “La lingua di Plinio il Vecchio: studi e problemi”, *Bollettino di Studi Latini*, 16 (1986): 47-54.

[Detlefsen 1858] Detlefsen, D. “45. Zur Litteratur des ältern Plinius”, *Jahrbücher für Classische Philologie*, 77 (1858): 653-671.

[**Detlefsen 1869**] Detlefsen, D. "II. Jahrsberichte. 38. Die Naturalis Historia des Plinius", *Philologus*, 28 (1869): 284-337.

[**Hanslik 1941**] Hanslik, R. "Plinius der Ältere. Bericht über das Schriftum der Jahre 1928-38", *Jahresbericht über die Fortschritte der klassischen Altertumswissenschaft (Jahresbericht de Bursian)*, 273 (1941): 1-44.

[**Hanslik 1955**] Hanslik, R. "Der Forschungsbericht. Plinius der Ältere", *Anzeiger für die Altertumswissenschaft*, 8 (1955): coll. 193-218.

[**Hanslik 1964**] Hanslik, R. "Der Forschungsbericht. Plinius der Ältere. II Bericht", *Anzeiger für die Altertumswissenschaft*, 17 (1964): coll. 65-80.

[**Krohn 1931**] Krohn, F. "Bericht über die Literatur zum älteren Plinius (1920-1927)", *Jahresbericht über die Fortschritte der klassischen Altertumswissenschaft (Jahresbericht de Bursian)*, 231 (1931): 123-144.

[**Le Bonniec 1946**] Le Bonniec, H. *Bibliographie de l'Histoire Naturelle de Pline l'Ancien*, Paris (1946).

[**De Nonno et al. 1991**] De Nonno, M., P. De Paolis, C. Di Giovine, "Bibliografia della letteratura latina: Plinio il Vecchio". In G. Cavallo, P. Fedeli, A. Giardina (eds), *Lo spazio letterario di Roma antica*, vol. V: *Cronologia e bibliografia della letteratura latina*, Roma (1991), 436-439.

[**Römer 1978**] Römer, F. "Der Forschungsbericht. Plinius der Ältere. III Bericht", *Anzeiger für die Altertumswissenschaft* 31 (1978): coll. 129-206.

[**Sallmann 1975**] Sallmann, K. "Plinius der Ältere 1938-1970", *Lustrum* 18 (1975): 5-299 and 345-352.

[**Schoder 1968**] Schoder, R.V., "Supplementary bibliography 1897-1966". In *The Elder Pliny's chapters on the history of art*, translated by K. Jex-Blake, with commentary and historical introduction by E. Sellers, and additional notes contributed by H.L. Ulrichs, Preface to the first American edition and select bibliography 1896-1966 by R.V. Schoder, Chicago (1968), L-Y.

[**Schoder 1982**] Schoder, R.V. "Further bibliography 1960-1975". In *The Elder Pliny's chapters on the history of art*, translated by K. Jex-Blake, with commentary and historical introduction by E. Sellers, and additional notes contributed by H.L. Ulrichs. Prefaces to the first and second American editions and select bibliography by R.V. Schoder, Chicago (1982).

[**Serbat 1986**] Serbat, G. “Pline l’Ancien. Etat présent des études sur sa vie, son oeuvre et son influence”. In W. Haase (ed.), *Aufstieg und Niedergang der römischen Welt*, vol. II.32.4: *Sprache und Literatur – Literatur der julisch-claudischen und der flavischen Zeit*, Berlin – New York (1986), 2069-2200.

[**Urlichs 1858**] Urlichs, L. “45. Zur Litteratur des ältern Plinius”, *Jahrbücher für classische Philologie*, 77 (1858): 481-493.

[**Urlichs 1876**] Urlichs, L. “Jahresbericht über Plinius den älteren”, *Jahresbericht über die Fortschritte der klassischen Altertumswissenschaft (Jahresbericht de Bursian)*, 6 (1876): 109-127.

[**Urlichs 1877**] Urlichs, L. “Jahresbericht über Plinius den älteren”, *Jahresbericht über die Fortschritte der klassischen Altertumswissenschaft (Jahresbericht de Bursian)*, 10 (1877): 35-49.

[**Urlichs 1878**] Urlichs, L. “Jahresbericht über Plinius den älteren”, *Jahresbericht über die Fortschritte der klassischen Altertumswissenschaft (Jahresbericht de Bursian)*, 14 (1878): 267-286.

[**Von Jan 1848**] von Jan, L. “Jahresbericht über die spätere römische Prosa”, *Philologus*, 3 (1848): 302-303.

ARTICLE VOLUME	
Dorandi, Tiziano	
TITLE Antigono di Caristo artista e scrittore d'arte	YEAR 2019
EDITORS Adornato, Gianfranco; Falaschi, Eva; Poggio, Alessandro	VOLUME TITLE Adornato, Gianfranco (ed.); Falaschi, Eva (ed.); Poggio, Alessandro (ed.) - Περὶ γραφικῆς. Pittori, tecniche, trattati, contesti tra testimonianze e ricezione
PLACE Milano	PAGES 135-149
PUBLISHER LED - Edizioni Universitarie di Lettere Economia Diritto	SERIES Archeologia e Arte Antica
LANGUAGE Italian	TRANSLATIONS -
NEW EDITIONS -	
LINKS Go to text	
REVIEWS - E.M. Moormann, BMCR 2020.07.21.	
CONTENT This contribution focuses on the life and artistic activity of Antigonus, one of Pliny the Elder's sources on Greek art, offering a very useful overview on the studies dedicated to him. His identification with the writer Antigonus of Carystus and with the homonymous artist active at Pergamon is discussed and accepted. Plinian passages mentioning this art writer are discussed, together with other sources, in order to propose a multifaceted portrait of Antigonus as an artist, art historian and intellectual. Moreover, this paper adds new possible testimonia and fragments to the art historical activity of Antigonus, showing future perspectives of research.	SECTIONS Pliny
TAGS ANTIGONUS CARYSTIUS PARADOXOGRAPHUS DE PICTURA DE TOREUTICE 3RD CENTURY B.C. ARTISTIC LITERATURE ART CRITICISM ART TREATISES LITERARY SOURCES ON ART PLIN. NH 1.33-34 PLIN. NH 34.68 TELEPHANES SCULPTOR PLIN. NH 34.84 PLIN. NH. 35.67-68 PARRHASIOS PAINTER TURKEY PERGAMON DONARY OF ATTALOS I POLEMO HISTORICUS AGAINST ADAIOS AND ANTIGONUS AGORAKRITOS PHEIDIAS	
AUTHOR OF THIS RECORD Falaschi, Eva	

Figure 1. The layout and structure of a record (*Article Volume*).

VOLUME

Adornato, Gianfranco (ed.); Falaschi, Eva (ed.); Poggio, Alessandro (ed.)

TITLE Περί γραφικῆς. Pittori, tecniche, trattati, contesti tra testimonianze e ricezione		EDITORS Adornato, Gianfranco; Falaschi, Eva; Poggio, Alessandro
		YEAR 2019
PLACE Milano	PUBLISHER LED - Edizioni Universitarie di Lettere Economia Diritto	SERIES Archeologia e Arte Antica
LANGUAGE Italian, English	TRANSLATIONS -	
NEW EDITIONS -		
LINKS Go to text		
REVIEWS - E.M. Moormann, BMCR 2020.07.21.		
CONTENT <p>This collection of contributions focuses on ancient painting between the Classical and Hellenistic age and its later reception, especially in the Imperial age, which, thanks to the cultural and material appropriation of Greek art, offers important information on the painting of that period. Recalling in the title the ancient Greek books on painting (Περί γραφικῆς), this volume takes into consideration the extraordinary research, both theoretical and practical, conducted by artists and intellectuals, and its impact on the following centuries. Contributions includes interdisciplinary studies on artistic literature and its receptions (Duris of Samos, Antigonos, Pliny the Elder), philosophical theories of colours (Plato), archaeological contexts (Macedonian painting, Paestan funerary painting, Thracian funerary painting, Vesuvian landscape painting, Alexander mosaic and its models), reception of art (Plutarch of Chaeroneia). Without claiming to be exhaustive but rather offering a series of case studies, the volume intends to encourage the application of an interdisciplinary approach to ancient art, where material evidence, archaeometry, literary and philosophical sources, reception studies are all considered on the same level, contributing to reconstruct the artistic phenomena of the ancient world and to consider them as part of the social, cultural and intellectual context.</p>		SECTIONS Beyond Pliny
TAGS GREEK PAINTING 4TH CENTURY B.C. INTERDISCIPLINARY APPROACH MACEDONIAN PAINTING PAESTAN FUNERARY PAINTING THRACIAN FUNERARY PAINTING VESUVIAN PAINTING COLOURS PLATO PIGMENTS ARCHAEOMETRY ARTISTIC TECHNIQUES GREEK ART HISTORY ART TREATISES ART THEORIES DURIS HISTORICUS ANTIGONUS CARYSTIUS PARADOXOGRAPHUS ALEXANDER MOSAIC LANDSCAPE PAINTING IMPERIAL AGE MAPPING PLINY QUANTITATIVE APPROACH PLUTARCHUS BIOGRAPHUS ET PHILOSOPHUS RECEPTION OF ART		
AUTHOR OF THIS RECORD Falaschi, Eva		

Figure 2. The layout and structure of a record (*Volume*).

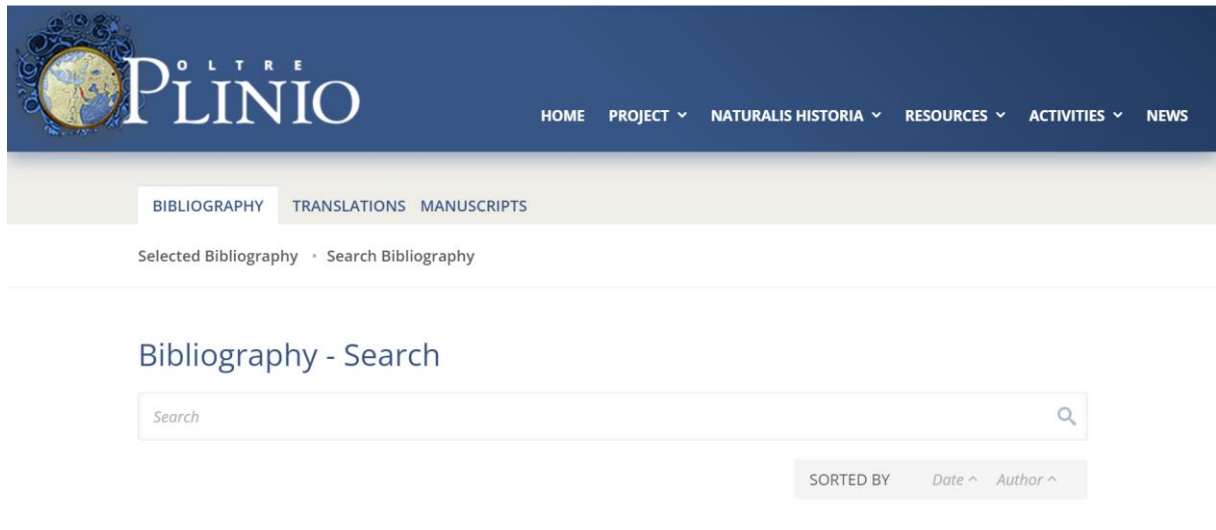


Figure 3. The search bar and the menu to access Selected Bibliography

SORTED BY Date ^ Author ^

Refine your results

Authors

André, Jacques 10

Bert, Mathilde 10

Reeve, Michael D. 9

Walter, Hermann 7

Alfonsi, Luigi 6

Editors

Maraglino, Vanna 17

Adornato, Gianfranco 16

Poggio, Alessandro 16

Falaschi, Eva 14

Tags

Manuscripts Of NH 59

Middle Ages 56

Renaissance 47

Italian Circulation 36

Reception Of NH 36

Sections

Beyond Pliny 104

Pliny 42

Editions 3

Language

Italian 67

English 39

French 21

German 15

Latin, French 2

Abramson, Herbert

The Olympieion in Athens, Sulla, and the Capitolium in Rome
1974 - AMERICAN JOURNAL OF ARCHAEOLOGY

Adolphi, Christ M.

Zoster Plinii
1754 - ACTA PHYSICO-MEDICA ACADEMIAE CAESAREAE LEOPOLDINO-CAROLINAE NATURAE CURIOSORUM

Abaecherli Boyce, Aline

Salus and Valetudo
1959 - JOURNAL OF THE HISTORY OF MEDICINE AND ALLIED SCIENCES

Ábel, Jenő

Plinius Naturalis Historiájához
1881 - EGYETEMES PHILOLOGIAI KÖZLÖNY

Alföldi, Andreas

Timaios' Bericht über die Anfänge der Geldprägung in Rom
1961 - MITTEILUNGEN DES DEUTSCHEN ARCHÄOLOGISCHEN INSTITUTS, RÖMISCHE ABTEILUNG

Albertini, Alberto

Tridentini raeticum oppidum. Tridentum da centro retico a città romana
1978 - ATTI DELLA ACCADEMIA ROVERETANA DEGLI AGIATI.

Ahn, Karl

Ueber die Plinianische Stelle: Von der ältesten Zeiteintheilung der Römer
1859

Alfisi, Emanuela

Le fonti dei censimenti romani in Plutarco e in Plinio
1974-75 - ATTI: CENTRO STUDI E DOCUMENTAZIONE SULL'ITALIA ROMANA

Figure 4. The filters to refine the search.