

# PRAGRIS – Praetorium Agrippinae Roman Information System

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**Abstract.** During the last 60 years, numerous excavations took place to unearth the Roman castellum of Praetorium Agrippinae, lying under the small Dutch town of Valkenburg. Hundreds of thousands of finds and about a thousand field drawings and other documents witness the efforts Dutch archaeologists put in this interesting object. Two years ago a re-examination of the material started and currently five large excavations are digitally documented. The information is accessible through the web-site [www.pragris.com](http://www.pragris.com)

## 1. Introduction

The Pragris project started in 2002, as a result of two courses 'Roman Artefacts', part of the curriculum of the study 'European Archaeology' at the University of Amsterdam. To get acquainted with the different types of artefacts from the Roman period which are frequently found at excavations in the low countries, students in the second and third year of their study are offered a course to learn the subtle differences between the different types of materials, and also to get a better understanding of the importance of a good archaeological administration.

Often the diversity of the material from recent excavations is rather poor, and therefore it was decided two years ago that the courses would focus on the very rich Valkenburg material that offers a broader overview of Roman artefacts than more recent excavations.

The courses were not only focused on obtaining knowledge of the Roman artefacts, but also directed to the use of modern IT techniques like spreadsheets and databases for data recording and HTML for reporting purposes. The Pragris web site is one of the results.



Fig. 1. Praetorium Agrippinae in the Roman empire.

## 2. A Very Short History of Praetorium Agrippinae

Six different phases are being distinguished in the history of the castellum. The original castellum was built from wood and earth. Phase 1 is relatively short (from 40 to 47 AD).

The corresponding stratigraphy of this phase ends with a dark layer with traces of burnt wood. These traces are interpreted as remains of the revolt of the Chauks, led by the canninefate Gannascus. Phase 2 starts in 47 AD. There was quite a difference in lay-out between phase 1 and phase 2. Probably (part of) the infantry had been replaced with cavalry. Later investigations led to the conclusion that phases 2 and 3 cannot be distinguished, so from 1967 onwards phases 2 and 3 were combined and rebaptised as phase 2/3. Phase 2/3 is also

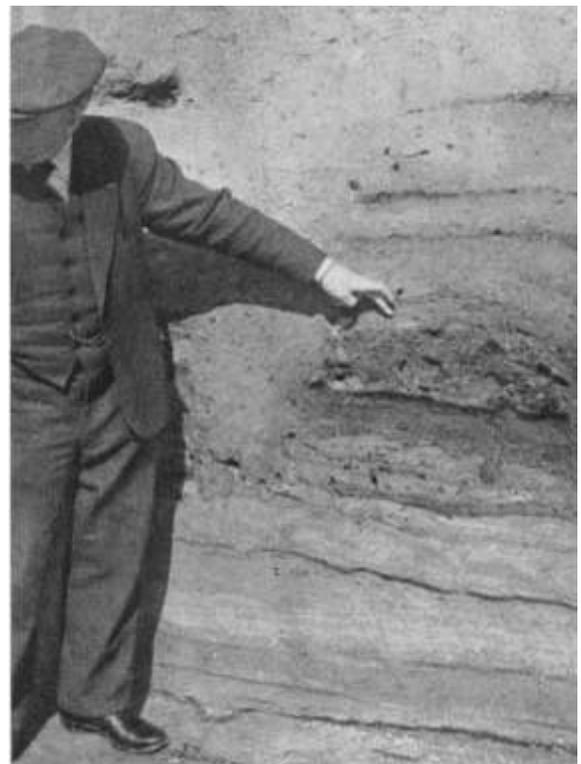


Fig. 2. Prof. Van Giffen indicating the layer above phase 2/3.

covered with a rather thick layer containing burnt wood, interpreted as the remains of the revolt of the Bataves, led by Julius Civilis, in 69 (see Fig. 2). The other phases are not directly linked to historic facts. Phase 4 ends approximately 120 AD. Because of the lack of burning traces it is assumed that there was no violence involved. The transition of phase 5 to phase 6 is assumed to be around 178 AD. Also the end of phase 6 is based on the general assumption that the Romans left the swamps of Germania Inferior around 260.

### 3. Valkenburg – the Excavations

Praetorium Agrippinae is one of the larger places in lower Germania on the famous Tabula Peutingeriana, and already in the 16th century the local people knew of the existence of Roman remains in the center of the small village of Valkenburg Z.H. The first scientific research of the area was undertaken in 1875 by the Rijksmuseum van Oudheden (Leiden), which resulted in some superficial statements about the presence of Roman foundations and continuity of habitation, but there were doubts.

During the first year of World-War II Valkenburg was severely damaged. Professor van Giffen, who already suspected that Valkenburg was a first-class site, took advantage of the situation and started a large-scale campaign in 1941 in the Roman fortresses (castella) of Praetorium Agrippinae.



**Fig. 3.** Plan of the castellum at Valkenburg, and outlines of the sites excavated 1943–1951.

The yearly campaigns often lasted several months, with a workforce of 35 people on an average. Further campaigns took place in 1962, 1967 and 1980. The total number of finds was enormous and currently over 200 large boxes contain several hundred thousands of (fragments of) objects.

### 4. Re-examining the Material

Sites VI–VIg were excavated in the period 1943–1950. These sites cover a large area of the right part of the retentura. It was expected that these sites would yield interesting material, as a

large part of the contubernia was situated here. Using the original excavation reports a selection of finds was made: only finds from below +0.80 NAP (site VI) and below +0.60 NAP (sites VIb–VIg) were taken into account, as layers above these levels too often were disturbed. This means that only phases 1 and 2/3 were investigated, corresponding with the early period of the castellum (40–69 AD).

We did not study any of the ecological material (skeletal remains of human and animal origin, wood etc.). Most metal finds from these sites (coins, military equipment) were already published (e.g. Glasbergen 1972) and some of them were not available for further study. Most iron objects were decayed to a state of unrecognisability. This selection procedure resulted in the following reanalysis scheme:

Excavation / Site	Total #	# Re-analysed
VI 7 Jul – 5 Oct 1943	426	234
VIb 3 Sept – 23 Nov 1946	173	66
VIc/d 1948	494	158
VIe 1948	98	30
VIg 22 May – 6 Oct 1950	175	81

**Table 1.** Re-examined excavations and the number of finds.

The selected finds were identified, measured and counted. The results were plotted in distribution maps. Of all interesting objects pictures were made.

### 5. The Web Site

During the second course the idea of a web site came up. A web site is an ideal medium for distributing large amounts of data to a potentially large audience against low costs. In our case, the ‘large amounts of data’ consists of:

- the individual determinations (currently about 4800)
- the digital images (a thousand)
- the field drawings (a thousand)
- the samian ware potters’ stamps (250 potters)

It was decided to use JavaScript, embedded in HTML. The use of additional tools (MySQL, PHP etc.) was not deemed necessary and regarded as an unnecessary increase of the complexity of the system. Also, output pages generated with these tools often only provide limited functionality. Macro-media Flash, and Java applets were not regarded as the proper tools for the presentation of the static images, while on the other hand increasing download times considerably. Furthermore, a number of simple basic design principles were applied, such as: no coloured backgrounds and/or texts (hard to print), consistency in screen layout, limited page lengths (user friendliness) etc. The system was first released internally (Jan 2003) and put on the Internet April 2003. Currently, version 3.0 is available, accessible through [www.pragris.com](http://www.pragris.com).

### 6. Functionality of the Pragriss System

The purpose of the Pragriss system is to enable other interested parties to access the archaeological data of Praetorium

Agrippinae. It serves mainly as a catalogue, a thesaurus of rather basic data. There are a few pages of introductory texts (divulging most of the information given above) but 99.9 % of the actual contents consists of Excel files with determinations, and digital images of drawings and finds.

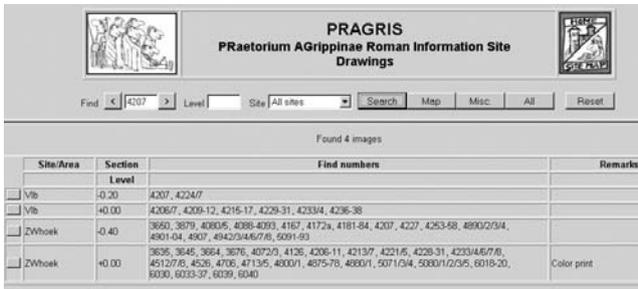


Fig. 4. Field drawings search screen. There are 4 drawings with find # 4207 available.

### 6.1 Field Drawings Data Base

During the excavations about a thousand field drawings were made. However, no proper index did exist. Simple queries like ‘on which drawings is find number X present?’ or ‘is there a drawing of level Y of site S?’ could only be answered by leafing through the original drawings. As part of the Pragrism project now all drawings have been digitised and indexed. The system offers several ways to access the drawings. First, one may enter a search term which is either a find number, level or site number (upper section of Fig. 4). The system will return a list of images (lower section of Fig. 4). The individual images can be inspected quickly by using the push buttons in the left column of the table (Fig. 5).

The second method to obtain the images of a certain site is through the site map shown in Fig. 3: clicking the site will take the user to the results screen shown in Fig. 4.

The system not only contains images of the original field drawings but also copies of schematised drawings from the publications of Van Giffen (1955), to enable comparison between the raw field data and the final published versions.

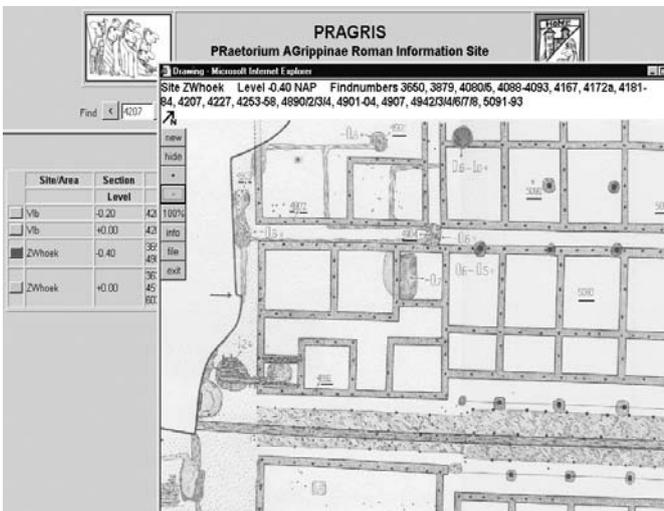


Fig. 5. Field drawings search screen. The 3rd drawing is selected. One can zoom in and out etc.

### 6.2 Images Database

The current version of Pragrism contains about a thousand digital images of objects encountered during the re-examinations.

The reason to take pictures of an object could be several: it could be an interesting object (by whatever criterion), or it looked nice, or it was metal (and probably would decay within years). All sherds with graffiti as well as all stamps were photographed, as well as all decorated samian ware (Dragendorff 29).



Fig. 6. Image album of Site Vig: Find numbers 6011–6045.

The value of a database is always a combination of its contents and its accessibility: how easy is it to find a particular image? Does the database contain images depicting X? It is highly frustrating to be forced to scan through a large amount of images one-by-one without any idea whether the search will be worthwhile. Therefore Praetorium Agrippinae offers several ways to access the images database.

#### 1. Ordered by site and find number

For each site, one or more digital image albums are available. These albums offer simple functionality: the images are ordered by find number and thumbnail pictures (72x72 pixels) are shown in the left frame with a vertical scrollbar. Clicking the thumbnail will show an enlargement (typically 576 pixels wide) (Fig. 6).



Fig. 7. Clickable field drawing with thumb nail images of the clicked find number.

2. Through Field Drawings

Hyperlinking through clickable maps is a powerful mechanism to link finds to their find spots. Fig. 7 shows a drawing of the south west area with sites VI, VIb, VIc/d and VIg, taken from Van Giffen (1955). Clicking the find number pops up the thumb nail images of the finds which, in their turn, can be enlarged.

3. Through the Images Search Engine

The images search engine uses key words. Each image has one or more key words indicating function, material, stamps, decoration and type, as and where applicable. The keywords used are the abbreviations that are also used in the detail determination records. Entering a search string will result in an output of thumb nail images and their keywords. Clicking the thumbnail image results in an enlargement.

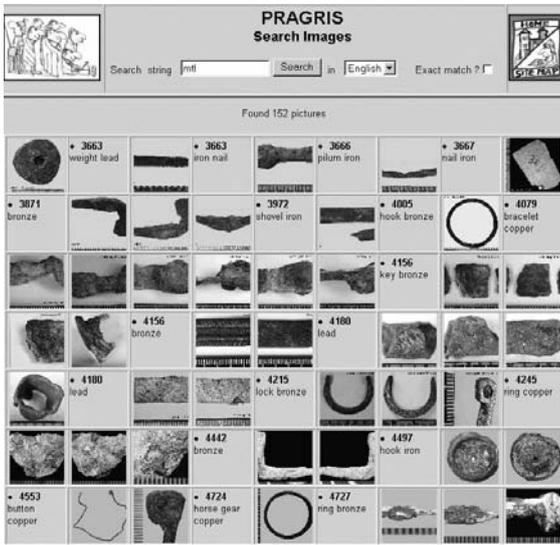


Fig. 8. Image search engine: a search for all metal items.

A nice feature is the possibility for ‘high level’ searches: one may enter ‘cop’ (per), ‘bro’ (nze) or ‘ir’(on), but it is also possible to enter ‘mtl’ to obtain all metal objects in one query. The system recognises the keywords ‘anm’ (all objects with animal decoration), ‘crm’ (all ceramics), ‘mtl’ (all metal objects), ‘uts’ (all utensils) and ‘vgt’ (all objects with vegetable decoration). The implementation is such, that it is relatively easy to enhance this feature with other high level keywords.

6.3 Determinations

The actual determinations of all the objects are available through Excel files. Apart from the determinations there are separate lists for the digital images and for the samian ware potter stamps. In Fig. 9 an example page of the determinations is shown. Each determination record is either one object, or a number of objects of the same material and function, from one find number.

Typical attributes recorded are material category, function, shape (e.g. complete, rim fragment, base fragment etc.), type, the number of fragments, diameter of rim and base, and miscellaneous comments. Denormalised information (e.g.

1	Vf	Mat	MCat	Func	FuncType	Vorm	Type	Ex	R	W	B	O	Tot	Rdm	Bdm	RT	Opm
2	SITE VI																
3	3497	aw	ts	indet	voedselgebruik	rfrag		1	1				1				D
4	3497	aw	ts	kom	voedselgebruik	rfrag		1	1				2	12			D
5	3497	aw	ts	kom	voedselgebruik	compl	Drag 27	1	1	2	1		2	12	5,5		D
6	3498	met	yzcr	boor	gereedschap	rfrag		1					1				D
7	3499	aw	gladw	knuk	opslag/transport	lfrag		1	1								V
8	3500	aw	ts	schaal	voedselgebruik	rfrag	Drag 29	1	1				1				D
9	3615	aw	ts	schaal	voedselgebruik	compl	Drag 29	1	1	1			1				V
10	3615	brn	baks	indet	voedselgebruik	rfrag		1	1				1				D
11	3615	met	koper	munt	persoonlijk	compl	RIC Caligula	1					1				P
12	3616	aw	ts	beker	voedselgebruik	rfrag	Drag 30	1	1	1			20	25			D
13	3617	aw	ts	bord	voedselgebruik	rfrag	Drag 16	1	1				2				D
14	3617	aw	ts	bord	voedselgebruik	rfrag	Drag 15/17	1	5	1			10	15			D
15	3617	aw	ts	indet	voedselgebruik	rfrag		2	2				2				D
16	3617	ns	indet	indet	indet	rfrag		1	2				1				D
17	3618	aw	gladw	indet	indet	rfrag		1	1				1				D
18	3618	aw	ts	bord	voedselgebruik	rfrag	Drag 18	1	1				1				D
19	3618	aw	ts	bord	voedselgebruik	rfrag		1	1				1				D
20	3618	aw	ts	kom	voedselgebruik	compl	Drag 37	1	1	1			1				D
21	3619	aw	ts	indet	voedselgebruik	rfrag		1	1				1				D
22	3620	aw	ts	bord	voedselgebruik	rfrag	Drag 18	1	1				18				D
23	3620	aw	ts	schaal	voedselgebruik	rfrag	Drag 29	1	1				1				D
24	3621	met	brons	munt	persoonlijk	compl	grootbrons	1					1				V
25	3621	met	brons	munt	persoonlijk	compl	middelbrons	1					1				V
26	3624	aw	ts	bord	voedselgebruik	rfrag	Drag 18	1	1				1	19			D

Fig. 9. Detail determinations.

function types like ‘military’, ‘cooking’ etc.) are automatically added to improve sorting facilities. As the determinations use Dutch codes, an NL-EN Code List Dictionary is available.

6.4 Distributions

To enable comparisons between different areas in the castellum, distribution maps have been drawn both for period 1 and for period 2/3. The distribution of different types of material (e.g. samian ware, metal, glass) and different types of function (e.g. military, cooking, eating/drinking, transport/storage) is indicated in two ways: a number indicates the number of fragments in a certain location, and the intensity of the colour is a measure for the number of fragments per square meter.

6.5 Whiteware Flagons

Hundreds of sherds of whiteware flagons were found, many of which were rim and neck fragments which can be used to determine the type of the flagon. The large amount of these finds inspired to develop a tool to automatically determine the type of such flagon sherds (Mom 2003). The input consists of six parameters and the system matches these with the data in the system.

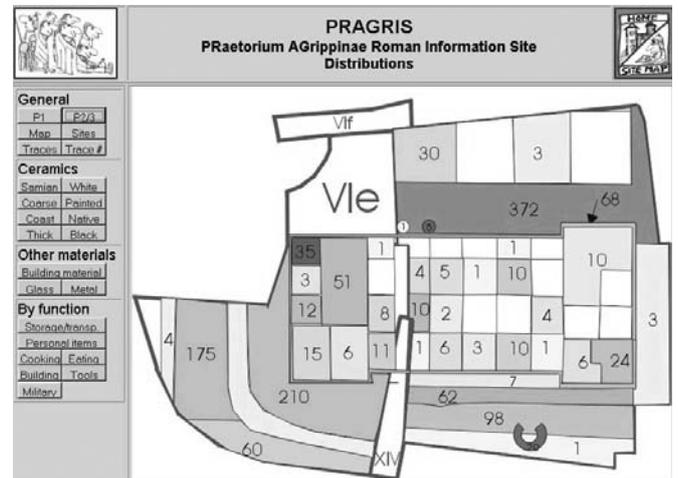


Fig. 10. Distribution map for samian ware sherds.



Fig. 11. Neck/rim fragment of a typical whiteware flagon.

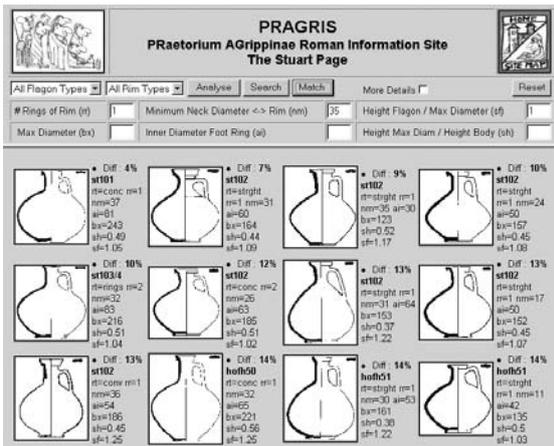


Fig. 12. Stuart typology for whiteware flagons.

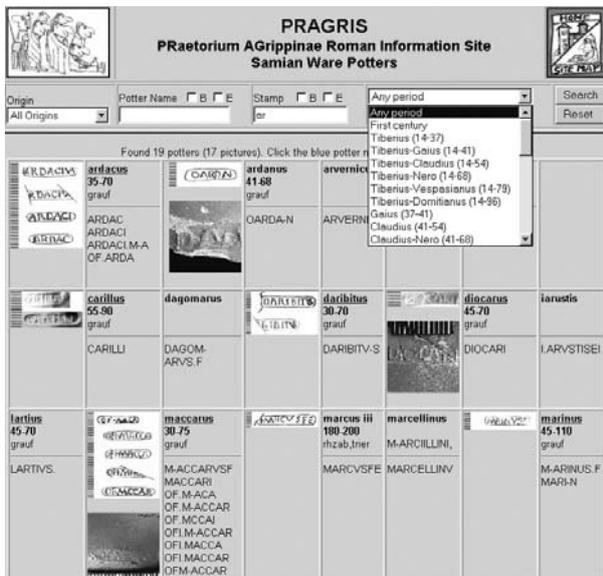


Fig. 13. Searching samian ware potters.



Fig. 14. Linking to the detailed information of potter Carillus.

### 6.6 Samian Ware Potters Stamps

Pragris contains a samian ware stamps database with all the stamps that have been found at Valkenburg.

These data are based on lists prepared in the Eighties by B. Hartley and S.M.E. van Lith but which have not been published yet (Van Lith, personal communications). The search engine enables the user to search for (parts of) stamps, potters names, places of origin and time period (e.g. Tiberian etc.)

The output of a query shows the name of the potters, the period of activity, their origin, the different stamps attributed to the potter and (if available) one or more images of the stamps.

An important enhancement in Pragris version 3.0 is the link to the PhD thesis of R. Polak (2000) which comprises an inventory of samian ware potters stamps found at Vechten (Fectio, a castellum contemporary with Praetorium Agrippinae and at a distance of 50 km). There is a large overlap of stamps found at Praetorium Agrippinae and Fectio. Fig. 13 shows (part of) the output of a query and Fig. 14 the detail information on potter Carillus.

### 7. Conclusions

Websites are powerful and cost-effective tools to distribute large amounts of data and images. Yet one has to realise that a web site is not the same as a regular archaeological publication. A web site is a dynamic entity and requires maintenance. This feature has pros and cons. It enables enhancements and error correction, preventing the site to become 'outdated'. On the other hand, the dynamic character of websites makes them difficult to refer to. There are no guarantees that a website will still exist in the future, or will not have been renamed or brought under the flag of another site. There is a large volatility involved.

Other issues are authorship and the relation between publishers and authors. 'Real' websites (like Pragris, as opposed to sites that are engines for the download of pre-formatted documents, e.g. pdf files, etc.) behave as computer

systems: subsequent versions will come into existence, each new version different from the previous one as regards both contents and technology. Tools are enhanced or replaced, bugs are solved and content is added. Authors will become 'information owners'. And the great relief that one feels having finished a publication is not a common emotion in the virtual world of the Internet.

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Figure 1 was taken from the Interactive Ancient Mediterranean website. Figures 2 and 3 were taken from Van Giffen 1955.

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