

Figure 1. The Roman Empire offered a relatively well-developed medical care to most civilians and soldiers (1).



Figure 2. 'Roman military doctors providing first aids to wounded soldiers in the battlefield' (Trajan's column, Rome) (2).

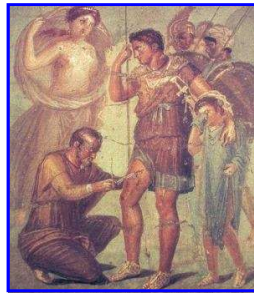


Figure 3. Surgeon Japix removing an arrowhead from Aeneas's thigh (3).



Figure 4. Medical care, and other benefits of Roman civilization, spread over the whole Empire, thanks to a system of military roads part of which were also its border or *Limes* (artist's impression, s.l.)

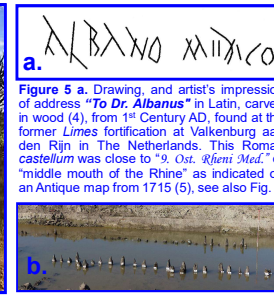


Figure 5 a. Drawing, and artist's impression of address "To Dr. Albanus" in Latin, carved in wood (4), from 1st Century AD, found at the former *Limes* fortification at Valkenburg aan den Rijn in The Netherlands. This Roman castellum was close to "9. Ost. Rheni Mod." or "middle mouth of the Rhine" as indicated on an Antique map from 1715 (5), see also Fig. 6

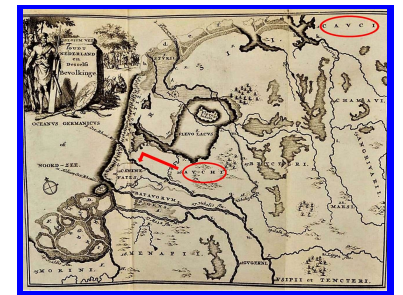


Figure 6. Antique map (5) depicting Rhine river as border of the Roman Empire, north of which Frisian tribes dwelled, among them the "Auchi". Tradition has it that after migrating west (arrow), they mixed up with Saxons after Roman times (6), and settled at Koudekerk aan den Rijn.

INTRODUCTION

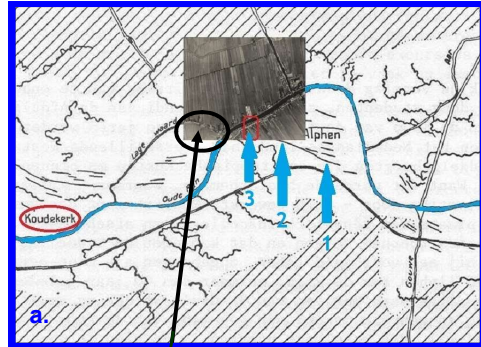
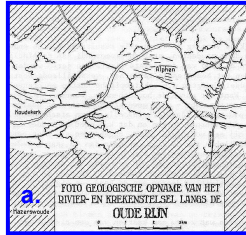
The Roman Empire - one of the greatest civilizations in history - lasted for over 1000 years providing the basis to many parts of today's Europe. The Empire also offered a relatively good health care, not only to its citizens, but also to its soldiers, as the many archeological artifacts testify. Artifacts (Fig. 5) are often found at the Empire's former border, a.k.a. the *Limes*. The northern Limes of Germania Inferior was the river Rhine, especially its south-bank which was used as a commercial road too. However, until now, not all the remains of this Limes have been found back

OBJECTIVES

Locating traces of the Roman Limes, on the Rhine's bank just downstream of the settlement *Albiniana* (now Alphen aan den Rijn), towards the village of Koudekerk aan den Rijn, to facilitate future searching for artifacts.

RESEARCH QUESTIONS, MATERIAL AND METHODS

As suggested by teacher, poet, alderman, and chair of Alphen aan den Rijn's Historical Society, Rev. A.J. Dekker in 1961, we examined to what extent Zonneveld's claim (1968) : "former Alphen's Rhine must still have flowed in Roman times ... almost straightforwardly ... from Albiniana ... to Koudekerk" (7) is confirmed by historical cartography (1737-1944), ranging from maps for surveying, landscaping, and topographic-military, to RAF-aerial cartography purposes. We took into account Van der Linden's 1982 analyses (8) of reclamations after Roman times, before 1000, but also the 2021 discovery of Roman artifacts along the Rhine's levee downstream of Koudekerk aan den Rijn.



Figures 8 a. and 8 b. Adapted after Fig. 7 a, with 1944 inlays (11), see text.

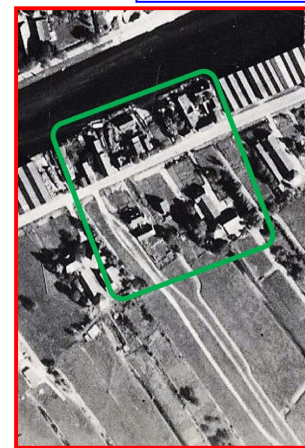


Figure 9. Details of 1944 "red frame" of Fig. 8 a, showing "Klein Raadwijk" and its environment (green frame, see also 1802 garden design, Fig. 10 b).



Figures 10 a. & b. Detailed maps of "Klein Raadwijk" area, showing its Rhine bank's dynamics over recent centuries, viz. 1737 (a.) and 1802 (b.) respectively.

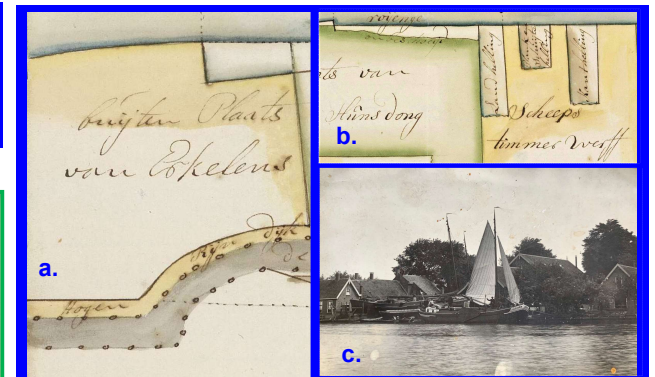


Figure 11 a. Detail of Fig. 10 a, showing an inland bend of Rhine levee *Hogen Rijn dijk*, suggestive for the presence of former mouth of the silted Rhine-arm in this area.
Figure 11 b. Detail of Fig. 10 a of the unrevetted Rhine bank & adjacent shipyard slipways on same level (1737). Such *Scheeps werfwoerd* is often seen at silting river arm (15)
Figure 11 c. Same shipyard area, some 200 years later.

RESULTS (2), AND CONCLUSION

Detail of 1944 aerial photograph (Fig. 7d) shows haughland-occupancy only slowly advancing in 100 years, starting from 1850 (Fig. 7b) (dotted arrows). Detail of "Lagewaard" meadows (Fig. 8b) (full arrows) reveal irregular, broad and square patterns, typical for reclamations in the early 10th century (14). 1737 cartography (Fig. 10a, detail Fig. 11a) shows future "Klein Raadwijk" as "buijten Plaats van Erkelens" with Rhine levee "Hogen Rijn dijk" bending inland. Garden-design in 1802 (Fig. 10b) shows the same area, with follies and fancy paths of its pleasure gardens, which are still partly recognizable in 1944 (Fig. 9). 1737 (Fig. 11b) unrevetted Rhine bank "roijenge onbeschoeid" is almost on par with "Scheeps timmer Werff" shipyard slipways (cf. (15)) as in ± 1900 (Fig. 11c).

Conclusion. Cartography suggests the location of a silted Rhine arm and its Limes road, downstream of "Klein Raadwijk" and "Langerooden", Alphen aan den Rijn.

RESULTS (1)

Starting from Zonneveld's 1968 statement, in his 1942 drawing (Fig. 7a), a HR 1944 RAFaerial photo overlay was inserted (Fig. 8a). The presumed southern arm of the River Rhine still existing in Roman times (Fig. 7a, arrows 1 & 2) appears to have flowed (Fig. 7a, arrow 3) into the Rhine-bed (indicated by a red frame in Figs. 7 a & 9) located at the area (green frame, Figs. 9 & 10b) of estate "Klein Raadwijk" and farm, known for medieval basements. In 1850 still (Figs. 7b & 7c), its haughlands downstream ('2.9') are uninhabited. Lands beyond 'Langerooden' show broad conical patterns (red arrow) suggesting their reclamation in later period.

REFERENCES

- Mau A., Kelsey F. W. (1902) Pompeii, Its Life and Art. New York, Macmillan, Public Domain.
- Talamonti G., D'Aliberti G., Cenzato M. (2020) Aulus Cornelius Celsus and the Head Injuries. *World Neurosurgery*, 133,127-134.
- Pompeii fresco "Iapyx removing an arrowhead from Aeneas' thigh", Naples National Archaeological Museum. Wikimedia Commons Attribution ShareAlike 2.0 Generic (CC BY-SA 2.0).
- Bogaers J. E. (1976) *Zweimal Valkenburg* (Prov. Zuid-Holland) I. ALBANO MIDDICO. In: J. S. Boersma et al. (Ed.) *Festoen* : opgedragen aan A.N. Zadoks - Josephus Jitta bij haar zeventigste verjaardag, Tjeenk Willink, Groningen, The Netherlands, 123-135.
- Van Royen J. (1715) *Antiquitates Belgicae* de Nederlandsche Oudheden, Amsterdam, The Netherlands.
- Eilverhi Y. A. (2010) *Germanic Piracy in Roman Britain*. Thesis Presented to the Department of Literature, Area Studies and European Languages, University of Oslo, Oslo, Norway.
- Zonneveld J. I. S. (1968) *Uitzicht op de polder*. In: F. Kroon et al. (Red.) "Het Christelijk Lyceum 1918-1968", Drukkerij en Uitgeverij Korthuis, 's-Gravenhage, The Netherlands, 31-34.
- Van der Linden H. (1982) History of the reclamation of the western fenlands and of the organization to keep them drained. In: H. de Bakker and M.W. van den Berg, *Proceedings of the symposium on peat lands below sea level*. ILRI-publication 30. International Institute for Land Reclamation and Improvement ILRI, Wageningen, The Netherlands, 42-73.
- Zonneveld J. I. S. (1983) *Op weg*. Berichten, Vakgroep Fysische Geografie, University of Utrecht, The Netherlands, 16, 3-22, permission requested.
- Topografische Militaire kaart 1850-1864, Algemeen Rijksarchief Den Haag, The Netherlands, IV, ArcGIS - TMK 1850 (zwart-wit)
- RAF aerial photograph 12 september 1944 of Alphen aan den Rijn, The Netherlands, 219_13_4201, Wageningen University WOII, 106G/2814 © Dotka Data BV.
- Bolstra M. (1737) *Figuratieve kaart van den Rhijn onder Alphen en Oudshoorn*.... 30A Kartografische documenten en technische tekeningen, NL-LNHHR, Collectie kaarten, A-2055.
- Van Laar G. (1802) *Magazijn van tuin-sieraden, of verzameling van modellen van aanleg en sieraad, voor grote en kleine lusthoven*. J. Noman & Zn., Zaltbommel, The Netherlands.
- Van der Linden H. (1998) *Het ontstaan van de dorpen in de Rijnstreek*. In: R. Leeflang (Red.), In de Rijn-vaart der Volkeren; lezingen uitgesproken ter gelegenheid van het vijftigjarig bestaan van de Historische Vereniging Alphen aan den Rijn. Stichting Koster Service Schrift, Alphen aan den Rijn, The Netherlands, 21-53.
- Landschapsbeheer Gelderland (2013) *Woorden*. <https://landschapsbeheergelderland.nl/wp-content/uploads/inspiratieboek-woorden.pdf>, "Scheepswerfwoerd" at silting river arm, 44.