

to geographical areas would have been helpful, to show more clearly the settlement density in the different landscapes. The catalogue is followed by a detailed bibliography and a list of sources (pp. 313–341). Next come four diagrams and 20 tables, followed by lists of maps and illustrations. Maps 1–3 are inserted as supplements, the particularly important “Geological map 2” being somewhat difficult to read, owing to an excess of symbols and the absence of a key. In contrast, more detail could have been given on maps 4–17, which are integrated in the volume; for example, these show only modern districts, but nowhere is there even a rough subdivision of the study area according to environmental conditions. Meanwhile, the Langmauer fortifications are not shown on map 16 and can only be found separately in figure 2.

Overall, the work contains a thorough summary of what is known about the Roman villa economy, together with some new information specific to the villas in the Trier region. For example, Seiler can prove that, because of its more fertile soils, the Bitburg region was more intensively occupied by villas than, for example, the Eifel area, with its poor soils. The presence of cultivated plant species imported from the south could also be proved by pollen and macrobotanical analyses. Since the study is mostly a reappraisal of earlier excavations, however, this type of investigation was only possible at very few locations and the work presented here opens up further possibilities for future excavations.

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SYLVIA FÜNFSCHILLING, Die römischen Gläser aus Augst und Kaiseraugst. Kommentierter Formenkatalog und ausgewählte Neufunde 1981–2010 aus Augusta Raurica. With contributions by Peter Cosyns, Florence Cattin, Patrick Degryse, Andreas Fischer, and Bernard Gratuze. *Forschungen in Augst* Volume 51. Museum Augusta Raurica, Augst 2015. € 160.00. ISBN 978-3-7151-0051-7. Two volumes with 708 pages, 644 illustrations, and 98 plates, many in colour.

This two-volume monograph is the sequel to Beat RÜTTI’s *Die römischen Gläser aus Augst und Kaiseraugst. Forsch. Augst* 13,1.2 (Augst 1991), which had presented all glass vessels found in Augusta Raurica before 1980. In the introduction (pp. 11–12), Sylvia Fünfschilling outlines the starting point and aims of her monograph (cf. also the preface by Beat Rütli, p. 9). Her main interest is to publish the glass vessels excavated between 1981 and 2010 with the exception of the material from the large cemetery “Im Sager”, which will be published by another author (cf. p. 175). Window glass, beads, bangles, and other glass objects are only of marginal interest to her (cf. pp. 207–212). The importance of the glass material from Augusta Raurica is given by the fact that, by 2010, nearly 30 000 glass fragments were recorded representing a large variety of different forms and covering – with the exception of purely Augustan contexts – the entire Roman Imperial period.

The two volumes are organised with continuous pagination as follows: “Text und Formenkatalog” (Text and Catalogue of Vessel Forms) and “Fundkatalog und Tafeln” (Catalogue of Objects and Plates). Although S. Fünfschilling bases her catalogue of vessels on the forms identified by B. Rütli, she extends this range of forms by adding new forms and new subdivisions. She also sets her own priorities; she is particularly interested in the identification of even the smallest fragments of the glass from Augusta Raurica and she focuses on the question to what extent this material can

provide information on the date of assemblages (“Fundkomplexe”). Moreover, S. Fünfschilling finds it especially important to make all archaeologists – beyond glass specialists – familiar with the scientific potential of the material category “glass”. She fulfils this intention in an exemplary manner as the first volume is organised as a very instructive manual of glass production and glass vessels in the north-western provinces of the Roman Empire.

The first major chapter is dedicated to describing the production of glass (pp. 25–35). S. Fünfschilling discusses the evidence of glass working sites in Augusta Raurica, dealing with furnaces, crucibles, tools, and production waste. Despite this extensive evidence of a local production, our knowledge of its scale is still quite poor; of the glassware described in these volumes, only square jugs of type AR 156 and small flasks of type AR 131 were supposedly manufactured locally (cf. p. 170), although some vessels of black-appearing glass likely were as well (cf. p. 221). In the following chapter (pp. 36–53), S. Fünfschilling explains the processes of manufacture, including the various techniques of casting and blowing vessels, the colours and quality of the material, and the chronological significance of these features. She is perfectly right to draw attention to the fact that modern glass can be confused with Roman glass, especially when archaeological layers of different periods are mixed (pp. 45; 49; 51; 53 fig. 43; cf. also p. 101 figs 4–5). In this context it needs to be reminded that during the second half of the 19th century some glassworks produced high-grade copies of Roman vessel forms (cf. e. g.: D. ZOBEL-KLEIN / M. J. KLEIN, Ehrenfeld and Felmer imitations of Roman glass vessels. In: D. Whitehouse, *Reflecting Antiquity. Modern Glass Inspired by Ancient Rome* [Corning 2007] 41–59; cf. also a comprehensive account by V. VARGA, *Glass and Radiance. Iridescent and Lustered Glasses from the Second Half of the Nineteenth Century to the 1910s in the Collection of the Museum of Applied Arts* [Budapest 2000], part. pp. 53–71).

An extensive chapter deals with the decoration of hot and cold glass (pp. 59–103). The chronology of cast mosaic glass from Augusta Raurica is clearer now, but still insufficient despite the large quantity of finds; it is in many cases not possible to distinguish with certainty between Early / Middle / Late Imperial fragments (pp. 59–74). On the other hand, cased glass, painted glass, and vessels decorated with applied trails, chips, and blobs are rare in Augusta Raurica in comparison to the Rhineland and northern Gaul (pp. 75–83). Cameo glass or *vasa diatreta* have not yet been found in Augusta Raurica, but there is a certain amount of vessels with high-grade facet-cut designs and figured-cut decoration (p. 87 fig. 104; p. 89 fig. 107; p. 91 fig. 110,2; p. 97 fig. 119), including some fragments in the Lynkeus style (p. 96). The presence of both facet-cut and figured-cut vessels show that the Rhineland is not very far from Augusta Raurica.

The following chapter is dedicated to the detailed discussion of several individual vessel forms and form groups (pp. 104–169). They are discussed with regard to characteristic form details, colours, technical details of manufacture, decoration, and chronology. It is interesting to note that one group of glass vessels, originating mostly from the 1st century AD, comprises forms which imitate metal forms (AR 90–AR 97; pp. 132–134). The topic of mutual imitations of vessel forms made of different materials is picked up again later in an instructive chapter (pp. 176–179) and also discussed in a new article by J.-P. LÖBBING, *Offene Glasgefäße der frühen römischen Kaiserzeit. Untersuchungen zu Vorbildern und Imitationen in der Keramik und Toreutik. Kölner Jahrb. 48, 2015, 19–42.*

S. Fünfschilling mentions that ribbed bowls AR 2.2 (pp. 263–264) were imitated by ceramic vessels of white clay and terra sigillata (p. 177 fig. 234,13; p. 178 with note 485; p. 264 with note 749). This interesting phenomenon is not only documented by two ribbed bowls from Augusta Raurica and Nijmegen, but also by a ribbed bowl and a facet-cut beaker, both of white

clay, from Cologne (cf. M. J. KLEIN [ed.], *Römische Glaskunst und Wandmalerei* [Mainz 1999], p. 11 figs 22–23).

The first volume of S. Fünfschilling's monograph also contains an article by Peter Cosyns which deals with black-appearing glass from Augusta Raurica (pp. 217–221). A total of 168 vessels with this characteristic were found there, of which small jars of type AR 104 had supposedly been manufactured locally owing to their frequency and very homogeneous chemical composition. The following contribution (pp. 222–224) on the compositional analysis of 27 glass samples (vessels, crucibles, waste, melted glass) from Augusta Raurica by F. Cattin, P. Degryse, A. Fischer, S. Fünfschilling, and B. Gratuze, did not produce any unexpected result, apart from the fact that one fragment of black-appearing glass contained a slag with very high lead levels without satisfactory explanation for its presence.

The most extensive chapter is dedicated to describing all vessel forms found in Augusta Raurica up to 2010 (pp. 260–456: "Kommentierter Formenkatalog"). This should be a very useful tool, particularly for archaeologists who deal with glass material from residential sites which often can only be recovered in a very fragmentary state. In addition to the 180 forms defined by B. Rütli (AR 1–AR 180), S. Fünfschilling defines 35 new forms (*AR 181–*AR 215) which are marked with an asterisk and include many subdivisions. Some of the new forms rely on a single fragment and others cannot be separated clearly from previous forms, as S. Fünfschilling herself admits. Nevertheless, there are very interesting vessels among the new forms. S. Fünfschilling defines *AR 201 as a jar with double-folded shoulder (pp. 382–383). Consequently, the jug form AR 166 cannot be identified in Augusta Raurica with certainty (p. 437). Particularly worth mentioning are also blown bowls with a straight handle (*AR 183; pp. 269–270). One of them documents, for the first time in Augusta Raurica, the name of Amaranthus whose workshop was supposedly situated in Burgundy (France).

S. Fünfschilling succeeds in stating the chronology of several Early Imperial vessel forms in Augusta Raurica more precisely than was possible before. She determines their beginning to have been later than suggested by B. Rütli. This chronological shift is based on S. Fünfschilling's determination that, contrary to B. Rütli's definitions, the forms AR 2.3 (shallow ribbed bowl with short ribs: pp. 265–266), AR 9.1–2 (dish / bowl with ceramic-like profile: pp. 274–275), AR 28 ("Zarte Rippenschale": p. 291), and AR 165 (amphoriskos with two handles: pp. 436–437) are not pre-Tiberian, the forms AR 37.2 (high beaker with folded base ring: p. 306) and AR 156 (square jug: pp. 427–428) not pre-Claudian, the form AR 151 (aryballos: pp. 418–420) not pre-Neronian, the forms AR 16.2 (dish with everted rim: pp. 281–282), AR 18 (dish with rounded rim and low base ring: p. 283), AR 20.2 (conical bowl with rounded rim: pp. 284–285), and AR 113 (small pot: p. 390) not pre-Flavian.

The second volume ("Fundkatalog und Tafeln") contains a selection of vessels found between 1981 and 2010 (pp. 466–544: nos 5122–6993), including a range of vessels already published by Rütli (cf. p. 465), in addition to 98 plates (pp. 545–642; all drawings done by S. Fünfschilling herself, cf. p. 9), several useful concordances (pp. 643–681), and finally five plates of forms which face five tables of chronology.

In summary, Sylvia Fünfschilling is to be congratulated on her mastery of a large and complex assemblage of vessel glass from Augusta Raurica. Her detailed analysis of this material category, edited with due care and opulently illustrated, will be an essential reference tool for all glass histo-

rians interested in the study of Roman glass vessels in the north-western provinces. This two-volume monograph will certainly also find many readers beyond glass specialists.

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HELGA SEDLMAYER, Große Thermen, Palästra, Macellum und Schola im Zentrum der Colonia Carnuntum. With contributions by Stefan Groh, Gabrielle Kremer, Elisabeth Pichler, and Ursula Schachinger. Zentraleuropäische Archäologie volume 5. Österreichisches Archäologisches Institut, Wien 2015. € 83.00. ISBN 978-3-7001-8192-7. 471 pages, 285 illustrations, 28 tables.

From the Claudian period until Late Antiquity, Carnuntum was one of the major Roman military sites on the Middle Danube. The legionary camp, the adjoining *canabae*, and the cavalry fort have been excavated since the early 20th century, while military inscriptions and militaria have been published and presented in the Museum Carnuntinum in Bad Deutsch Altenburg (W. JOBST [ed.], Carnuntum. Das Erbe Roms an der Donau. Katalog der Ausstellung des Archäologischen Museums Carnuntinum in Bad Deutsch Altenburg AMC. Kat. Niederösterreich. Landesmus. N. F. 303 [Carnuntum 1992]).

The publication reviewed here shifts the focus from the military to the civilian life of Roman Carnuntum, which had remained in the shadow of the army for a long time (W. JOBST, Provinzhauptstadt Carnuntum. Österreichs größte archäologische Landschaft [Wien 1983] 132; F. HUMER [ed.], Legionsadler und Druidenstab. Vom Legionslager zur Donaumetropole. Sonderausstellung aus Anlass des Jubiläums “2000 Jahre Carnuntum”. Textband. Kat. Niederösterreich. Landesmus. N. F. 462 [St. Pölten, Bad Deutsch Altenburg 2006] 270). It deals with the archaeological remains of a Roman *insula* situated in the heart of the Severan *colonia Carnuntum*, the former *municipium Aelium Carnuntinum*, a civilian settlement of 52 ha, about 2.2 km west of the legionary camp. The building complex covered an area of 1.4 ha and was excavated between 1932 and 1977 in the so-called Tiergarten of Petronell. Several preliminary reports labelled the site as a “Palastruine” (palace ruins), but no final report appeared until 2015, when Helga Sedlmayer, a researcher at the “Österreichisches Archäologisches Institut” (ÖAI), and her co-authors Stefan Groh, Gabrielle Kremer, Elisabeth Pichler, and Ursula Schachinger published the present study. It was funded between 2004–2008 by the Austrian “Fonds zur Förderung wissenschaftlicher Forschung” (Fund for the Promotion of Scientific Research FWF). Among the archaeological remains recovered in the excavations, they identify a large baths complex with a market building (*macellum*) and an assembly hall (*schola*), which they dub the “baths-macellum complex”.

The book consists of four main chapters: 1) history of research; 2) results of the excavations; 3) discussion of the urban and historic context; 4) reuse of the area after Late Antiquity. After a synthesis in chapter 5, an appendix (chapter 6) presents lists of abbreviations, a bibliography, and typological tables of pottery. Coins, pottery, and small finds are treated within their respective stratigraphic context. Except for the coins and sculptured stones, there are no overview chapters on the other categories of portable objects from the excavations.

In all, 22 campaigns took place on the site in 1932, 1939, 1955–1964 and 1967–1977; they were directed by Erich Swoboda until 1964 and thereafter by Herma Stiglitz. The records of these campaigns are held by the ÖAI and the University of Graz (Styria, Austria). Finds are kept in the