

M. DE VOS RAAIJMAKERS and R. ATTOUI, *RUS AFRICUM: TOME I. LE PAYSAGE RURAL ANTIQUE AUTOUR DE DOUGGA ET TÉBOURSOUK: CARTOGRAPHIE, RELEVÉS ET CHRONOLOGIE DES ÉTABLISSEMENTS* (Bibliotheca archaeologica 30). Bari: Edipuglia, 2013. Pp. 413, illus., maps, plans + CD-ROM. ISBN 9788872287033. €70.00.

M. DE VOS RAAIJMAKERS, R. ATTOUI and A. BATTISTI in collaboration with M. BOEIJEN, *RUS AFRICUM: TOME II. LE PAYSAGE RURAL ANTIQUE AUTOUR DE DOUGGA: L'AQUEDUC AÏN HAMMAM-THUGGA, CARTOGRAPHIE ET RELEVÉS* (Bibliotheca archaeologica 34). Bari: Edipuglia, 2013. Pp. 300, illus., maps, plans. ISBN 9788872287286. €70.00.

M. DE VOS RAAIJMAKERS and R. ATTOUI in collaboration with A. BATTISTI, *RUS AFRICUM: TOME III. LA VIA A KARTHAGINE THEVESTEM, SES MILLIARES ET LE RÉSEAU ROUTIER RURAL DE LA REGION DE DOUGGA ET TÉBOURSOUK* (Bibliotheca archaeologica 37). Bari: Edipuglia, 2015. Pp. 153, illus., maps, plans. ISBN 9788872287651. €50.00.

The three volumes under review represent the first full-scale publication of the results of the impressive *Rus Africum* landscape survey conducted at various intervals between 1994 and 2012 in the vicinity of the ancient towns of Thugga (modern Dougga) and Thubursicum Bure (Téboursouk) in the province of Africa Proconsularis (modern Tunisia).

Vol. I is an inventory of the 444 sites and some 151 unedited inscriptions recorded by the survey between 1994 and 2012. Vol. II is a full-scale treatment, including again maps, plans, elevations and photographs as well as geological, architectural and hydraulic analyses, of the Ain Hammam–Thugga aqueduct. The third volume brings together the results on the Roman period road network and milestones in the region of Thugga, including the great Carthage–Theveste trunk road. At least two more volumes in the series are anticipated, the fourth presumably dealing with pottery, coins and other small finds, and the fifth on the 160 sites in the vicinity of the smaller towns of Thabborra and Musti near Thugga. All of the volumes contain full, high quality maps, plans and photographs (both black-and-white and colour). There is also a CD-ROM for the first two volumes. The somewhat unusual structure, organization and sequencing of the four publications is largely the result of factors beyond the authors' control: most pertinently, the inability to secure permits to continue the survey between 2000 and 2008, denial of access to the pottery from the Ain Wassel excavations between 2008 and 2011 and, more recently, a shortfall in publication funding.

Turning to the impressive first volume, some minor concerns first. It would have been convenient if site plans had been included within the site gazetteer and not at the back of the volume. Site plans are also published at different scales with a view to fitting them on the page — which makes comparisons of buildings and other features from site to site difficult. The inclusion of some key diagnostic ceramic forms for each site would have been desirable given the broad chronological periodizations adopted. A small number of sites go unreported (apart from those promised for inclusion in Vol. V), including the important settlements of Agbia and Aunobari, and those that are undated by ceramics (295 of the 444 sites are datable on the basis of ceramic information) are missing from the table of sites precisely for this reason. And this despite the fact that some have inscriptions and architectural material which clearly belong to one or more of the nine periods established by the authors. A typology of sites is reserved for the doctoral thesis of Alessandro Battisti (see below).

Turning to the results, the rural estates of the élite families of Thugga are in close proximity to the city itself. The combination of settlement and epigraphic evidence mentioning family names suggests to this reviewer that Roman citizens with Italic names associated perhaps with the *pagus* of Thugga held lands chiefly to the immediate north and east of the city, and into the valley extending to the east as far as milestone M79 of the Carthage–Theveste road. The *civitas* community, including some of the most prominent municipal families (the Magnii, Gabinii and Remmii among others), occupied land to the west and south-west of the town, an area which also has a notable scatter of Libyo-Punic period tombs.

The imperial and large former private estates, located on the lands to the north-east, north and north-west of Thugga and to the south and west of Numluli, are dominated by small and medium-sized villa-farms and factories. Many of these sites, which included generally from one to three presses, are similar to those found in the Kasserine region. Missing, however, from Thugga

are the truly large factory farms with presses and extended animal pens such as KS 223 and 225 in Sector 1 at Kasserine. The farms immediately south of Numluli are larger than many of those associated with the imperial estates, suggesting that they may be the properties of the town's municipal élite. The smaller indigenous communities of Gliá, Thimida Bure and Thiggiba Bure appear to have originated as pre-Roman *oppida* with relatively small territories delineated in the Roman period by a tight ring of small farms immediately downslope. There is a substantial pre-Roman necropolis of dolmens (site 545) just to the south of Thimida Bure.

The chronological periodization (Prehistoric, Libyo-Punic-Berber, late Republican, early Roman, late Roman, Vandal, Byzantine, Islamic and modern) is very broad — perhaps too broad — which makes it difficult to establish with any specificity the evolution of settlement and agricultural development in the Thugga region. The early Roman period (Romaine I), for example, covers the period from Augustus to the mid-third century A.D. Although this is the period of greatest development in terms of settlement (from 24 in the late Republican to 137 in the early Roman period), most farms and villas were likely established prior to the early third century, and perhaps in two waves: the first following the foundation of the *pagus* in the Augustan period, and the second in the wake of the construction of the high quality Carthage–Theveste trunk road passing through the region under Trajan and Hadrian (see below). Indeed, epigraphic evidence from Thugga in combination with the more than four hundred inscriptions that have been recovered from rural sites points strongly to the second and early third century as the peak period of expansion and growth in the region.

The second volume is a well-documented study of the aqueduct serving Thugga, which was constructed between A.D. 184 and 187. The aqueduct provided the expanding town with good quality and perhaps much needed water, and was probably a prime factor in the decision to construct the Licinian Baths in the town centre, which are now dated to the reign of Caracalla, not to Gallienus, as previously thought. There is considerable room, on the basis of the material in this volume, for further research on the aqueduct in terms of its hydrology, architecture and comparability to other major aqueduct systems in the Empire.

Vol. III is dedicated to the section of the Carthage–Theveste trunk road which passed through the Dougga-Tébourouk region. Constructed under Trajan and Hadrian, it probably followed the alignment of a pre-existing road linking Carthage to the Dorsal and south-east Algeria. As with the study of the aqueduct, this publication is a landmark in the study of Roman roads in North Africa. In addition to the detailed recording of the road remnants, the monograph incorporates previous work on the roads by colonial period French archaeologists and explorers such as L. Carton, L. Poinssot, C. Tissot and others, as well as the documentation found in the *Atlas archéologique de la Tunisie*. Unsurprisingly, given the considerable colonial French attention to recovering Roman inscriptions, a good deal of the monograph is devoted to republishing and commentary on the many inscribed milestones recovered in the region since the nineteenth century.

Although briefly addressed by Battisti (below), future research on the relationship between the development of the road network and the growth of rural settlement and production in the Thugga region could prove rewarding, as the two are often arbitrarily divorced from one another in many survey publications. But even if a correlation cannot be clearly established on present evidence from the survey, it is safe to assume that the road and its branches (the quality of the paved stone surface and bridge construction was uniformly high) improved the ability of local producers to meet *annona* and general export demand for grain, olive oil, wine and manufactured goods outside the region, most notably to Carthage (which may have remained the primary residence of many citizen landowners in the Thugga region until the early third century) and Rome. Finally, the maintenance of the trunk road remained an important priority into the late Roman period as attested by milestones and direct evidence of repairs both within and beyond the Thugga region, with major overhauls taking place under Caracalla (the son of Septimius Severus) and perhaps Maximinus and Gordian III (also an African), though it is possible that the milestones dated to the latter emperor represent in some instances attestations of loyalty in a period of unrest in Africa more than a substantial road repair initiative.

To these three volumes should be added the doctoral thesis of Alessandro Battisti from the University of Trento (2015): *L'insediamento rurale in Africa Proconsularis, Tunisia (regione di Thugga) e Algeria (Parc National d'El Kala), in età romana e tardo-antica* (<http://eprints-phd.biblio.unitn.it/1567/>). This is an analysis and interpretation of the archaeological results of the Thugga survey and work in the Parc National d'El Kala in Algeria. The discussion, as with most survey projects, is chiefly devoted to matters of settlement, agriculture and economy, and draws

heavily on the utilization and explanation of predictive models related to settlement and production, including rank size, distribution and cluster analysis, though the conclusions yielded from this intensive data-modelling were perhaps less transformative for our understanding of the survey results than one might have hoped. In general, the methodology seemed to overwhelm the potential of the archaeological data to answer the questions posed.

Rural settlements around Thugga fall into six main types: agglomerations, towns, small farms designated as villas, factories, fortifications and uncertain concentrations of stone rubble. Production was mainly geared to grain, olive oil and wine (the last most likely associated with the rock-founded presses), though the author acknowledges that manufacturing and commercial activity were likely equally important but largely invisible through survey. Battisti suggests that grain may have predominated at least early on in the Roman period in view of its rapid return on investment for *conductores*, and that olives and vines emerged more fully with the longer lease arrangements of the later Empire. There is a thorough discussion of pressing technology recovered by the survey. Shifts in site occupation density between the early Roman through Byzantine periods are closely studied. Later Roman and Vandal period settlement is perceptibly more dense than in the Byzantine period, but the changes are not especially stark apart from the fact that production shifts increasingly to urban sites. The areas of greatest settlement concentration are associated with the territories of the large imperial estates, and secondarily around the towns of Thugga and Téboursouk.

A final word. The excellence of the Rus Africum survey work is revealing not only for what it exposes about the countryside and economy in the region of Thugga, but also for what archaeology — no matter how suggestive — cannot tell us about its political economy, among other things. Apart from the brief glimpses provided by the Ain Wassal and related inscriptions, it is painfully obvious as one reads through the fine recording of settlement that we shall never know which of the many settlements over the long Roman period were occupied by share-croppers, which by smallholders, which by tenants, and which by seasonal labourers, or how any of these groups were mobilized politically and socially by their relationships to one another, affected by their proximity (or not) to the roads and thus to market forces or even the varying quality of the lands they occupied. There is a rich human history in this landscape, reflected in its remarkably preserved archaeology, which remains all but lost to us.

All that said, we should be grateful for the valuable information that the Rus Africum survey has yielded to our growing knowledge and understanding of North Africa in the Roman Empire.

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H. DESSALES, *LE PARTAGE DE L'EAU. FONTAINES ET DISTRIBUTION HYDRAULIQUE DANS L'HABITAT URBAIN DE L'ITALIE ROMAINE* (Bibliothèque des Écoles Françaises d'Athènes et de Rome 351). Rome: École Française de Rome, 2013. Pp. xiv + 602, illus., plans. ISBN 9782728309443. €150.00.

Domestic architecture in the Vesuvian cities illustrates vividly the omnipresence of water in ancient everyday life. Yet, understanding the rich and complex material evidence related to the distribution, use and exhibition of water in urban housing is a particularly challenging task. Hélène Dessales' monograph is an important milestone towards this goal. Following a multidisciplinary approach, the author undertakes a thorough typological, functional and spatial analysis of domestic hydraulic infrastructure, seen through the prism of the tremendous progress made in the past decades in the field of the socio-cultural interpretation of the Roman *domus*.

The monograph is divided into three sections. In the first one, D. attempts a typology of domestic fountains and associated features. The second section is devoted to the archaeology of domestic water supply in Roman times, followed by a third section in which D. discusses the rôle of water as a structuring element of the architectural and socio-cultural geography of the *domus*. The author has collected a tremendous amount of data, meticulously compiled as a catalogue at the end of the monograph. 133 urban and suburban houses of Pompeii and Herculaneum equipped with basins and/or domestic fountains form the basis of the study. In the main text, D. also includes significant examples from Italy and the western provinces. The houses and their hydraulic apparatus — including associated statues and paintings — are documented down to their smallest