The control and channeling of waterworks and irrigation are among the most important of all the elements of Roman living. Earthquakes could be particularly devastating to extravagant aqueducts, which fed monumental fountains and baths in towns, and only their constant maintenance could ensure sustainable agriculture in hitherto barren regions, or prevent the formation of malarial swamps. No monumental fountains were rebuilt in later centuries, at least partly because they were in the wrong place; and only sections of ancient aqueducts were put back into use.

Water, Fertility and Ruins

Water is necessary for life, irrigation for agriculture, lifted by wheels where feasible, or conveyed along aqueducts feeding fountains. It is certain that many water-systems in our Crescent long predate the Romans – and likely that the Moslems simply refurbished many of them, as in Syria. Even though mediaeval geographers were generally well aware of the state of ancient settlements (as at Hippo), they nevertheless observed with dismay how the “conjunction of the planets” had caused fertility in some locations, but ruins and destructions elsewhere. Similarly, the majority of travellers were not alert to the tell-tale signs of waterways and irrigation until the 19th century – unless, that is, they were punctilious in their descriptions, like Seetzen. Occasionally, though, there were identifiable

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1 De Miranda 2007, 37–77 for the formation and evolution of water wheels in Syria, including Roman examples; and references in 8thC and 9thC to water-wheels at Alexandria; 84–5: they existed at Hama by the 8thC as well.
2 Hodge 1992, 346ff for facts and figures on water supply.
3 Calvet 1992, for dams in Syria: some of these may be considerably older than the Romans. The Moslems may perhaps have studied Les barrages des forts de la Strata Diocletiana (93–105) – so could this have inspired them to the great garden for Qasr al-Heir al-Gharbi (87–92)?
4 Dahmani 2005.
5 Morizot 1999: the Romans got further south than the Atlas archéologique de l’Algérie covers: Despois in 1957 had stated no signs of Roman presence in Djebel Amour – but satellite images and aerial photographs find sites, including camps and irrigated fields.
remains of a monumental fountain or nymphaeum or bath, as at Daphne, outside Antioch,iii or on the way to Mistra.iv But if these were decorated, then their beauties had often been abstracted, and they were left stripped to bare walls, as happened at Zaghouane.v Exceptional travellers did indeed notice the tell-tale signs that some barren landscapes of their day had once been prosperous – for example, Yanoski & David in the hills near Caesarea,vi the aqueducts of which were replaced by cisterns in late antiquity.6 On the other side of the balance sheet, however, Pococke came upon workmen dismantling water channels near Alexandria.vii

One element which sometimes helped travellers identify water sources and fountains was the Bible, in which for obvious reasons water often figures.viii (In Palestine, some of the water systems dated back to biblical times.)7 Hot springs could also be a give-away for Roman occupation: in the mountains near Bône the Moslems used hot-water springs which, as Poiret remarks, must have been used by the Romans because there is a villa nearby.ix But few early travellers, perhaps because they hailed from well- or too-well-watered regions, were interested in existing agriculture and how it sustained the population. If they looked beyond sites and monuments, most of them had little reason to view the landscape historically, as it were. This was decidedly not the case in the 19th and early 20th centuries, when colonisation and settlement were on the agenda, together with agricultural needs enhanced to feed large standing armies with local produce – so we should expect the French army to be alert for telltale signs of Roman water cultivation.x As an area for colonisation, the fertility of the soil in North Africa was frequently contrasted with the lack of resourcefulness of the locals, as Della Cella noted in 1817.xi Paradoxically, of course, while cultivation usually spelled death to the survival of antiquities, it was only cultivation that could bring coins and medals to light, as Waddington explained in 1853.xii

In the age of satellite imagery, however, we know that the Romans got further south in Algeria than the 19th century believed – as can be seen from traces of their fields and irrigation systems – but few of our travellers ventured that far. Later travellers noted how regions now sterile had once been fertile, both in North Africa and on the coast of Syria,xiii sometimes marked by baths,8 but also how marble and fountains were standard issue

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6 Porath 2002, 127: most houses had wells; city evacuated after the Conquest, following decline after the Persian invasion of 614–628.
7 Dierx & Garbrecht 2001, 222–239 for water supply in historical times.