

# Tsunamis and the port of Caesarea Maritima over the *longue durée*: a geoarchaeological perspective

Hendrik Dey and Beverly Goodman-Tchernov

## Introduction

The written sources for Mediterranean tsunamis in the first millennium A.D. present a notoriously garbled version of events. At times, chroniclers writing often centuries after the tsunamis they describe conflate two or more episodes into a single occurrence, while, in other instances, vague and confused references to a single event in multiple sources were interpreted as separate episodes.<sup>1</sup> Past researchers attempting to make sense of the texts were often led to make similar errors, either combining separate waves into one, or making multiple waves out of a single event dated by the historical sources to different years. More recent, critical syntheses of the historical record indicate that in the Roman and Early Byzantine periods alone tsunamis struck the coast of the Levant in A.D. 115, 306, probably 365, 502, 551, and 748/49.<sup>2</sup> But while the latest efforts at cataloguing these destructive events have begun to produce a reasonably solid consensus regarding the most significant ones, the textual sources on which such catalogues are based remain frustratingly vague. Even where the texts do consent to identify discrete tsunamis, they rarely allow any assessment of the magnitude of these events in anything but the vaguest of qualitative terms. If a more complete record of historical tsunamis is to be achieved, alternative sources of empirical data must be developed to provide a physical corollary to the textual accounts.

Written sources of the first millennium A.D. and beyond present a picture of recurring Mediterranean tsunamis capable of wiping major cities off the map. The best means of assessing the veracity of such accounts, and thus of providing a more accurate sense of the frequency of Mediterranean tsunamis and their destructive potential, lies in archaeological and geoarchaeological investigations focused on detecting and tracing the effects of damaging waves in the material record. The results of such analyses are potentially relevant both to present-day populations of the Mediterranean littoral, as well as to historical scholarship, which has recently become increasingly concerned with the impact of natural phenomena (earthquakes, plague, volcanic eruptions) on the evolution (or presumed devolution) of past civilisations.<sup>3</sup> The relative importance of 'acts of God' as agents of historical causation depends on a central methodological question, yet to be resolved: to what extent can damaging but geographically and/or chronologically localized events be identified as prime movers in the fortunes of (for example) cities and, more broadly, the political and economic structures of societies as a whole, over the *longue durée*?

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- 1 For a bleak assessment of the value of ancient literary sources for identifying and pinpointing seismic activity in Greece, see Rothaus, Reinhardt and Noller 2008.
  - 2 Russell 1985; Degg 1990; Mart and Perecman 1996; Stiros 2001; Ambraseys, Jackson and Melville 2002; Karcz 2004; Salamon *et al.* 2007.
  - 3 On the effects of the 'Justinianic plague' of the 540s, see especially Little 2006; on those of volcanic eruptions on Carolingian Europe, see McCormick, Dutton and Mayewski 2007; another eruption in A.D. 535 has been proposed to be the cause of, *inter alia*, the Justinianic plague itself (Rosen 2007).