

The landscape and economy of the territories of *Pisae* and *Volaterrae* (coastal North Etruria)

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This paper discusses the results of recent work on the *ager Pisanus* and the western part of the *Volaterranus* (the lower valleys of the Arno, Serchio, Fine and Cecina rivers). The area has been studied in an integrated fashion incorporating a geomorphological approach, by intensive survey and monitoring, stratigraphic excavations, underwater archaeology, archaeometric and other studies of artefacts, remote sensing, bioarchaeology, palaeoecology, and by documentary research.¹ Over the last 15 years intensive survey has studied four specific sectors (fig. 1): A) the area north of Pisa (*Pisae*) between it and the Serchio river and Monti d'oltre Serchio, an alluvial Holocene plain mostly formed by sand and silt deposits;² B) the area south of Pisa between it and the *Portus Pisanus*, an alluvial Holocene plain formed by clay, peat, and reclaimed deposits; part of the coastal strip is occupied by dunes of the Pleistocene; C) the area east of Pisa in the valleys of the Arno and Era, an alluvial Holocene plain mostly formed by sand and silt deposits; and D) the southern part of Pisa's territory and the western part of Volterra's in the lower valleys of the Fine and Cecina rivers, characterised by alluvial Holocene valleys and calcareous hills of the Ligurian facies. In the plains and on the lower hillslopes the soil is mainly agricultural. Most of the coastal strip is covered by Mediterranean scrub, while the highest slopes of the hills of the interior are covered by woods.

3rd c. to 1st c. B.C.

In 298 B.C. *Volaterrae* participated in a war against Rome,³ but for the rest of the 3rd c. the process of Romanization was in progress since during the Second Punic War it supplied P. Scipio with *interamenta navium et frumentum*.⁴ Pisa was a faithful ally of Rome during the Gallic invasion of 225,⁵ and as a *civitas foederata* during the Second Punic War and the wars against the Ligurians it served as a military base for land and sea expeditions,⁶ chosen for its strategic importance as a road-junction near enemy territory, for its river and sea harbours, and for its activity on sea-routes in the western Mediterranean. The harbour system, which was already important in pre-Hellenistic times, comprised a number of locations of varying importance usually sited in coastal lagoons, close to river mouths or along the major rivers; the chief ones on the ancient coastline were S. Rocchino, Isola di Migliarino (Serchio river mouth), the *Portus Pisanus*, Castiglioncello, and *Vada Volaterrana* (fig. 1).⁷

Both towns and their territories flourished during the 3rd c. due to the fertility of the soil that produced mainly grain and wine, the breeding of cattle,⁸ and commercial and manufacturing activities including shipyards,⁹ quarrying of stone,¹⁰ and the production of pottery¹¹ and of

- 1 Pasquinucci and Menchelli 1995; Mazzanti (ed.) 1994; Pasquinucci, Mazzanti, Marchisio, Menchelli 1998 forthcoming; Pasquinucci *et al.* 1999 forthcoming.
- 2 In the northern *ager Pisanus* (now Versilia) the ancient landscape is hard to detect due to its destruction by urbanization and industrial settlements (Menchelli 1990).
- 3 Liv. 10.12.
- 4 Liv. 28.45.15.
- 5 Polyb. 2.27.1; 2.28.2; Banti 1943, 126-27; Corretti 1994.
- 6 Liv. 21.26.3; 39.3; Polyb. 3.96.6.
- 7 Pasquinucci and Menchelli 1995.
- 8 Liv. 35.3.1 (concerning the *ager Pisanus*): *vis magna pecorum*.
- 9 Strab. 5.2.5 (concerning *Pisae*), deriving from Posidonius (Lasserre 1967, 202).
- 10 The hilly and mountainous areas (Monti Pisani, Colline Livornesi) supplied building stone. In his description of Pisa Strabo (5.2.5, based on Posidonius) mentions the extractive activities in the Monte Pisano. The same stone was used later for part of the mediaeval city walls.
- 11 See below.