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WATER RIGHTS IN ARCHAIC AND CLASSICAL GREEK CITIES: OLD AND NEW PROBLEMS REVISITED

1. In ancient Greek utopian thought the imaginary *polis* was always provided with an abundance of water. In Plato's Atlantis, the paradigm of the blessed state that had turned hybriatic and dystopic, thus becoming a mirror image of thalassocratic and imperialistic Athens¹, the water flowing from two springs, one cold and the other hot (τοῦ ψυχροῦ...καὶ τοῦ θερμοῦ νάματος), was collected in cisterns supplying various baths, and the outflowing water was then partly carried to the grove of Poseidon for irrigation and partly conveyed by means of conduits to the outer circles (*Crit.* 117b: καὶ ἐπὶ τοὺς ἔξω κύκλους δι' ὀχετῶν...ἐπωχέτευον). As for the fertile plain, in Plato's description it was surrounded by a circular ditch which received the streams running down from the mountains and was crossed by wide canals (διώρυχες εὐθεῖαι) to the effect that «they gathered the crops from the land twice in a year, in winter having the benefit of rain from heaven, in summer bringing in the water which the land supplied from the canals» (*Crit.* 118d: καὶ δις δὴ τοῦ ἐνιαυτοῦ τὴν γῆν ἐκαρποῦντο, χειμῶνος μὲν τοῖς ἐκ Διὸς ὕδασι χρώμενοι, θέρους δὲ ὅσα γῆ φέρει τὰ ἐκ τῶν διωρύχων ἐπάγοντες νάματα).

The same concepts reappear in the *Laws* with regard to the functions of the *agronomoi*: they are to see to it that rainwater does not flood and damage the countryside and, by means of dams and ditches, can be used for agricultural purposes to make

¹ Vidal-Naquet 1964; cf. also Gill 1977; Naddaf 1994; Prandi 2015, 162-170.

even the driest spots abounding in good water (ὄπως...καὶ τοὺς ἀύχηροτάτους τόπους πολυῦδρους τε καὶ εὐῦδρους ἀπεργάζωνται). In the same way, the *agronomoi* were expected to take care of spring waters, whether streams or fountains (τὰ τε πηγαῖα ὕδατα, ἔαντε τις ποταμὸς ἔαντε καὶ κρήνη ἦ), and render the land more fertile and the crop more plentiful by collecting them and conveying them into a system of underground channels (καὶ συνάγοντες μεταλλείαις, νάματα πάντα ἄφθονα ποιῶσιν) (761b-c).

2. Plato's passages are of interest in the first place because they introduce us to the technical terminology of water management, notwithstanding the fact that the precise meaning of these terms in the different contexts is often difficult to pin down. Plato, for instance, uses with some frequency the term *νάμα*, derived from *νάω*, «flow», sometimes with regard to both spring or fountain water² and to watercourses (*Crit.* 111d: ἄφθονα κρηνῶν καὶ ποταμῶν νάματα; cf. also *Leg.* 644a: ἐκ τῶν κοινῶν ναμάτων), but some others more narrowly with reference to either of them (*Crit.* 117a: ταῖς δὲ δὴ κρήναις, τῇ τοῦ ψυχροῦ καὶ τῇ τοῦ θερμοῦ νάματος; *Leg.* 761b: νάματα καὶ κρήνας ποιῶσαι [in the first passage *νάμα* clearly refers to spring water, in the second to streams]). Likewise, the term *ὄχετός* means «water conduit», «water pipe», «aqueduct»³ (cf. *Plut. Them.* 31,1: ὅτε τῶν Ἀθηναίων ἐπιστάτης ἦν, ἔλῶν τοὺς ὑφαιρομένους τὸ ὕδωρ καὶ παροχετεύοντας; for early attestations of the term see also *IC IV 52* = Koerner 1993, 414-416 (no. 140) = van Effenterre-Ruzé

² The meaning of *κρήνη* is in turn not always clear-cut: cf. Tölle-Kastenbein 1985 (esp. 452: «Jene κρήνη stellt eine Wasserentnahmestelle dar, und diese ist dadurch charakterisiert, daß sie in irgendeiner Weise gefaßt, gemantelt, geschützt war – *arte factus*. Dabei kann die κρήνη unmittelbar über oder nahe der Quelle liegen, sie kann aber auch in gewisser Entfernung vom Wasserursprung erbaut sein, was dann eine kürzere oder längere Wasserleitung erforderlich macht»), with Hellmann 1992, 235-242, stressing that «la κρήνη est donc distincte de la πηγή, ou source naturelle, et en théorie du φρέαρ, le dispositif sans fond, qui va chercher l'eau dans la nappe souterraine ou nappe phréatique, alors que la kréné est de préférence l'aboutissement d'une source. Toutefois, par leur encadrement architectural, tous deux peuvent se confondre: une couverture peut exister dans les deux cas, et une kréné peut prendre l'eau à un niveau très bas» (237; cf. also 242: «Au total, on voit que les mentions épigraphiques de κρήνη ou de φρέαρ, à Délos, soulèvent de multiples questions. Elles montrent surtout que la traduction automatique de κρήνη et de φρέαρ par «fontaine» et «puits» n'est guère satisfaisante»); Moggi 1997, 196-200 (cf. esp. 199-200 with reference to *Thuc.* 2,15,5; *Paus.* 4,31,6 and 33,1: «[I] a mia impressione è che in epoca arcaico-classica...πηγή abbia univocamente designato le sorgenti, mentre κρήνη ha coperto talvolta anche questo significato oltre a quello di fontana; a partire da Tucidide, che distingue nettamente il significato dei due termini, anche se in un caso sembra conformarsi all'uso di κρήνη nel senso di sorgente, si assiste ad un processo di differenziazione semantica, non del tutto lineare, a conclusione del quale i due termini risultano specializzati e stabilizzati, rispettivamente, sul versante delle fontane (κρήνη) e su quello delle sorgenti (πηγή)».

³ On the difference between *ὄχετός μετέωρος* and *ὄχετός κρυπτός* see Martin 1957, 66-72; cf. also Hellmann 1992, 103-104; Argoud 1983, 7-10.

1995, 322-324 (no. 90), and *SEG* 35,295 = Koerner 1993, 86-87 (no. 30), referring to a cistern [κενεάριον] and a ὄχετος [cf. *SEG* 42,289)]⁴ but the difference between a ὄχετος and a ὑπόνομος, a «channel» dug underground (see for instance Arist. *Meteor.* 350a: οἱ γὰρ τὰς ὑδραγωγίας ποιοῦντες ὑπονόμοις καὶ διώρυξι συνάγουσιν, ὥσπερ ἄν ἰδιούσης τῆς γῆς ἀπὸ τῶν ὑψηλῶν), is not always obvious *prima facie*⁵.

The picture is moreover further complicated by the existence of other terms recurring with the same or a similar meaning: ἀγωγή (ὔδατος) is a case in point (see e.g. *IG* I³ 49, ll. 4-5; II³ 338, ll. 15-17: καὶ τὴν ἐν Ἀμφιαράου κρήνην ἐξωικοδόμησεν καὶ τῆς τοῦ ὕδατος ἀγωγῆς καὶ τῶν ὑπονόμων ἐπιμελεῖται αὐτόθι, and, above all, the deeds in the «register of sales» from Tenos quoted and discussed below). Another example is provided by a Hellenistic inscription from Corcyra (second century B.C.), recording the verdict in a dispute for damages between the *polis* and a Soterion, where κορχυρέαι is used to indicate underground channels draining water from a house (or possibly, according to G. Thür, from a public building, a σκευοθήκη) (*IG* IX, I², 4, 794, ll. 7-11: ἀνυπόδικον [δὲ εἶμεν Σω]τηρίωνα περὶ τᾶν κορχυρε[ἄν τᾶν φερ]ουσᾶν ἐκ τᾶς οἰκίας εἰς τὸ να[ώριον καὶ τοῦ] ῥύματος τοῦ ῥέοντος ἀπὸ [τᾶς στέγας ἐ]πὶ τὸ ναώριον)⁶. In Hesychius' *Lexicon* (s.v.) γόργυρα is explained as a synonym of ὑπόνομος (ὑπόνομος, δι' οὗ τὰ ὕδατα ὑπεξήει), and thus as an underground conduit for drainage.

3. Plato's above mentioned passage from the *Laws* (761b-c), which is not introduced in the context of his discussion of agrarian legislation (νόμοι γεωργικοί), and

⁴ Arnaoutoglou 2013, 108-110.

⁵ According to Knoepfler 2001, 53, «*ochétos* désigne normalement une canalisation (quel que soit le matériau utilisé) et non pas un canal creusé», in other words a ὑπόνομος. Saba 2012, 50, adds that «while *ochetoi* could rest on the surface, *hyponomoi* could not and...in general they must have had a greater capacity than *ochetoi*». One, however, wonders in what way the stone *ochetos* for the drainage of the men's bath in the sanctuary of Amphiaraios described in great detail in *I.Oropos* 292 (*IG* VII 4255; Argoud 1993, 41-44 (no. 3); Hellmann 1999, 59-61 (no. 16), ll. 2-27), differed from a *hyponomos*. On the technical term ὑπόνομος see also Chatelain 2001, 83-89. An Attic rock-cut inscription (*SEG* 35,140) attests the term διάνομος, which, according to Langdon 1985, 261, «denominates a conduit which runs above ground and is open to the sky. It is the counterpart of ὑπόνομος, a covered subterranean conduit» (this interpretation is however rejected by J. Tréheux, *BE* 1989, no. 377, who questions the usefulness of boundary markers for an open air conduit visible to all and suggests that «[l]e repère s'expliquerait mieux s'il était recouvert ou souterrain»).

⁶ On this inscription see Hennig 1995, 257-258; Meier 2012, 235-237 (no. 18). Thür 2002 suggests that the mysterious σκευοθήκη of l. 12 must be identified with the οἰκία of l. 9 as the building from which damage originated and that «Soterion wurde folglich nicht als Hauseigentümer, sondern wahrscheinlich als Bauunternehmer in Anspruch genommen, und zwar wegen unsachgemäßer Arbeit». If this is the case, the inscription did not concern litigation between the *polis* and a private individual but between the city and a building contractor.

is for this reason rightly not considered to be part of his treatment of *Wasserrecht*⁷, poses in its own right the unavoidable question of whether his legislation on water and water rights reflected contemporary legal practice or was, to the contrary, a facet of the philosophical dimension underlying the project of the «second city»⁸. On the one hand, as observed by L. Brisson and J.-F. Pradeau, the system of *public* irrigation, permanent and on a large scale, envisaged by Plato seems to be «plutôt ambitieux»⁹ and, with some notable exceptions (cf. in the first place *IG XII*, 9, 191 [Daresté-Haussoullier-Reinach 1891-1904, I, 143-157 (no. IX); Pernin 2014, 281-290 (no. 134)], concerning the drainage of a marshy lake [λίμνη] at Ptechai in the territory of Eretria and the creation of a reservoir to collect water for irrigation [318-315 B.C.]; see below)¹⁰, does not appear to have been the rule in the management of the Greek countryside¹¹.

On the other hand, although it is widely recognized that the legal institutions of Magnesia were to a large extent inspired by the Athenian model¹², this does not appear to have been the case for the functions of the rather plethoric board of *agronomoi*, the officials in charge of water management in the country (5 for each of the 12 tribes, 60 in total + 12 young assistants per tribe), who have no actual equivalent

⁷ On the fundamental coherence between the four laws on water rights enunciated at 844a-d, 845d-e and the provisions concerning the competence of *agoranomoi* and *astynomoi* over κρήναι at 764b-c (cf. 763c-d) see Klingenberg 1976.

⁸ See e.g. Krasilnikoff 2002, 52: «It is important to accept that the majority of the provisions laid out by Plato were indeed to be found in various *poleis* throughout Greece, but only piecemeal, never all together in one location. This ambitious plan for the design and implementation of an advanced water supply did not have, as far as we are able to tell, a counterpart in any contemporary Greek society, and was never implemented in Athens».

⁹ Brisson-Pradeau 2006, I, 412: «Platon décrit ici un système de retenue et de transport plutôt ambitieux. Les conduites d'eau souterraines n'existent en son temps que sur des distances réduites. Le projet des *Lois* est celui de leur extension à l'échelle de la ville; qui plus est, Platon conçoit une irrigation permanente».

¹⁰ For a comprehensive treatment of the historical, legal and technical questions posed by the contract between the *polis* of Eretria and Chairephanes see Knoepfler 2001; Chatelain 2001. For the relationship between water resources and territorial organization in the *poleis* of Sicily and Magna Graecia see Collin-Bouffier 2009; Prestianni Giallombardo 2004-2005 and 2012. On marshes and wetland reclamation in ancient Greece cf. Fantasia 1999.

¹¹ Argoud 1987, 28-30 («Tous ces textes témoignent d'une bonne connaissance du rôle de l'irrigation et de sa pratique. En général, cette irrigation était pratiquée sur une petite échelle, au niveau du jardin, du champ ou du verger, et toujours au moyen de canaux de dérivation» (30)). On the relationship between water and farming and for the dominance of dry-farming in ancient Greece cf. also Krasilnikoff 2002, stressing that «[t]he evidence is...both meager and inconclusive about a general utilization in classical practices of the irrigation of fields proper, whereas the garden-*kepos* seems to be the location towards which water was led for the benefit of different levels of integrated production of various types of farm produce» (55).

¹² Piérart 1974, esp. 464-466 («En somme, mise à part une simplification des institutions, qu'expliquent les dimensions plus petites de la cité des Magnètes, Platon s'est contenté, pour l'essentiel, de demander à la constitution d'Athènes les matériaux dont il avait besoin»).

in Athens, where demarchs appear to have been, at a local level, the magistrates in charge of all matters concerning land administration¹³.

The same question inevitably applies also to the five laws regulating water management and the use of water resources expounded in the eighth book of the *Laus* in the section focusing on νόμοι γεωργικοί (844a-d, 845d-e). They have been the object of an in-depth analysis by R. Koerner and, especially, E. Klingenberg¹⁴ but several questions still escape clear definition and remain open for discussion.

One of the reasons lies in the nature of Plato's treatment of such *nomoi*: as he himself underlined by means of a clever «water» metaphor, while he was drawing from a tradition of «time-honoured and excellent laws from whose course it was not appropriate to deviate with (long) discussions» (844a: καὶ τῶν ὕδάτων περὶ γεωργοῖσι παλαιοὶ καὶ καλοὶ νόμοι κείμενοι οὐκ ἄξιοι παροχετεύειν λόγοις)¹⁵, he deemed it sufficient to lay down, in a paradigmatic fashion, some of the underlying fundamental principles without going into much detail¹⁶. This is clearly shown by a comparison between Plato's law on the right to draw drinking water from a neighbour's well in the country (844b) with Solon's law concerning the same matter (Plut. *Sol.* 23,6 = F 63 Ruschenbusch: νόμον ἔγραψεν, ὅπου μὲν ἐστὶ δημόσιον φρέαρ ἐντὸς ἵππικῶν χρησθαι τούτῳ· ὅπου δὲ πλεῖον ἀπέχει ζητεῖν ὕδωρ ἴδιον· ἐὰν ὀρυζάντες ὀργυῶν δέκα βάθος παρ' ἑαυτοῖς μὴ εὕρωσι, τότε λαμβάνειν παρὰ τοῦ γείτονος, ἐξάχουν ὑδρίαν δις ἐκάστης ἡμέρας πληροῦντας). Plato does not offer any provision with regard to distances from public wells (nor mentions them at all) and is less specific on how deep it was necessary to dig to ascertain that there was no water on the property in order to be legally entitled to draw from the neighbour's well. Similarly, his law is more «flexible» in not indicating a limit for the amount of water one could fetch per day and stating that one must only draw as much as necessary for the household (παρὰ τῶν γειτόνων ὑδρεύεσθαι μέχρι τοῦ ἀναγκαίου πώματος ἐκάστοις τῶν οἰκετῶν). A. Kränzlein suggested that Plato was intentionally taking a more favourable stance than Solon to the persons in need of water¹⁷ but the most plausible explanation for

¹³ Piérart 1974, 312: «Platon renonce à l'organisation municipale qui connaissait l'Attique. Il la remplace par une institution unique: un collège de soixante magistrats, répartis en équipes de cinq, qui occupent successivement les douze secteurs de la χώρα»; Papazarkadas 2011, 221-222, 233. On the duties of the Athenian demarchs see Osborne 1985, 74-79; Whitehead 1986, 121-139; Faraguna 1997; Georgoudi 2007. On the legal status and administration of public roads see Ficuciello 2008, 18-21, 52-55.

¹⁴ Koerner 1974; Klingenberg 1976, 62-132. I have found Wörrle 1981 less helpful. For a useful overview of the problems see also Bruun 2000.

¹⁵ Brisson-Pradeau 2006, II, 102: «il y a pour les agriculteurs de vieilles et belles lois dont il n'est pas nécessaire de dévier le cours dans nos propos».

¹⁶ Klingenberg 1976, 62-63 («Die Bindung an die παλαιοὶ καὶ καλοὶ νόμοι κείμενοι bedeutet keine wörtliche, ja nicht einmal unbedingt eine tatbestandliche Rezeption der alten Gesetze, sondern nur die Wahrung der ratio legis und die Übernahme alter Rechtsprinzipien»).

¹⁷ Kränzlein 1963, 65-66 («Platon maß dem Anliegen des Grundeigentümers ohne eigenes Wasser ein stärkeres Gewicht bei. Er soll echter Mitberechtigter sein, sein Anteil mit dem

such differences is that «he is interested in presenting general principles rather than the very detailed ones that Solon established»¹⁸.

4. The first principle emerging from Plato's discussion of *Wasserrecht* is the distinction between the supply of water for irrigation in the countryside, which, according to Klingenberg's definition, was «open» in so far as water from natural courses and artificial water basins was, with some limitations, freely available for those who needed it, and the supply of drinking water in the city, which was to the contrary «closed» and under the direct supervision of *polis* magistrates (*astynomoi* and *agoranomoi*)¹⁹.

As for the «ownership» of water rights, on the one hand, and of wells, sources and conduits connected to the water supply system, on the other, the following classification can be proposed on the basis of Plato's model:

a) the ownership of water resources (and of the connected man-made structures, i.e. wells, fountains, cisterns, water channels, etc.) went hand in hand with the ownership of the land to which they pertained, whether public, belonging to an association or private. Water and water rights are, as a result, sometimes mentioned in sale or lease contracts either because they were, permanently or temporarily, alienated together with the property concerned or, more significantly, because they were in actual fact divorced from the property rights themselves.

In *IG I³ 256*, a regulation concerning the right to drink water from the Halykos in a sanctuary sacred to the Nymphs near Sounion, water could be freely consumed on the spot after paying the rather modest sum of one obol per year but could not be taken away from the sanctuary in amphoras. In this case the penalty was comparatively very high and, even if one had paid the obol fee, amounted to 50 drachmai per amphora, which became sacred to the Nymphs²⁰. According to a clause of *IG I³ 84*, an Attic decree establishing the terms for the lease of the τέμενος of the sanctuary of Kodros, Neleus and Basile (418/7 B.C.), the tenant was given the right to unlimited use of the water from a ditch (καὶ τῆς τάφρου καὶ τῷ ὕδατος κρατῆν τῷ ἐγ Διὸς τὸν μισθούμενον) that collected the rainwater from an area, probably outside the Themistoklean Wall, in the southern part of the city (ll. 34-37)²¹. In the *Tabula Halaesina*, a cadastral inscription, unfortunately now lost, recording the result of a survey of public lands to be leased out by the *polis* (second century B.C.), one of the lots of the hilly territory of sector A is described as having rights both to the water of a spring, which was presumably located

Wachsen seines Haushalts ansteigen und ihm auch in Zeiten des Mangels die Entnahme nicht ganz verwehrt werden können»).

¹⁸ Bruun 2000, 563; cf. Klingenberg 1976, 77-84.

¹⁹ Klingenberg 1976, 64-65.

²⁰ For this interpretation of the provision at ll. 10-13 cf. Meyer 2004.

²¹ For an extensive commentary on the inscription see now Pernin 2014, 32-42 (no. 2). For the topographical aspects see also D. Marchiandi-S. Savelli in Greco 2011, 421-423.

on the property itself, and to the waste water from a nearby bath, which in all likelihood was not (*IG XIV 352* = Dubois 1989, 234-248 (no. 196), I, ll. 18-19: ἀκολουθεῖ τῷ κλάρῳ τούτῳ τὸ ὕδωρ τὸ ἐκ τᾶς κράννας καὶ τοῦ βαλανείου τὸ ἀπορρέον). While the water from the fountain must have been used for drinking, the grey water draining away from the bath must have been used for irrigation²².

An interesting example is moreover provided by the «register of sales» from Tenos, a long inscription listing 47 transactions involving real estate under the archonship of Ameinolas, some time during the late fourth century B.C. (*IG XII, 5, 872* = Game 2008, 104-145 (nos. 41-76), 172-190 (full text)). The deeds, whose structure follows a recurring pattern, record a detailed description of the properties with a remarkable variety of terms. Water resources pertaining to country estates are in particular mentioned in nine deeds, in the majority of cases concerning properties ranging among the most valuable ones²³. Again, the terminology appears to be varied and somewhat bewildering, because it is in most cases difficult to reconstruct the concrete situations hidden behind it. R. Koerner argued that expressions such as ἐπρίατο τὴν οἰκίαν καὶ τὰ χωρία...καὶ τὰ ὕδατα τὰ προσόντα τοῖς χωρίοις, «and the water that is attached (or belongs) to the fields» at ll. 104-105, attested also by three Attic ὄροι (*IG II² 2657*, ll. 2-7: ὄρο[ς] χωρίων καὶ οἰ[κ]ίας καὶ ὕδα[τ]ος τοῦ προσόντος τοῖς χωρίοις; 2655 [restored]; 2759, ll. 3-4: καὶ τῆς προσούσης [κρήνης] τῷ κηπιδίῳ), cannot simply mean that there was a spring source on the property but rather, in the light of the terminology of (and the situation described by) other entries in the same inscription (l. 50: καὶ ὕδατος ἀγωγὰς ὅσαι εἰσὶν τῶν χωρίων τούτων; l. 56: καὶ ὕδατος ἀ[γ]ωγὰς τὰς οὐ[σ]α[ς] τῶν χωρίων τούτων; 113-114: καὶ ὕδατος ἀγωγὰς τὰς οὐσας τῶν χωρίων), that among the assets belonging to the property there were some water conduits used for irrigation and that the sale also included the right to draw water from a source (stream or spring) located *outside* the boundaries of the property itself (cf. Plat. *Leg.* 844a)²⁴.

²² See Prestianni Giallombardo 2012, esp. 382, emphasising the rational planning in the use of water resources.

²³ Étienne 1990, 27: «Or, plus du quart des domaines disposent de droit d'eau, et il s'agit là d'un élément important dans la valeur d'un bien-fonds, puisque sur huit mentions six sont faites à propos des plus grosses propriétés»).

²⁴ Koerner 1974, 158-162. The only parallel use of πρόσειμι in the inscription is provided by contract no. 17 (ll. 40-41), where Timokritos son of Timomachos purchases from a lady, Krynilion, «all the χωρία in Heristhos» ([τὰ] χωρία π[άν]τα τὰ ἐν Ἡρίσθῳ καὶ.....[ς] προσ[όν]τα τὰ Σίμου). The text is here uncertain owing to a lacuna but the meaning of the expression must in some way or the other be «(which) belonged (or had belonged) to Simos» (Simos cannot in this case be the neighbour whose name is indicated immediately thereafter [οἷς γείτων Μορυχίων Θεαινέτου [Δ]ονακεύς]; cf. Dareste-Haussoullier-Reinach 1891-1904, I, 71: «tous les terrains sis à Héristhos, [y compris] ceux appartenant à Simos»; Étienne 1990, 55: «On mentionne un propriétaire (l. 41, τὰ προσόντα τὰ Σίμου) qui n'est ni vendeur ni acheteur»; Game 2008, 187: «tous les terrains situés à Héristhos et..., qui avaient appartenu à Simos»).

Whether this explanation can be applied to *all* contracts where ὕδωρ is mentioned is, however, doubtful. In other deeds the possession of water rights is expressed with phrases such as καὶ τὰ ὕδατα ὅσα ἐστὶ τῆς γεωργίας (l. 94), καὶ τὰ ὕδατα ὅσα ἐστὶν τῶν χ[ω]ρ[ί]ων τούτων (l. 79), where the verb προσεῖναι, «to pertain to», «to be attached to», is replaced by the simple εἶναι followed by the genitive, and it cannot be ruled out that what was meant in these cases was that the spring this time was actually *on* the property. The formulation of the deeds therefore aimed at stressing, against any possible claim, that such water was included in the transaction, in the same way as at ll. 94-95 the sale also involved assets such as «the existing roof and the fitted doors and the rest of the house-gear» (καὶ τὸν κέραμον τὸν ὄντα καὶ θύ[ρας τὰς] ἐπούσ[ας] καὶ τὰ ἄλ[λα] σκευή), which surely stood on the property.

We must nonetheless admit that there are not sufficient elements to decide whether in the extensive document from Tenos the verb προσεῖναι has a specific technical meaning and regularly refers to a legal situation different from that reflected by the simple εἶναι.

b) Natural water courses, public springs, public cisterns and reservoirs, channels, underground conduits, aqueducts and public wells and fountains (cf. e.g. Plut. *Sol.* 23,6, referring to a δημόσιον φρέαρ) belonged to the *polis*. Consistently with the above mentioned distinction between drinking water and water for irrigation, outside the city water from streams and public reservoirs could be freely accessed. Some documents, however, contain provisions with a view to limiting the amount of water an individual was entitled to draw, being thus «designed to preserve and secure the public water supply, and at the same time to ensure that people in need had access to water»²⁵. An early fifth-century law from Gortyn (*IG IV 43 Bb* = Koerner 1993, 401-402 (no. 133) = van Effenterre-Ruzé 1995, 253-257 (no. 70 Bb)), for instance, established the right to derive water from the middle of the river into one's own property but also set some limits to the amount of water that could be extracted by measuring it against the water level at the bridge at the agora (τὸ ποταμὸ ἀΐ κα κατὰ τὸ μέτρον τὰν ῥοὰν θιθῆι ῥῆν κατὰ τὸ ῥὸν αὐτῶ, θιθεμένοι ἄπατον ἤμην. τὰν δὲ ῥοὰν ὄττον κατέκει ἀ ἐπ' ἀγοραῖ δέπυρα ἢ πλῖον, μεῖον δὲ μή). In the *Tabulae Heracleenses* (end of the fourth-beginning of the third century B.C.), the συνθήκαι concerning the emphyteutic lease of the sacred lands (χώροι) belonging to Dionysos specify that the tenants were not allowed to deepen or divert the ditch or the stream running through their land nor were they allowed to build dams to stop the water from running in or running out (τὰς δὲ τράφως τὰς διὰ τῶν χώρων ῥεώσας καὶ τὼς ῥόως οὐ κατασκαψόντι οὐδὲ διασκαψόντι τῶι ἡδᾶτι οὐδὲ ἐφερζόντι τὸ ἡδᾶρ οὐδ' ἀφερζόντι), whereas they had to clean them whenever it was necessary (ἀνκοθαρίοντι δὲ ὅσάκις κα δέωνται τὰ παρ αὐτῶν χωρία ῥέοντα) (*IG XIV 645, I, ll. 130-132*)²⁶.

²⁵ Krasilnikoff 2002, 52.

²⁶ Dareste-Haussoullier-Reinach 1891-1904, I, 207: «Quant aux fossés et rigoles qui

c) According to Plato's *Laws*, farmers who needed to bring water to their own farm (ὁ βουλευθεὶς ἐπὶ τὸν αὐτοῦ τόπον ἄγειν ὕδωρ), and had to do so by drawing it from public νάματα (natural streams or springs), had the automatic right to construct channels and lead the water by whatever way they wished as long as they did not tap it from the spring (or, it can be supposed, other water resources) of a private individual (μὴ ὑποτέμνων πηγὰς φανεράς ἰδιώτου μηδενός) and they did not pass through houses, sacred precincts or graves. Damage caused by the laying down of water conduits (ὄχεταγωγία) moreover had to be kept to a minimum on penalty of a legal action for damages (μὴ βλάβπτων πλὴν αὐτῆς ὄχεταγωγίας) (844a). As scholarly discussion has amply shown, there is no positive evidence to the effect that such «servitude» and limitation of ownership rights²⁷ in actual fact reflected Greek practice²⁸. An early fifth-century law from Gortyn, as we have seen, made it lawful to derive water from a river (τὸ ποταμῷ ἄ κα...θιθῆι ῥῆν [κ]ατὰ τὸ ρὸν αὐτῷ) but we do not know whether it concerned all those who were in need of water or, as is more probable, only those whose property bordered the river. Another Gortynian law (*IC* IV 73a = Koerner 1993, 417-421 (no. 145) = van Effenterre-Ruzé 1995, 324-326 (no. 91), ll. 1-6) has been brought into this picture. According to H. van Effenterre and F. Ruzé, «[I]nscription précise d'abord les conditions dans lesquelles peut s'exercer un droit de passage des eaux sur le terrain d'autrui». The crucial point, however, is that it cannot be established with sufficient certainty whether the focus of the law was water being channelled and brought in *over* a neighbour's field or water being drained off *into* a neighbour's property²⁹. In the first scenario, we would have a concrete example

traversent les terrains, les preneurs ne devront ni les approfondir, ni les saigner, ni pratiquer de barrage soit pour accumuler les eaux soit pour les dériver; ils devront curer, autant de fois qu'il sera nécessaire, ceux qui longent leurs terrains respectifs»; Uguzzoni-Ghinatti 1968, 232: «Quanto ai fossati che scorrono attraverso i terreni e i ruscelli (gli affittuari) non li approfondiranno né vi praticheranno derivazioni per l'acqua né faranno delle dighe sia per accumulare sia per togliere l'acqua, ma ripuliranno, ogni volta che sia necessario, le acque lungo i loro poderi»; Pernin 2014, 465: «quant aux fossés qui traversent les terrains et les rigoles, ils ne pourront ni les détruire, ni les ouvrir, ni en retenir ni en détourner l'eau; ils cureront aussi souvent que nécessaire ceux qui coulent le long de leurs terrains». For a comprehensive study of the inscriptions see Uguzzoni-Ghinatti 1968; Pernin 2014, 459-481 (no. 259); cf. also Migeotte 2014, 165-167.

²⁷ Haliste 1950, 142-144; Kränzlein 1963, 66-67; Bruun 2000, 559-561.

²⁸ Klingenberg 1976, 66-77.

²⁹ Koerner 1974, 174-175, and 1993, 420-421, assuming, mainly on logical grounds, that «διαρρέω ist etwas anders als "hindurchfließen lassen" zu verstehen» (1993, 420) and that the preposition ἐς is to be understood as «süddor. für ἐξ» (1974, 175 n. 1), translated the beginning of the law with «[Wenn einer] Wasser aus (dem Grundstück) des Nachbarn ableitet...» and suggested that «[w]ahrscheinlich erlaubt die Regelung, daß ein Grundstücksbesitzer Wasser vom Feld seines Nachbarn herbeileitete, so fern dieser zustimmte und der Ableitende μὴ διαρεῖ. Das ist wohl so zu verstehen, daß er das Wasser nur für seine Ländereien benutzen und nicht auf die Felder eines zweiten, weiter abgelegenen Nachbarn hindurchfließen lassen durfte» (1974, 174-175). Klingenberg (1976, 84 and 106-107), on the other hand, maintained that

of Plato's law; in the second scenario, the Gortynian inscription would provide further evidence on Greek legislation about damage caused by rain water running off onto a neighbour's lower lying property (cf. also *IC IV 52* = Koerner 1993, 414-416 (no. 140) = van Effenterre-Ruzé 1995, 322-324 (no. 90)), which is illustrated by Plato's third law in his *Wasserrecht* section (844c-d) and by Demosthenes' speech *Against Kallikles*³⁰. Since the question cannot be settled with sufficient confidence, I propose to leave it aside and move to the next point.

5. The view has sometimes been advanced in scholarship that «considering the great number of urban aqueducts crossing the countryside in the Greek world... cities would not have needed to buy the land, but could build an aqueduct regardless of the landowner's wishes»³¹. If I am not mistaken, it was P. Guiraud in his book on *La propriété foncière en Grèce* who first observed that «la Grèce était sillonnée d'une multitude de canaux généralement souterrains qui alimentaient les villes d'eau potable» and suggested that «les cités n'allaient pas jusqu'à acheter toute la partie du sol sur leur parcours, d'autant plus qu'ils passaient presque tous sous terre»³². As proof of such public right of passage, Plato's law on the right of individuals to bring water to their property over their neighbour's land has sometimes been cited, and it is assumed that, if such right was valid for private citizens, it must have all the more applied to the *polis* (or its subdivisions)³³. Considering that the status of Plato's law is in itself uncertain, the risk of running into a circular argument is thus apparent.

The evidence illuminating such legal questions is unfortunately very scarce. R. Koerner went as far as to suggest that the almost total lack of documentation was not due to an accident of survival but resulted from the fact that in Greek cities water was mainly supplied from wells, while the significance of water conduits and aqueducts

«ἐξ...nicht als ἐκ sondern als εἰς und das διαρῦειν nicht als δι-αρῦειν, 'schöpfen', sondern als διερῦειν, 'traducere', zu verstehen ist». The law would, as a result, deal with the «Ableitung des Regenwassers auf fremde Grundstücke». More recently, van Effenterre and Ruzé proposed (1995, 326) a sort of middle way solution observing that «[l]e verbe *diarrêô* a deux sens très voisins bien attestés: "couler à travers" ou "se répandre". A l'aoriste, il s'agit de faire passer l'eau: il suffit d'une simple rigole, vite tracée, vite abandonnée ou oubliée. Au présent, il s'agit de ne pas inonder le terrain du voisin qui a permis le passage» (on this linguistic point cf. also Bile 1988, 227 n. 298). Their argument is therefore that the law dealt with the right of passage to lead water into one's own land, as held by Koerner, but that the ensuing situation was looked at from the point of view of the person who was in need of water.

³⁰ Klingenberg 1976, 85-108. For a discussion of the legal aspects of the dispute in Dem. 55 cf. also Harrison 1968, 249-252; Feraboli 1978; MacDowell 2009, with earlier literature.

³¹ Bruun 2000, 566.

³² Guiraud 1893, 192-193.

³³ Cf. Haliste 1950, 143-144, concluding on the basis of the parallel of Plat. *Leg.* 844a that «[e]s bestand vielmehr ein allgemeines Servitut der Wasserleitung, von der denn auch Private, wie es im platonischen Gesetz ausführlich erörtert wird, Nutzen ziehen konnten»

was quantitatively rather limited³⁴. As demonstrated by recent archaeological investigation, such explanation is, however, clearly wrong as far as Athens is concerned, where several aqueducts constructed over a span of time ranging from the second half of the sixth century to Roman imperial times have been identified³⁵. It has in particular been recognised that the area outside the Themistoklean Wall north-east of the city played a fundamental role in this respect as here water originating from Lykabettos, Imettos and Parnes was collected and conveyed by means of a complex distribution network branching into many underground water galleries and terracotta conduits. In the light of this, it is legitimate to assume that there must have existed some specific regulations on water conduits and the right of passage to lead them.

In the early classical law from Thasos known as «la stèle du port» (*SEG* 42,585 = van Effenterre-Ruzé 1995, 332-337 (no. 95)) the first paragraph records a provision to the effect that «in the street of the shrine of the Charites» it was forbidden «to draw water» and possibly, according to the reading proposed by the editor, «to establish wells» (ll. 2-6). The law set regulations to protect public property from encroachment and to keep the processional road clean³⁶, showing, on a general level, that the Greek city from an early time exerted administrative control and policed public infrastructure in the interest of the community³⁷. It can be surmised that, within urban areas, water conduits of the public supply system tended to run along, or underneath, the course of roads or streets, although we are justified in wondering to what extent this proved to be a universal rule³⁸. As for the *chora*, an interesting example is provided by the *Tabulae Halaesinae* where public interest was enforced in the provision that the strip of land along the water conduit (ὄχετός) fed by the κράνα Ἰπύρρα was to be left uncultivated for a width of 70 feet (*IG* XII 352 = Dubois 1989, 234-248 (no. 196), I, ll. 7-9: τὸ ὑπὸ τὸν ὄχετὸν ἄχρι τὰν κράναν [τὰν Ἰπύρ]ραν οὐκ ἐργαζέται καὶ περίσταςιν ἀφρησεῖται[ι] πό(δας) ὁ παντᾶ, τὰ δὲ δένδρεα καρπευσε[ῖται]). It must, however, be observed that the *Tabulae* recorded the result of a survey of public lands to be leased out so that the *ochetos* was, technically speaking, located on public property. A similar case is offered by *IG* II³ 338, ll. 15-17, where Pytheas of Alopeke was praised for his activity as ἐπιμελητῆς τῶν κρηνῶν (cf. *Arist. Ath. Pol.* 43,1), and in particular because he τὴν ἐν Ἀμφιαράου κρήνην ἐξωικοδόμησεν καὶ τῆς τοῦ ὕδατος ἀγωγῆς καὶ τῶν ὑπονόμων ἐπιμελεῖται αὐτόθι (ll. 16-18). As clearly indicated by

³⁴ Koerner 1974, 185-186: «Das mag man so erklären, daß die Brunnen sehr zahlreich waren und in ersten Linie die Wasserversorgung sicherstellten, während nur relativ wenig Leitungen existierten».

³⁵ For a comprehensive survey of the archaeological evidence see D. Marchiandi in Greco 2014, 1, esp. 603-607, 642-646, 674-685, 819-821.

³⁶ Duchêne 1992, 41-42.

³⁷ In his survey of public property in the Greek city Lewis 1990 does not consider water management and infrastructure.

³⁸ Duchêne 1992, 21-22, 45-46.

the locative adverb αὐτόθι, the water line Pytheas had laid down was within the boundaries of the sanctuary of Amphiaraios at Oropos, and therefore on sacred land.

In order to make some progress in our discussion, a promising line of enquiry is represented by the possibility that in legal practice water rights and ownership of water conduits could actually be separated from the property rights themselves³⁹. The most obvious model is offered by the exploitation of the Laureion silver mines: here the *polis* exerted a monopoly on mining rights regardless of who the owner of the surface ownership rights was and leased them to private individuals (or partnerships) for a number of years in exchange for a rent (Arist. *Ath. Pol.* 47,2)⁴⁰. The situation with water rights is nonetheless not exactly the same because, as we have seen, we can rule out from the start the idea that the state had a monopoly of water (or underground water).

6. Two epigraphic documents (and, to be precise, in the second case, a group of documents) can be used to attempt to explore the legal questions arising from the construction of aqueducts and water lines, both underground and at the surface. The first text, the above-mentioned Chairephanes inscription from Eretria (*IG XII*, 9, 191 = Pernin 2014, 281-290 (no. 134)), is only partly relevant because it concerns water drainage rather than the supply of water. This notwithstanding, the contract (συνθήκαι) between Chairephanes (together with his κοινωνοί, mentioned only at ll. 29-31) and the people of Eretria established that the former, on the one hand, undertook to carry out works at his own expense to drain the marshy lake (λίμνη) at Ptechai within four years⁴¹, and, on the other, once such work was completed, was given the right to exploit the reclaimed land for ten years in exchange for a rent of three talents per year, thirty talents in total. In order to drain the λίμνη the contractors were entitled to dig wells in privately owned fields (ἐν τοῖς ἰδιωτικοῖς χωρίοις) for the construction of the underground gallery (φρεατία[ς] ποεῖν τῶ[ι] ὑπονόμω[ι]) on condition that they paid in advance the price ([ἀλλὰ ταύτας μὴ ποιεῖτω πλήν διὰ τοῦ χωρίου] οὐπὲρ καὶ πρότερον τὴν τιμὴν δῶ), whereas, if channels or ditches above ground were needed for the draining process⁴², these were to be excavated on

³⁹ Knoepfler 2001, 52 n. 56; cf. also Kellogg 2013, 109.

⁴⁰ On the administration of the Laureion silver mines see Faraguna 2006; Thür-Faraguna (forthcoming).

⁴¹ According to Knoepfler 2001, 49, «l'étang à assécher par Chairéphanès devait correspondre à une vaste étendue de terres cultivables, plusieurs centaines d'hectares, bref tout un canton de l'Éretriade».

⁴² Knoepfler 2001, 51-52, suggests that what is recorded on the stele is not the detailed description of the works to be carried out (συγγραφαί) but mainly the provisions regulating the impact of Chairephanes' enterprise on farming, both while work was in progress and in the future when the reservoir (see below) was in place. Cf. also Pernin 2014, 287: «Tel qu'il a été gravé sur la pierre, il établit les clauses qui régissent la mise en chantier des travaux de drainage et les conditions de location des terres bonifiées, mais il ne contient ni la motivation,

uncultivated land (ἐξαγέτω ἀπὸ τῶν ἐργασίμων χωρίων δι[ὰ] τῶν ἀργῶ[ν]) in order to keep disruption to agriculture to a minimum (ll. 17-19)⁴³. The drainage project also included the creation of a reservoir not larger than two square stadia ([πο(ι)ησάσθω δὲ] κ[α]ὶ δεξαμενὴν τοῖς ποταμοῖς μὴ μείζον[α] ἢ δύο σταδίους) with a gate (θύρα; a sluice gate?)⁴⁴, whose water could be used for watering crops by the farmers in spring. While the contract was in force, and for the future (καὶ εἰς [τ]ὸν ἔπει[τα] [χ]ρόνον πάντα), Chairephanes and his partners had moreover to guarantee the maintenance of the underground gallery (ὑπόνομος) and all the rest (ll. 22-24).

This rather complex contract in other words aimed at finding the right balance between Chairephanes and his partners' economic benefit and the interests of the community as a whole. Water from the λίμνη was a public asset and was ultimately to be stored and made available for the benefit of the local landowners (ll. 25-26). The reclaimed land was to become public property (as it had probably always been) and, as far as its use was concerned, we must construe the ensuing legal relationship between the *polis* of Eretria and Chairephanes as a lease contract⁴⁵. As for the subsurface rights, the situation appears less easy to define. Although scholars have often noted that Chairephanes had to pay compensation for the damage caused by digging wells for the underground conduit, Guiraud was right in stressing that the contract simply states that he had to pay the *price* in advance (οὐπὲρ καὶ πρότερον τὴν τιμὴν δῶ). The transaction, as a result, looks like a sale by means of which Chairephanes acquired the underground rights that originally belonged to the landowners⁴⁶. It is, however, legitimate to wonder to what extent such subtle legal definitions really mattered. The practical situation was clear: Chairephanes committed himself to construct the underground conduit and to ensure the

ni la description des travaux. Lorsqu'il est fait référence à ces derniers, l'inscription donne l'impression qu'ils avaient été prescrits et décrits ailleurs: on peut ici faire un parallèle avec les travaux de construction qui sont le plus souvent seulement évoqués dans les décrets décidant de leur exécution. Il sont plus amplement décrits dans un autre document, qui constitue le contrat d'entreprise à proprement parler. La préoccupation majeure de la cité était, dans ce document, de réglementer la cohabitation avec les paysans, riverains des travaux».

⁴³ On the technical aspects of the draining operation see Knoepfler 2001, 51-53; Chatelain 2001, concerning the heavily restored ll. 17-21 esp. 88-89, 106. Cf. also Hennig 1995, 265-266 with n. 102.

⁴⁴ Dareste-Haussoullier-Reinach 1891-1904, I, 153-154; Foxhall 2007, 70.

⁴⁵ Pernin 2014, 287: «L'objet du contrat est double: tout d'abord, Chairéphanès doit exécuter des travaux de drainage pour assécher l'étang de Ptéchai, puis, une fois ces travaux accomplis, Chairéphanès aura la jouissance des terres bonifiées pour les exploiter moyennant l'acquittement d'un loyer. Le texte d'Érétrie combine donc les deux aspects de documents que l'on connaît ailleurs dans le monde grec: à la fois des contrats d'entreprise...et des contrats de location pour des bien-fonds agricoles».

⁴⁶ For an interesting parallel, the contract between the *polis* of Athens and the non-Athenian Sokles in respect to ore prospecting (*IG II³ 433*), where, as restored by Wilhelm, Sokles was [κ]ύριον πάντων τῶν ἐδαφῶ]ν, ὄθεν φησὶν τῆμ πρόσ[οδον] ἔσεσθαι τῶι δήμωι (ll. 6-8), cf. Thür-Faraguna (forthcoming).

maintenance of the drainage system not only for the duration of the lease but also thereafter (καὶ εἰς [τ]ὸν ἔπει[ι]τα [χ]ρόνον πάντα)⁴⁷. In one way or another, he can be thought as acting on behalf of the *polis* as a part of his agreement with the Eretrians so that, seen from this perspective, the operation turns out to be a striking example of the ways the *polis* could enforce its role as «the proprietor in chief of all landed assets within its boundaries»⁴⁸.

7. On a superficial level, five Athenian inscriptions, possibly belonging to the Lykourgan period, dealing with the legal arrangements for the «Acharnian aqueduct» (*SEG* 19,181, l. 8: Ἀχαρνικὸς ὄχετός) reflect a similar situation. The questions posed by these texts are nonetheless somewhat different. Two of them were discovered at the foot of Mount Parnes northeast of Menidi (in the territory of ancient Acharnai)⁴⁹ and published in 1960 (*SEG* 19,181 and 182). Typologically, they appear to be ὄροι, more precisely ὄροι ἐνναίας, ὄροι of the «spring», «underground source», and thus of the «water rights»⁵⁰, and of the rights of passage for the (construction of) the water conduit (καὶ ὄχετῶι διαγωγῆς) «sold» for all time (εἰς τὸν ἅπαντα χρόνον) by the owners of the properties concerned to the κοινωνοὶ τοῦ [Ἀχα]ρνικοῦ ὄχετοῦ, in one case (but presumably in all cases) for a substantial amount of money, 700 drachmai according to *SEG* 19,181, where the price is fully preserved.

Two more inscriptions have been known since the nineteenth century, *IG* II² 2491 and 2502. They were found near the church of Aghios Nikolaos, c. 1.5 km. south-east of Menidi, and in Kokkynos Milos, 3 km. south of Menidi⁵¹. Despite their fragmentary state, they are longer documents, possibly contracts⁵², recording more complex arrangements. The object of the transactions is clearly the same since the ἐνναία ἢ ἐκ τ[ο]ῦ χωρίου ἅπαντος and ὑπόνομοι that could be laid down at whatever depth was needed are again mentioned. In *IG* II² 2502, though a more

⁴⁷ Pernin 2014, 283: «tant que Chairéphanès lui-même exploitera la terre, qu'il entretienne la galerie et le réservoir (?), qu'il veuille à ce que tout soit en bon état, *et ce pour toujours*». It is worth noting that both Dareste-Haussoullier-Reinach 1891-1904, I, 147 and Chatelain 2001, 83, omit to translate the temporal expression καὶ εἰς [τ]ὸν ἔπει[ι]τα [χ]ρόνον πάντα, thus partly altering the meaning of the sentence.

⁴⁸ Burford 1993, 16. Cf. also Guiraud 1893, 202-203, arguing that «[ε]st bien ici une expropriation véritable». Kränzlein 1963, 129, refers to *IG* XI, 9, 191, ll. 19-20, with regard to the power given to Chairephanes «fremden Grundbesitz anzukaufen» at a fixed price per foot (the restoration of the lacuna is, however, very uncertain here; cf. Hennig 1995, 265 n. 102 [«viel zu unsicher»]), but not in respect to the «purchase» of underground rights (ll. 18-19).

⁴⁹ On the territory of Acharnai see now Kellogg 2013, 7-34.

⁵⁰ On the meaning of ἐνναία, which Vanderpool 1965, 169-170, translated with «ground water», «water rights», see Theodoridis 1985, suggesting, on the basis of the «new» Photius' *Lexicon*, s.v. ἐνναίας, «Strömung, Quelle».

⁵¹ D. Marchiandi in Greco 2014, 1, 819.

⁵² Vanderpool 1965, 170: «detailed contracts»; Behrend 1970, 74-75 (no. 22): «Horoi und Fragmente umfangreicherer Vereinbarungen».

fragmentary document, a longer portion of the text is preserved and the term *φρέαρ* together with the verb *ξηραίνω* can be read. An entry in Harpocration's *Lexicon*, s.v. *Παιανιδῆς καὶ Παιονίδαι*, stating that *μνημονεύουσι δὲ καὶ τούτων οἱ ῥήτορες, ὥσπερ καὶ Δείναρχος ἐν τῷ κατὰ Στεφάνου περὶ τοῦ ὄχετοῦ*, is, moreover, possibly relevant to this context: as noted by Vanderpool, «*Paionidai* is a deme near Acharnai, and this speech “against Stephanos in the matter of the aqueduct” must surely concern our Acharnian aqueduct, which to judge from the care with which the contracts were let and the concessions staked out, must have involved a great deal of litigation»⁵³.

The fifth inscription belonging to the series was more recently found built into the wall of a Roman house at Monomati (*SEG* 54,237). Only seven words can be restored but the inscription seems to be almost identical to the others. The word *ὄχετός* significantly recurs twice in the partially preserved four lines of the text. According to A.P. Matthaiou the letter cutter of this text is the same as in *IG* II² 2491 and 2502⁵⁴.

An illuminating similar legal situation appears to be reflected by three ruperstral *boroī* marking the boundary of an open-air water conduit (*ὄρος διανό(μου)*)⁵⁵ on the western slope of Mount Hymettos published by M.K. Langdon (*SEG* 35,140)⁵⁶. In his commentary Langdon notes that «[t]he existence of boundary inscriptions suggests that the water was not intended for the use of the landowner through whose land the conduit passed but was reserved for some other purpose...Here...the inscriptions define a zone upon which landowners could not encroach and from which they apparently could not freely draw water»⁵⁷.

Despite some disagreement⁵⁸, it is today the prevailing view, based on the discovery spots of the inscriptions, that the Acharnian aqueduct was not a local one but was primarily intended to supply Athens with water collected from springs located on the southern side of Parnes and conveyed to the city via a terracotta subterranean conduit⁵⁹. Assuming that the construction of the water line was a large-scale project managed on the initiative of the city (and not of Acharnai or any other demes in the region), the most intriguing problem becomes that of understanding who the *κοινωνοὶ τοῦ Ἀχαρνικοῦ ὄχετοῦ* were.

Following E. Vanderpool's suggestion, scholars have generally assumed that they were «a board of commissioners charged with the construction of the water system»⁶⁰.

⁵³ Vanderpool 1965, 170-172.

⁵⁴ Matthaiou 2004-2008, 674.

⁵⁵ On the meaning of *διάνομος* see above n. 5.

⁵⁶ Langdon 1985, 260-263.

⁵⁷ Langdon 1985, 262-263. See above for the *περίσταισις*, 70 feet wide, along the water conduit to be left uncultivated in *IG* XIV 352 = Dubois 1989, 234-248 (no. 196), I, ll. 7-9.

⁵⁸ Klaffenbach 1961, 121-126; Walbank 1991, 158; Platonos-Yiota 2004, 56-62.

⁵⁹ Vanderpool 1965; Camp II 1982, 11; Kellogg 2013, 107-108; D. Marchiandi in *Greco* 2014, 1, 819-821. Cf. also, with some doubts, Koerner 1974, 170-172; Bruun 2000, 566.

⁶⁰ Vanderpool 1965, 166 and 170; cf. also Kellogg 2013, 105-110 («105: «officials responsible for

In my opinion, this is, however, hardly credible. No other board of Athenian officials styled as *κοινωνοί* is, to my knowledge, attested. Leaving aside the *κοινωνοί* of Chairephanes in the inscription from Eretria, *κοινωνοί* are documented in the Demosthenic *corpus* with regard to commercial and business partnerships engaged in trade or maritime lending (32,7; 34,8, 12, 28, 29; 35,16, 33; 56,2, 5, 7, 9-10, 24, etc.) and to mining investors (37,10 and 38; 42,3; cf. Hyper. 3, *Eux.*, 35-36)⁶¹. The context is, in other words, typically «chromatistic». In Arist. *Atth. Pol.* 52,2 the *δίκαι κοινωνικά* feature in the list of *δίκαι ἔμμηνοι*. Even if we allow for the possibility that they generally concerned «associations»⁶², as recently noted by P. Ismard «[L]es *dikai koinonikai* devaient certainement traiter les conflits relatifs à des affaires commerciales, qu'on qualifierait aujourd'hui "entre associés"»⁶³.

We could consequently surmise that the *κοινωνοί τοῦ Ἀχαρνικοῦ ὄχετοῦ* were a corporation of private contractors who were commissioned by the *polis* to create a system for collecting water and construct an aqueduct to convey it to Athens and, in doing so, «purchased» water rights εἰς τὸν ἅπαντα χρόνον. Seen in this perspective the Acharnian aqueduct could shed new light on the topic of public contracts in classical Athens but the many questions that are bound to remain unanswered should make us reflect. We could, of course, interpret the *κοινωνοί* as a kind of construction company that had undertaken to carry out the work for the ὄχετός. The picture is, however, complicated both by the fact that they had to purchase in turn the water rights from the landowners, in the same way as Chairephanes had to pay the price for underground rights in Eretria, and that in Athens, as shown by the epigraphic building accounts of the fifth and fourth century, construction works were not as a rule «sold» as a whole to building contractors (ἐργῶναι) but parceled out to a large number of *μισθωταί* who undertook to perform some specific job under the supervision of public commissioners (ἐπιστάται) and were generally paid by the day or by the piece work and only seldom, as in the case of architects, received a salary⁶⁴.

its construction»; 109: «officials of the aqueduct»); D. Marchiandi in Greco 2014, 1, 819 («corpo di magistrati denominati *koinonoi* in merito alla realizzazione di un "Acquedotto di Acarne"»).

⁶¹ Biscardi 1999, 36-38 (originally published in 1956, before *SEG* 19,181 and 182 were discovered); Cohen 1992, 128-129, 146-147, 152-153 with n. 176 («A single trader often was unable and/or unwilling to provide the equity necessary to support even a modest sea loan: partnerships or participations were frequently utilized for borrowing even relatively small amounts»; at n. 176 Cohen notes that «[t]he sole surviving written contract governing a maritime loan (Dem. 35.10-12) involves dual lenders and dual borrowers, as does the agreement purportedly quoted in Dem. 56. At least two borrowers appear in Dem. 32 (Protos and Fertatos, § 17) and Dem. 52 (Megakleides and Thrasylos, § 20). None of these loans amounted even to a talent. Ships themselves were owned in partnerships: see the deposition of Apollonides, co-owner of the vessel in Dem. 35 (§ 33)», 182-183. On the legal status of *κοινωνία* see further Harris 1989; Stroud 1998, 64-67.

⁶² Rhodes 1981, 586.

⁶³ Ismard 2007, 62-64.

⁶⁴ Faraguna 2010, 129-133.

The only exception to this pattern I am aware of is represented by *Agora* XIX, L13, a lease document from Peiraeus, where four «entrepreneurs», defined *πριάμενοι*, rented the Peiraeus theatre for 3300 drachmai a year. They undertook at the same time to carry out at their own expense building works, and obtained in exchange the right to collect admission fees from the spectators, acquiring in this way a potentially profitable income source⁶⁵.

A possible line of enquiry would thus be to envisage some similar form of arrangement also for our «associates of the Acharnian aqueduct» and posit that they agreed to construct the water conduit in exchange for the right to draw an income once the aqueduct was in operation, as is the case in the Chairephanes inscription. What this income might have been is, however, a moot point. The idea that the *κοινωνοί* could have profited by selling the water itself seems to be ruled out because free access to water, especially drinking water, appears to have been a fundamental principle underlying Greek legislation on water rights and the few known examples attesting the sale of water invariably belong to the context of sanctuaries and show that the proceeds were used for cult purposes (cf., to quote an example, *IG* II² 1361, ll. 8-10, a decree of the *ὀργεῶνες* of Bendis [330-320 B.C.], where the rent from a house and the income accruing from the sale of water are allocated to the refurbishing of the shrine and of the house itself: ὅπως δ' ἂν ἡ οἰκία καὶ τὸ ἱερόν ἐπισκευ[υ]άζεται, τὸ ἐν[οίκιον τῆ]ς οἰκίας καὶ τὸ ὕδωρ ὅσου ἂμ παραθῆ, ε[ἰ]ς τὴν ἐ]πισκευὴν τοῦ ἱεροῦ [καὶ τῆς οἰκίας], εἰς ἄλλο δὲ μηδὲν ἀναλίσκειν)⁶⁶. It is nonetheless worth observing that the extant inscriptions about the Acharnian aqueduct all concern special agreements between the *κοινωνοί* and private landowners. If we assume that the «Acharnian aqueduct» was a public operation, we must then conclude that the contractual arrangements between the *κοινωνοί* and the *polis* are not preserved and may not have been ever inscribed. It is therefore possible that this aspect of their activity was regulated elsewhere.

As an alternative approach, in his *Attische Pachturkunden* D. Behrend put forward the suggestion that the *κοινωνοί* were the syndicate of the aqueduct users («die Vielzahl der Benutzer der Wasserleitung»)⁶⁷, possibly a group of local landowners or entrepreneurs who pooled their money together in order to acquire permanent water resources for agriculture. On the one hand, such hypothesis is attractive in various respects since many of the legal and administrative problems I have highlighted above are connected to the assumption that the aqueduct was meant to supply the city of Athens. On the other hand, new problems, beginning with the rather high amounts of money involved and the remarkably unfavourable conditions to the «sellers», who

⁶⁵ For a comprehensive study of the inscription and of its legal terminology see Carusi 2014.

⁶⁶ Panessa 1983; Bruun 2000, 562. On the *orgeones* of Bendis see Ismard 2010, 261-274, discussing earlier literature.

⁶⁷ Behrend 1970, 74-75; cf. Wörrle 1981, 84: «die Interessengemeinschaft derer, die das Wasser aus der neuen Leitung benützen wollten und sich deshalb zu deren Planung, Finanzierung und Errichtung genossenschaftlich zusammengetan hatten».

were deprived of their water rights for ever (εἰς τὸν ἅπαντα χρόνον), are inevitably bound to arise and I will lay the question to rest. Should this second scenario prove acceptable, it would, however, cast new light on, and open unexpected perspectives into, Athenian rural society and economic life.

8. To conclude, this survey of problems related to water rights in ancient Greece must end with many questions left unanswered. The impression is that, moving from a set of traditional principles (irrigation of a field is already described in Hom. *Il.* 21,257-262), as social and economic relations within the cities became more complex, since the sixth century B.C. Greek *poleis* were in the course of time obliged to introduce new laws to regulate the use of water, both for drinking and irrigation, and the legal questions arising from the vital need to have access to it. It is doubtful, however, to what extent such *ad hoc* legislation developed into a coherent body of rules. In the case of Athens, there seems to be no equivalent of νόμοι μεταλλικοί with regard to water rights, or at least we do not hear of it. One aspect that can be expected to have increasingly become a source of legal disputes was represented by «servitudes». In this paper I have focused on those arising from the construction of aqueducts and drainage systems, both at the surface and underground. We have seen that some documents clearly reflect the concept of a divorce of underground rights from surface rights, as was the case also for the silver mines. How the relationships between landowners, private contractors responsible for the construction and maintenance of the water lines, and the *polis* were concretely defined in legal terms is an intriguing, and tantalising, problem for whose solution new evidence must be awaited.

BIBLIOGRAPHY

- Argoud 1983: G. Argoud, *Construction d'un «aqueduc grec» aux frontières de l'Attique (Oropos)*, in J.-P. Boucher (ed.), *Journées d'études sur les aqueducs romains*, Paris 1983, 1-11.
- Argoud 1987: G. Argoud, *Eau et agriculture en Grèce*, in P. Louis-F. Métral-J. Métral (eds.), *L'homme et l'eau en Méditerranée et au Proche-Orient, IV: L'eau dans l'agriculture*, Lyon 1987, 25-43.
- Argoud 1993: G. Argoud, *Inscriptions de Béotie relatives à l'eau*, in J.M. Fossey (ed.),

- Boeotia Antiqua III. Papers in Boiotian History, Institutions and Epigraphy in Memory of Paul Roesch*, Amsterdam 1993, 33-55.
- Arnaoutoglou 2013: I.N. Arnaoutoglou, Από τον Σόλωνα στην ρωμαϊκή Έφεσο. Η νομική προστασία της υδροδότησης, in V.A. Leontaritou-K.A. Bourdara-E.S. Papagianni (eds.), *Antecessor. Festschrift für Spyron N. Troianos*, I, Athens 2013, 105-132.
- Behrend 1970: D. Behrend, *Attische Pachturkunden. Ein Beitrag zur Beschreibung der μίσθωσις nach den griechischen Inschriften*, München 1970.
- Bile 1988: M. Bile, *Le dialecte crétois ancien*, Paris 1988.
- Biscardi 1999: A. Biscardi, *Sul regime della proprietà in diritto attico*, in *Scritti di diritto greco*, Milano 1999, 23-74 (originally published in *Studi in onore di Ugo Enrico Paoli*, Firenze 1956, 105-143).
- Brisson-Pradeau 2006: L. Brisson-J.-F. Pradeau, *Platon. Les Lois*, I-II, Paris 2006.
- Bruun 2000: Chr. Bruun, *Water Legislation in the Ancient World (c. 2200 B.C.-c. A.D. 500)*, 3: *The Greek World*, in Ö. Wikander (ed.), *Handbook of Ancient Water Technology*, Leiden-Boston-Köln 2000, 557-573.
- Burford 1993: A. Burford, *Land and Labor in the Greek World*, Baltimore-London 1993.
- Camp II 1982: J.McK. Camp II, *Drought and Famine in the 4th Century B.C.*, in *Studies in Athenian Architecture, Sculpture and Topography Presented to Homer A. Thompson*, «Hesperia» Suppl. 20 (1982), 9-17.
- Carusi 2014: C. Carusi, *The Lease of the Piraeus Theatre and the Lease Terminology in Classical Athens*, «ZPE» 188 (2014), 111-135.
- Chatelain 2001: T. Chatelain, *Assèchement et bonification des terres dans l'Antiquité grecque. L'exemple du lac de Ptéchai à Éréttrie: aspects terminologiques et techniques*, in P. Briant (ed.), *Irrigation et drainage dans l'Antiquité: quanats et canalisations souterraines en Iran, en Égypte et en Grèce*, Paris 2001, 81-108.
- Cohen 1992: E.E. Cohen, *Athenian Economy and Society*, Princeton 1992.
- Collin-Bouffier 2009: S. Collin-Bouffier, *La gestion de l'eau en Sicile grecque: état de la question*, «Pallas» 79 (2009), 65-79.
- Dareste-Haussoullier-Reinach 1891-1904: R. Dareste-B. Haussoullier-Th. Reinach, *Recueil des inscriptions juridiques grecques*, I-II, Paris 1891-1904 (repr. Roma 1965).
- Dubois 1989: L. Dubois, *Inscriptions grecques dialectales de Sicile*, Rome 1989.
- Duchêne 1992: H. Duchêne, *La stèle du port*, Athènes-Paris 1992.
- Étienne 1990: R. Étienne, *Ténos II. Ténos et les Cyclades du milieu du IV^e siècle av. J.-C. au milieu du III^e siècle ap. J.-C.*, Paris 1990.
- Fantasia 1999: U. Fantasia, *Aree marginali nella Grecia antica: paludi e bonifiche*, in D. Vera (ed.), *Demografia, sistemi agrari, regimi alimentari nel mondo antico*, Bari 1999, 65-116.
- Faraguna 1997: M. Faraguna, *Registrazioni catastali nel mondo greco: il caso di Atene*, «Athenaeum» 85 (1997), 7-33.
- Faraguna 2006: M. Faraguna, *La città di Atene e l'amministrazione delle miniere del Laurion*, in H.-A. Rupprecht (ed.), *Symposion 2003*, Wien 2006, pp. 141-160.

- Faraguna 2010: M. Faraguna, *Il sistema degli appalti pubblici ad Atene nel IV sec. a.C.*, in A. Magnetto-D. Erdas-C. Carusi (eds.), *Nuove ricerche sulla legge granaria ateniese del 374/3 a.C.*, Pisa 2010, 129-148.
- Feraboli 1978: S. Feraboli, *Osservazioni sulla Contro Callicle di Demostene*, «QUCC» 29 (1978), 105-121.
- Ficuciello 2008: L. Ficuciello, *Le strade di Atene*, Atene-Paestum 2008.
- Foxhall 2007: L. Foxhall, *Olive Cultivation in Ancient Greece. Seeking the Ancient Economy*, Oxford 2007.
- Game 2008: J. Game, *Actes de vente dans le monde grec. Témoignages épigraphiques des ventes immobilières*, Lyon 2008.
- Georgoudi 2007: S. Georgoudi, *Les magistrats au service des dieux: le cas des démarques en Attique*, in P. Schmitt-Pantel-F. de Polignac (eds.), *Athènes et la politique. Dans le sillage de Claude Mossé*, Paris 2007, 83-110.
- Gill 1977: Chr. Gill, *The Genre of the Atlantis Story*, «CPh» 72 (1977), 287-304.
- Greco 2011: E. Greco, *Topografia di Atene. Sviluppo urbano e monumenti dalle origini al III sec. d.C.*, II, Atene-Paestum 2011.
- Greco 2014: E. Greco, *Topografia di Atene. Sviluppo urbano e monumenti dalle origini al III sec. d.C.*, III.1-2, Atene-Paestum 2014.
- Guiraud 1893: P. Guiraud, *La propriété foncière en Grèce jusqu'à la conquête romaine*, Paris 1893.
- Haliste 1950: P. Haliste, *Das Servitut der Wasserleitung in Platons «Gesetzen»*, «Eranos» 48 (1950), 142-149.
- Harris 1989: E.M. Harris, *Partners in Athenian Law: The Dispute between Lycon and Megacleides ([Dem.] 52.20-1)*, «CQ» 39 (1989), 339-343 (repr. in *Democracy and the Rule of Law in Classical Athens*, Cambridge 2006, 241-247).
- Harrison 1968: A.R.W. Harrison, *The Law at Athens, I: The Family and Property*, Oxford 1968.
- Hellmann 1992: M.-Chr. Hellmann, *Recherches sur le vocabulaire de l'architecture grecque d'après les inscriptions de Délos*, Athènes-Paris 1992.
- Hellmann 1999: M.-C. Hellmann, *Choix d'inscriptions architecturales grecques*, Lyon 1999.
- Hennig 1995: D. Hennig, *Staatliche Ansprüche an privaten Immobilienbesitz in der klassischen und hellenistischen Polis*, «Chiron» 25 (1995), 235-282.
- Ismard 2007: P. Ismard, *La construction du fait associatif en droit athénien et les limites de la notion de personnalité juridique*, «Dike» 10 (2007), 57-83.
- Ismard 2010: P. Ismard, *La cité des réseaux. Athènes et ses associations*, Paris 2010.
- Kellogg 2013: D.L. Kellogg, *Marathon Fighters and Men of Maple. Ancient Acharnai*, Oxford 2013.
- Klaffenbach 1961: G. Klaffenbach, *OPOI ENNAIAΣ*, «MDAI(A)» 76 (1961), 121-126.
- Klingenberg 1974: E. Klingenberg, *La legge platonica sulle fontane pubbliche*, in A. Biscardi (ed.), *Symposion 1974*, Köln-Weimar-Wien 1979, 283-305.
- Klingenberg 1976: E. Klingenberg, *Platons NOMOI ΓΕΩΡΓΙΚΟΙ und das positive griechische Recht*, Berlin 1976.

- Knoepfler 2001: D. Knoepfler, *Le contrat d'Érétrie en Eubée pour le drainage de l'étang de Ptéchai*, in P. Briant (ed.), *Irrigation et drainage dans l'Antiquité: canaux et canalisations souterraines en Iran, en Égypte et en Grèce*, Paris 2001, 41-79.
- Koerner 1974: E. Koerner, *Zu Recht und Verwaltung der griechischen Wasserversorgung nach den Inschriften*, «APF» 22-23 (1974), 155-202.
- Koerner 1993: R. Koerner, *Inschriftliche Gesetzestexte der frühen griechischen Polis* (ed. K. Hallof), Köln-Weimar-Wien 1993.
- Kränzlein 1963: A. Kränzlein, *Eigentum und Besitz im griechischen Recht des fünften und vierten Jahrhunderts v. Chr.*, Berlin 1963.
- Krasilnikoff 2002: J.A. Krasilnikoff, *Water and Farming in Classical Greece. Evidence, Method and Perspective*, in K. Ascani-V. Gabrielsen-K. Kvist-A.H. Rasmussen (eds.), *Ancient History Matters. Studies Presented to Jens Erik Skydsgaard on His Seventieth Birthday*, Rome 2002, 47-62.
- Langdon 1985: M.K. Langdon, *Hymettiana I*, «Hesperia» 54 (1985), 257-270.
- Lewis 1990: D.M. Lewis, *Public Property in the City*, in O. Murray-S. Price (eds.), *The Greek City, from Homer to Alexander*, Oxford 1990, 245-263.
- MacDowell 2009: D.M. MacDowell, *Demosthenes the Orator*, Oxford 2009.
- Martin 1957: R. Martin, *Sur deux expressions techniques de l'architecture grecque*, «RPh» 83 (1957), 66-81.
- Matthaiou 2004-2008: A.P. Matthaiou, *Τρία άττικά σημειώματα*, «Horos» 17-20 (2004-2008), 673-674.
- Meier 2012: L. Meier, *Die Finanzierung öffentlicher Bauten in der hellenistischen Polis*, Mainz 2012.
- Meyer 2004: G. Meyer, *Le prix de l'eau et le tarif du sanctuaire des Nymphes*: IG, I³, 256, «REG» 117 (2004), 321-325.
- Migeotte 2014: L. Migeotte, *Les finances des cités grecques*, Paris 2014.
- Moggi 1997: M. Moggi, *Il lessico del paesaggio in Pausania*, in P. Radici Colace (ed.), *Atti del II Seminario Internazionale sui Lessici Tecnici Greci e Latini*, Messina-Napoli 1997, 189-205.
- Naddaf 1994: G. Naddaf, *The Atlantis Myth: An Introduction to Plato's Later Philosophy of History*, «Phoenix» 48 (1994), 189-209.
- Osborne 1985: R. Osborne, *Demos: The Discovery of Classical Attika*, Cambridge 1985.
- Panessa 1983: G. Panessa, *Le risorse idriche dei santuari greci nei loro aspetti giuridici ed economici*, «ASNP» s. III, 13 (1983), 359-387.
- Papazarkadas 2011: N. Papazarkadas, *Sacred and Public Land in Ancient Athens*, Oxford 2011.
- Pernin 2014: I. Pernin, *Les baux ruraux en Grèce ancienne. Corpus épigraphique et étude*, Lyon 2014.
- Piérart 1974: M. Piérart, *Platon et la Cité grecque. Théorie et réalité de la Constitution des «Lois»*, Bruxelles 1974.
- Platonos-Yiota 2004: M. Platonos-Yiota, *Άχαρναί. Ιστορική καί τοπογραφική έπισκόπηση των αρχαίων Αχαρνών, των γειτονικών δήμων καί των οχυρώσεων της Πάρνηθας*, Acharnae 2004.

- Prandi 2015: L. Prandi, *Platone e "l'utopia democratica"?* (considerazioni su Menesseno, Timeo 20e-24e, Crizia), «Politica antica» 5 (2015), 161-191.
- Prestianni Giallombardo 2004-2005: A.M. Prestianni Giallombardo, *Ambiente e paesaggio nella Sicilia ellenistico-romana. I percorsi dell'acqua nel territorio di Halaesa Archonidea*, «MEP» 9-10 (2004-2005), 229-248.
- Prestianni Giallombardo 2012: A.M. Prestianni Giallombardo, *L'acqua come elemento fondamentale nell'organizzazione del territorio e dello spazio urbano. Il caso di Alesa*, in A. Calderone (ed.), *Cultura e religione delle acque*, Roma 2012, 375-398.
- Rhodes 1981: P.J. Rhodes, *A Commentary on the Aristotelian Athenaion Politeia*, Oxford 1981.
- Saba 2012: S. Saba, *The Astynomoi Law from Pergamon. A New Commentary*, Mainz 2012.
- Stroud 1998: R.S. Stroud, *The Athenian Grain-Tax Law of 374/3 B.C.*, «Hesperia» Suppl. 29 (1998).
- Theodoridis 1985: Chr. Theodoridis, *Die ὄροι ἐννατίας der Inschriften SEG 19, 181. 182 und Photius E 989*, «ZPE» 60 (1985), 51-52.
- Thür 2002: G. Thür, *Entscheidung in Bausachen aus Kerkyra (IG IX, 12, 4, 794)*, «ZSS Rom. Abt.» 119 (2002), 326-339.
- Thür-Faraguna (forthcoming): G. Thür-M. Faraguna, *Silver from Laureion: Mining, Smelting, and Minting*, in B. Woytek (ed.), *Infrastructure and Distribution in Ancient Economies. The Flow of Money, Goods and Services*, Wien, forthcoming.
- Tölle-Kastenbein 1985: R. Tölle-Kastenbein, *Der Begriff Krene*, «AA» 1985, 451-470.
- Uguzzoni-Ghinatti: A. Uguzzoni-F. Ghinatti, *Le tavole greche di Eraclea*, Roma 1968.
- Vanderpool 1965: E. Vanderpool, *The Acharnian Aqueduct*, in Χαριστήριον εἰς Ἄναστάσιον Κ. Ὀρλάνδου, I, Athenai 1965, 166-175.
- van Effenterre-Ruzé 1995: H. van Effenterre-F. Ruzé, *Nomima. Recueil d'inscriptions politiques et juridiques de l'archaïsme grec*, II, Rome 1995.
- Vidal-Naquet 1964: P. Vidal-Naquet, *Athènes et l'Atlantide. Structure de signification d'un mythe platonicien*, «REG» 77 (1964), 420-444.
- Walbank 1991: M. Walbank, *Leases of Public Lands*, in *The Athenian Agora, XIX: Horoi – Poletai Records – Leases of Public Lands*, Princeton 1991, 149-207.
- Whitehead 1986: D. Whitehead, *The Demes of Attica, 508/7-ca. 250 B.C.*, Princeton 1986.
- Wörrle 1981: M. Wörrle, *Wasserrecht und -verwaltung in griechischer Zeit*, in *Wasser im Antiken Hellas*, «Leichtweiss-Institut für Wasserbau der Technischen Universität Braunschweig, Mitteilung» 71 (1981), 71-97.