

Pál SÁRÝ*
Water law rules in Ancient Rome**

Abstract

*The paper wishes to show the main Roman legal rules connected with waters. These rules are discussed in the following order: (1) the legal position of the sea and the seashore; (2) the rules connected with public rivers (ownership rules, provisions for the sake of the undisturbed navigation, flood protection measures); (3) the rules of building, using, repairing of the public works connected with waters (bridges, aqueducts, sewers, baths); (4) predial servitudes connected with water; (5) the problems of damage caused by rainwater in the field of neighbouring rights (the rules of the *actio aquae pluviae arcendae*).*

Keywords: water law, Roman law, water in Roman law, water protection

1. The legal position of the sea and the seashore

According to the rules of Roman law, the sea (*mare*) and its shore (*litus maris*) were no one's property.¹ The sea and the seashore were by natural law (*ius naturale*) common to all (*res communes omnium*).² The seashore extended to the limit of the highest tide in time of storm in winter (*hibernus fluctus maximus*).³ On the sea everyone had right to sail (*ius navigandi*)⁴ and to fish (*ius piscandi*).⁵ To hinder the practice of these rights was an injury (*iniuria*).⁶

The *praetor* issued an interdict against anyone who had obstructed the navigation on the sea, or the landing on the seashore.⁷ Everyone had right to build a breakwater (*moles*) in the sea, but it was prohibited to cause damage to others in course

Pár Sárý: Water law rules in Ancient Rome – Vízjogi szabályok az ókori Rómában. *Journal of Agricultural and Environmental Law* ISSN 1788-6171, 2019 Vol. XIV No. 26 pp. 219-254 doi: 10.21029/JAEL.2019.26.219

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** *This study has been written as part of the Ministry of Justice programme aiming to raise the standard of law education.*

¹ Cf. Paul. D. 18,1,51; Inst. 2,1,5.

² Cf. Marci. D. 1,8,2,1; Ulp. D. 8,4,13 pr.; Paul. D. 18,1,51; Cels. D. 43,8,3,1; Inst. 2,1,1. For more about this legal position of the sea and the seashore, see Fenn 1925, 716–727; Fiorentini 2003, 427–484.

³ Cf. Inst. 2,1,3.

⁴ Cf. Ulp. D. 43,8,2,9.

⁵ Cf. Marci. D. 1,8,4 pr.; Gai. D. 1,8,5,1; Ulp. D. 43,8,2,9.

⁶ Cf. Ulp. D. 43,8,2,9; Ulp. D. 47,10,13,7. For more about this type of *iniuria*, see Fiorentini 2003, 381–426.

⁷ Cf. Ulp. 43,12,1,17. For more about this *interdictum*, see Fiorentini 2003, 343–350.

of such building. In the case of a harmful construction of a breakwater it was possible to ask the *praetor* for an interdict.⁸

The fish (*pisces*) lived in the sea were things belonging to no one (*res nullius*), so by the *ius gentium*, anyone could acquire the right of ownership to them by occupation (*occupatio*).⁹ On the sea everyone could build a pile house which was a private property.¹⁰ The island risen in the sea (*insula in mari nata*) belonged to no one, so it could be freely occupied by anyone.¹¹ The stones (*lapilli*) and gems (*gemmae*) found on the seashore – as things belonging to no one – could also be occupied.¹²

Fishermen could freely haul their nets up from the sea, and could dry them on the shore. On the seashore everyone could build a cottage (*casa*) for purposes of retreat.¹³ In such a case the cottage was considered as a private property which ceased as the building collapsed.

2. The rules connected with public rivers

The Roman law made a difference between public rivers (*flumina publica*) and private rivers (*flumina privata*).¹⁴ Ulpian writes the following: "*Some rivers are perennial, some torrential. (...) Some rivers are public, some not. Cassius defined a public river as a perennial one; this opinion of Cassius, which Celsus also approves, is held to be acceptable.*"¹⁵

The public rivers – in a similar way as the sea and the seashore – could be freely used by anyone, it was free to travel by raft, boat or ship in them,¹⁶ to fish in them,¹⁷ to draw water from them,¹⁸ to water animals from them. From a public river, however, it was possible to conduct water only with imperial permission.¹⁹

The banks of the public rivers – in a similar way as the seashore – could be used by anyone, but the river bank (*litus fluminis*) – in contrast with the seashore – was not considered as a thing belonging to no one. As we can read in the Institutes of Justinian, "*the public use of the banks of a river, as of the river itself, is part of the law of nations; consequently every one is entitled to bring his vessel to the bank, and fasten cables to the trees growing*

⁸ Cf. Ulp. D. 43,8,2,8. For more about this *interdictum*, see Fiorentini 2003, 328–342.

⁹ Cf. Gai. 2,67; Gai. D. 41,1,1,1; Ulp. D. 41,1,44; Inst. 2,1,12.

¹⁰ Cf. Pomp. D. 1,8,10; Ulp. D. 39,1,1,18; Pomp. D. 41,1,30,4.

¹¹ Cf. Gai. D. 41,1,7,3; Pomp. D. 41,1,30,4; Inst. 2,1,22.

¹² Cf. Marci. D. 1,8,3; Inst. 2,1,18.

¹³ Cf. Gai. D. 1,8,5,1; Ulp. D. 39,1,1,18; Ner. D. 41,1,14 pr.; Pomp. D. 41,1,50; Inst. 2,1,5.

¹⁴ According to Marcian, "*almost all rivers and harbors are public*" (D. 1,8,4,1: "*flumina paene omnia et portus publica sunt*"). In contrast with this, the following can be read in the Institutes of Justinian: "*all rivers and harbors are public*" (Inst. 2,1,2: "*flumina autem omnia et portus publica sunt*"), which is a rough statement. On the basis of the fragments of the *Digesta* we can unambiguously state that the category of the private river (*flumen privatum*) was not abolished by Justinian.

¹⁵ D. 43,12,1,2–3 (tr. Alan Watson). Cf. Hinker 1992, 179. For more about the legal position of the rivers, see Fiorentini 2003, 59–158.

¹⁶ Cf. Inst. 2,1,4.

¹⁷ Cf. Inst. 2,1,2.

¹⁸ Cf. Paul. D. 39,3,17,4.

¹⁹ Cf. Papir. D. 8,3,17.

there, and use it as a resting-place for the cargo, as freely as he may navigate the river itself. But the ownership of the bank is in the owner of the adjoining land, and consequently so too is the ownership of the trees which grow upon it."²⁰

The Justinianic text-book – following the words of Gaius²¹ – summarizes the main cases of changes of ownership connected with public rivers in this way: "*Moreover, soil which a river has added to your land by alluvion becomes yours by the law of nations. Alluvion is an imperceptible addition; and that which is added so gradually that you cannot perceive the exact increase from one moment of time to another is added by alluvion. If, however, the violence of the stream sweeps away a parcel of your land and carries it down to the land of your neighbour it clearly remains yours; though of course if in the process of time it becomes firmly attached to your neighbour's land, they are deemed from that time to have become part and parcel thereof. (...) If, however (as often occurs), an island rises in a river, and it lies in the middle of the stream, it belongs in common to the landowners on either bank, in proportion to the extent of their riparian interest; but if it lies nearer to one bank than to the other, it belongs to the landowners on that bank only. If a river divides into two channels, and by uniting again these channels transform a man's land into an island, the ownership of that land is in no way altered: but if a river entirely leaves its old channel, and begins to run in a new one, the old channel belongs to the landowners on either side of it in proportion to the extent of their riparian interest, while the new one acquires the same legal character as the river itself, and becomes public. But if after a while the river returns to its old channel, the new channel again becomes the property of those who possess the land along its banks. It is otherwise if one's land is wholly flooded, for a flood does not permanently alter the nature of the land, and consequently if the water goes back the soil clearly belongs to its previous owner.*"²²

All of these can be completed, on the basis of the Digest, with the followings. If the lands on the river bank were lands with fixed boundaries (*agri limitati*), the island risen in the river could be freely occupied.²³ In a similar way, in cases of *agri limitati*, the dry or derelict riverbed could be occupied.²⁴ In connection with the flood of a river or the sea, Pomponius writes the following: "If a field in which we have a usufruct is flooded by a river or by the sea, the usufruct is lost since even the bare ownership is lost in such a case; indeed, not even by fishing can we preserve the usufruct. However, just as the bare ownership is revived if the water recedes on the same flood tide with which it came, so too it must be held that the usufruct is restored."²⁵

The *praetor* protected the undisturbed use of public rivers by interdicts.²⁶ An *interdictum* prohibited every acts in a public river or on its bank, which hindered navigation (*interdictum ne quid in flumine publico ripave eius fiat, quo peius navigetur*).

²⁰ Inst. 2,1,4 (tr. J. B. Moyle). Cf. Gai. D. 1,8,5 pr.

²¹ D. 41,1,7,1–6. About the problems of alluvion (*alluvio*), avulsion (*avulsio*), and the island risen in a river (*insula in flumine nata*), see further Gai. 2,70–72.

²² Inst. 2,1,20–24 (tr. Moyle).

²³ Cf. Ulp. D. 43,12,1,6.

²⁴ Cf. Ulp. D. 43,12,1,7.

²⁵ D. 7,4,23 (tr. A. Watson).

²⁶ For more about these interdicts, see Fiorentini, 2003, 163–181; Terrazas Ponce 2012, 371–409.

Ulpian cites the words of the *praetor*: "You are not to do anything in a public river or on its bank, nor put anything into a public river or onto its bank, which makes the landing or passage of a boat worse."²⁷ According to Ulpian, this *interdictum prohibitorium* was completed by the *praetor* with an *interdictum restitutorium*: "You are to make good whatever you have that is done in a public river or on its bank, or introduced in that river or on its bank, by which the landing or passage of boats is or shall be made worse."²⁸

An other *interdictum* also guaranteed the freedom of navigation in public rivers and the use of their banks (*interdictum ut in flumine publico navigare liceat*). Its text is also reported by Ulpian: "I forbid the use of force against such a one to prevent him from traveling in a boat or raft in a public river, or loading or unloading on its bank."²⁹ These rules for public interest restricted the ownership rights over the riparian lands which were private property.

A further *interdictum* prohibited to change the flow of public rivers as compared with their former summer course (*interdictum in flumine publico fiat, quo aliter aqua fluat, atque uti priore aestate fluxit*). According to the report of Ulpian, the *praetor* said: "I forbid anything to be done in a public river or on its bank, or anything to be introduced into a public river or on its bank, which might cause the water to flow otherwise than it did last summer."³⁰ About the aim of the *interdictum* Ulpian writes this: "By this interdict the *praetor* has made provision against a river's drying up because of unauthorized tapping by watercourses, or bringing any injury to neighbors by changing its bed."³¹ This *interdictum prohibitorium* was also completed by the *praetor* with an *interdictum restitutorium*. Ulpian cites these words of the *praetor*, too: "You must restore what you have that is done in a public river or on its bank, or inserted into that river or on its bank, if because of this the water flows otherwise than it flowed last summer."³²

The *praetor* protected the riparian lands by also an other *interdictum* (*interdictum de ripa munienda*). In this case, according to Ulpian, the *praetor* drew up as follows: "I forbid the use of force to prevent such a one from doing any work in a public river or on its bank for the purpose of protecting the bank or the field which adjoins the bank, provided that navigation is not made worse by it..."³³ The jurist adds to this that "it is extremely useful to repair and build up the banks of public rivers."³⁴

In the works of the Roman historians we can read in many places about flood protection measures.³⁵ According to Suetonius, Augustus "to control the floods he widened and cleared out the channel of the Tiber, which had for some time been filled with rubbish and narrowed by jutting buildings."³⁶

²⁷ D. 43,12,1 pr. (tr. A. Watson), cf. Gai. 4,159; Inst. 4,15,1.

²⁸ D. 43,12,19 (tr. A. Watson).

²⁹ D. 43,14,1 pr. (tr. A. Watson).

³⁰ D. 43,13,1 pr. (tr. A. Watson), cf. Diósdí 1973, 68.

³¹ D. 43,13,1,1 (tr. A. Watson).

³² D. 43,13,1,11 (tr. A. Watson).

³³ D. 43,15,1 pr. (tr. A. Watson).

³⁴ D. 43,15,1,1 (tr. A. Watson).

³⁵ About the floods of the Tiber and the Roman flood protection, see Robinson 1992, 73–76; Aldrete 2007.

³⁶ Suet. *Aug.* 30 (tr. J. C. Rolfe).

In A.D. 15 the greater part of the capital was flooded by the Tiber: "*the Tiber, rising under the incessant rains, had flooded the lower levels of the city, and its subsidence was attended by much destruction of buildings and life*", writes Tacitus.³⁷ At this time the emperor Tiberius entrusted with an *ad hoc* character two senators to work out a proposal for prevention of similar troubles. The two senators (Ateius Capito and Lucus Arruntius) proposed for the senate to divert the rivers swelling the Tiber. About the session of the senate Tacitus reports as follows: "Deputations from the municipalities and colonies were heard. The Florentines pleaded that the Clanis should not be deflected from its old bed into the Arno, to bring ruin upon themselves. The Interamnates' case was similar: – 'The most generous fields of Italy were doomed, if the Nar should overflow after this scheme had split it into rivulets.' Nor were the Reatines silent: – 'They must protest against the Veline Lake being dammed at its outlet into the Nar, as it would simply break a road into the surrounding country. Nature had made the best provision for the interests of humanity, when she assigned to rivers their proper mouths – their proper courses – their limits as well as their origins. Consideration, too, should be paid to the faith of their fathers, who had hallowed rituals and groves and altars to their country streams. Besides, they were reluctant that Tiber himself, bereft of his tributary streams, should flow with diminished majesty.' Whatever the deciding factor – the prayers of the colonies, the difficulty of the work, or superstition – the motion of Piso, 'that nothing was to be changed,' was agreed to."³⁸

After this the emperor set up a permanent board for supervision of the banks and bed of the Tiber (*curatores riparum et alvei Tiberis*).³⁹ According to Cassius Dio, the board of five senators had to look after "*the river, so that it should neither overflow in winter nor fail in summer, but should maintain as even a flow as possible all the time.*"⁴⁰

In A.D. 102 the emperor Traian built a canal to carry off the water of the Tiber for the purpose of flood protection. In spite of this, in A.D. 107 or 108 there was a great flood again in Rome and its surroundings: both the Tiber and the Anio left his bed. Pliny the Younger gives an account of these events in one of his letters as follows: "*Here we have had nothing but storm after storm and constant deluges of rain. Tiber has deserted his proper channel and is now deep over the more low-lying banks. In spite of the drainage of the ditches constructed with great foresight by the Emperor, the river overwhelms the valleys; all the fields are under water, and wherever the ground is level there you can see only water in place of dry ground. (...) Even the Anio, that daintiest of rivers..., has thrown down and carried off in great measure the woods which lend it their shade; it has overthrown mountains..., has overturned buildings in its efforts to regain its lost channel, and raised and spread itself upon their ruins. Those who were caught by the storm upon higher ground saw everywhere around them, here the ruined remains of rich and splendid furniture, there the implements of husbandry, oxen and ploughs and their drivers, mingled with herds of cattle, loose and free from restraint, with trunks of trees and crossbeams from ruined villas, all floating to and fro in wide confusion.*"⁴¹

³⁷ Tac. *Ann.* 1,76 (tr. J. Jackson).

³⁸ Tac. *Ann.* 1,79 (tr. J. Jackson).

³⁹ Vö. Campbell 2012, 318.

⁴⁰ Dio 57,14,8 (tr. E. Cary).

⁴¹ Plin. *Ep.* 8,17 (tr. J. B. Firth).

The *praetor* protected by an interdict the owners who got in such situation, and who wanted to regain the possession of their properties. Ulpian writes as follows: "*Trebatius reports that on an occasion when the Tiber flooded and carried a great deal of property belonging to many people into other people's houses, an interdict was granted by the praetor to prevent force being used against the owners to stop them taking away their possessions...*"⁴²

The provincial governors also protected those whose right of ownership was violated during a flood. "*If a river bursts its banks and the flood water obscures the boundaries, so that some people have the opportunity to seize land to which they have no right, then the provincial governor gives orders that they should keep out of land which does not belong to them, that owners should have their land restored, and that the boundary marks should be indicated by a surveyor*", writes Ulpian.⁴³

In the collection of imperial biographies entitled *Historia Augusta*, we can read the following about the destructive flood of A.D. 161 or 162: "*But now to interrupt the emperor's happiness and repose, there came the first flood of the Tiber – the severest one of their time – which ruined many houses in the city, drowned a great number of animals, and caused a most severe famine; all these disasters Marcus and Verus relieved by their own personal care and aid.*"⁴⁴

Reporting about the flood of A.D. 374, Ammianus Marcellinus also makes mention of the food-supply of the flood victims: "*while Claudius was governing the Eternal City, the Tiber..., was swollen by an excessive rainfall..., covered almost the whole place. While all the remaining quarters of the city, which extend down to a gentler level, were under water, the mountains alone, and such buildings as were especially high, were protected from present danger. And since the height of the waters prevented movement anywhere on foot, a supply of food was furnished in abundance by boats and skiffs, for fear that many people might starve to death.*"⁴⁵

3. The public works connected with waters

The first pile bridge of the Tiber (*pons Sublicius*) was built in the age of the king Ancus Martius.⁴⁶ In the early Republic, the senate decided on the building of bridges, the direction of the execution was the task of the censors.⁴⁷ In the late republic, this task was performed by the *curatores viarum*, the office holders charged with the supervision of the public roads: for example, in 62 B.C. the *pons Fabricius* was built by the *curator viarum* Lucius Fabricius.⁴⁸ Later mainly the emperors built bridges.⁴⁹

⁴² D. 39,2,9,1 (tr. A. Watson).

⁴³ D. 10,1,8 pr. (tr. A. Watson).

⁴⁴ SHA *Marv.* 8 (tr. D. Magic).

⁴⁵ Amm. 29,6,17–18 (tr. J. C. Rolfe).

⁴⁶ Cf. Liv. 1,33. About the bridges of the Tiber, see Robinson 1992, 71–72.

⁴⁷ Cf. Liv. 40,51.

⁴⁸ Cf. Robinson 1992, 72.

⁴⁹ Cf., e.g., SHA *Hadr.* 19.

According to Ammianus Marcellinus, in A.D. 365 Symmachus as *praefectus urbi* built a splendid bridge (*pons Valentiniani*) at his own expense.⁵⁰ In the late empire, the building and repairing of bridges were among the public liturgies (*munera publica*) of the citizens.⁵¹

"For four hundred and forty-one years from the foundation of the City, the Romans were satisfied with the use of such waters as they drew from the Tiber, from wells, or from springs. (...) But there now run into the City: the Appian aqueduct, Old Anio, Marcia, Tepula, Julia, Virgo, Alsietina, which is also called Augusta, Claudia, New Anio", writes Frontinus in about A.D. 98, in his work on the Roman aqueducts (*De aquaeductu urbis Romae*).⁵² According to these, the *aqua Appia* was the first aqueduct in Rome, which was made in 312 B.C., and beside which further eight aqueducts were built till the end of the first century.⁵³

During the Republic the senate decided on the building of aqueducts; the buildings were supervised by the office holders (usually the censors) who had been charged with this task.⁵⁴ During the reign of Augustus, Agrippa, the emperor's son-in-law, built the *aqua Iulia* and the *aqua Virgo*.⁵⁵ According to Suetonius, Augustus "was a prince who desired the public welfare rather than popularity: when the people complained of the scarcity and high price of wine, he sharply rebuked them by saying: 'My son-in-law Agrippa has taken good care, by building several aqueducts, that men shall not go thirsty.'"⁵⁶ Strabo also makes a mention of this activity of Agrippa: "water is brought into the city through the aqueducts in such quantities that veritable rivers flow through the city and the sewers; and almost every house has cisterns, and service-pipes, and copious fountains – with which Marcus Agrippa concerned himself most, though he also adorned the city with many other structures."⁵⁷

In the Republican period water could be led from the aqueducts with permission of the censors or, in lack of censors, the aediles: "for at times I find that the grant was made by the aediles, at other times by the censors;" writes Frontinus, "but it is apparent that as often as there were censors in the government these grants were sought chiefly from them. If there were none, then the aediles had the power referred to."⁵⁸ The mentioned *magistratus* controlled that nobody could damage the conduits, and nobody could draw water from them without permission. About this, Frontinus writes as follows:

⁵⁰ Amm. 27,3,3.

⁵¹ Cf. CTh 11,16,15.18.

⁵² Front. 4 (tr. C. E. Bennett).

⁵³ About the Roman aqueducts, see Herschel 1913; Weiß 1925, 87–116; Van Deman 1934; Longo 1934, 55–93; Ashby 1935; Hainzmann 1975; Póczy 1980; Robinson 1980, 44–86; Panimolle 1968; Bruun 1991; Hodge 1991; Evans 1994; Geißler 1998; Bajánházy 2000, 75–98; De Kleijn 2001; Peachin 2004; Bruun 2012, 11–33.

⁵⁴ Cf. Liv. 39,44; 40,51.

⁵⁵ Frontinus explains the name of the latter aqueduct as follows: "It was called Virgo, because a young girl pointed out certain springs to some soldiers hunting for water, and when they followed these up and dug, they found a copious supply" (Front. 10; tr. C. E. Bennett).

⁵⁶ Suet. *Aug.* 42 (tr. J. C. Rolfe).

⁵⁷ Strabo 5,3,8 (tr. H. L. Jones). About the activity of Agrippa, see Shipley 1933; Evans 1982, 401–411.

⁵⁸ Front. 95 (tr. C. E. Bennett). As the censors were elected every five years for 18 months, there were periods, when there were not censors in the state.

"How much care was taken that no one should venture to injure the conduits, or draw water that had not been granted, may be seen not only from many other things, but especially from the fact that the Circus Maximus could not be watered, even on the days of the Circensian Games, except with permission of the aediles or censors, a regulation which, as we read in the writings of Ateius Capito, was still in force even after the care of the waters had passed, under Augustus, to commissioners. Indeed, lands which had been irrigated unlawfully from the public supply were confiscated."⁵⁹ Accordingly, those who led water from the aqueduct to irrigate their lands without permission were punished by confiscation of their lands. From the text we can also get to know that later the curators took over the management of water affairs from the censors and the aediles. The office of curator of waters (*curator aquarum*) was created by Augustus with the purpose that the curators would continue the activity of Agrippa.⁶⁰ From A.D. 97 Frontinus held this post.⁶¹

In imperial age, he who wanted to lead water from an aqueduct at first had to ask a permission for it from the emperor. After obtaining the permission, it was obligatory to turn to the curator who nominated an inspector (*procurator*) to direct the practical tasks of the connection. The procurators were selected from the freedmen of the emperor. About all of these Frontinus writes as follows: "Whoever wishes to draw water for private use must seek for a grant and bring to the commissioner a writing from the sovereign; the commissioner must then immediately expedite the grant of Caesar, and appoint one of Caesar's freedmen as his deputy for this service."⁶²

The imperial permission exactly determined that water by whom, from where, to where, in what quantity might be led. In connection with the main tasks of the *curator* Frontinus writes as follows: "As concerns the draft of water by private consumers, it is to be noted: No one shall draw water without an authorisation from Caesar, that is, no one shall draw water from the public supply without a licence, and no one shall draw more than has been granted."⁶³ The permission attached to the authorized person: "The right to granted water does not pass either to the heirs, or to the buyer, or to any new proprietor of the land," writes Frontinus.⁶⁴ Later he adds to this the following: "That granted water must not be carried elsewhere than upon the premises to which it has been made appurtenant, or taken from another reservoir than the one designated in the writing of the sovereign, is self-evident, but is forbidden also by ordinance."⁶⁵

More rules were created for protection of the aqueducts. A *senatus consultum* ordained as follows: "there shall be kept clear a space of fifteen feet on each side of the springs, arches, and walls; and that about the subterranean conduits and channels, inside the City, and inside buildings adjoining the City, there shall be left a vacant space of five feet on either side; and it shall not be permitted to erect a tomb at these places after this time, nor any structures, nor to plant trees. If there be any trees within this space at the present time they shall be taken out by the roots except when they are connected with country seats or enclosed in buildings. Whoever shall contravene these provisions,

⁵⁹ Front. 97 (tr. C. E. Bennett).

⁶⁰ Cf. Robinson 1992, 86.

⁶¹ Cf. Ashby 1935, 20, 26.

⁶² Front. 105 (tr. C. E. Bennett).

⁶³ Front. 103 (tr. C. E. Bennett).

⁶⁴ Front. 107 (tr. C. E. Bennett).

⁶⁵ Front. 109 (tr. C. E. Bennett).

shall pay as penalty, for each contravention, 10,000 sestertii, of which one-half shall be given as a reward to the accuser whose efforts have been chiefly responsible for the conviction of the violator of this vote of the Senate. The other half shall be paid into the public treasury. About these matters the water-commissioners shall judge and take cognizance."⁶⁶

The *lex Quinctia de aquaeductibus*, which was passed in 9 B.C. on the proposal of the *consul* Titus Quinctius Crispinus, ordained to punish with a fine of 100,000 sesterces the person who deliberately drilled, damaged an aqueduct. Besides, the damager had to restore the original condition. If the committer was a slave, instead of him his owner could be called to account. The text of the law is literally reported by Frontinus: "Whoever, after the passage of this law, shall maliciously and intentionally pierce, break, or countenance the attempt to pierce or break, the channels, conduits, arches, pipes, tubes, reservoirs, or basins of the public waters which are brought into the City, or who shall do damage with intent to prevent water-courses, or any portion of them from going, falling, flowing, reaching, or being conducted into the City of Rome; or so as to prevent the issue, distribution, allotment, or discharge into reservoirs or basins of any water at Rome or in those places or buildings which are now or shall hereafter be adjacent to the City, or in the gardens, properties, or estates of those owners or proprietors to whom the water is now or in future shall be given or granted, he shall be condemned to pay a fine of 100,000 *sestertii* to the Roman people; and in addition, whoever shall maliciously do any of these things shall be condemned to repair, restore, re-establish, reconstruct, replace what he has damaged, and quickly demolish what he has built... If a slave shall do any such damage, his master shall be condemned to pay 100,000 *sestertii* to the Roman people."⁶⁷

The imperial constitutions related to the public aqueducts compose a separate title both in the *Codex Theodosianus*⁶⁸ and the *Codex Iustinianus*.⁶⁹ From these constitutions it is worthy to raise the edict passed by the emperor Constantine in A.D. 330, which exempted from the extraordinary public burdens those over whose land a public aqueduct passed, but which obliged them to clean the aqueduct regularly. Those who omitted this duty were to be punished by confiscation of their land. The edict prohibited to plant trees within 15 feet of the aqueduct.⁷⁰

It is worthy to say some words about the sewers (*cloacae*) and the public baths (*balneae publicae*), too.⁷¹ As Strabo writes, the Romans built such "sewers that could wash out the filth of the city into the Tiber."⁷² The building of the *Cloaca Maxima* is connected with the name of the last king Tarquinius Superbus; according to Livy, the subterranean tunnel was intended to receive all the sewage of the City.⁷³

⁶⁶ Front. 127 (tr. C. E. Bennett).

⁶⁷ Front. 129 (tr. C. E. Bennett).

⁶⁸ CTh 15,2: *De aquaeductu*.

⁶⁹ C. 11,43(42): *De aquaeductu*.

⁷⁰ CTh 15,2,1 = C. 11,43(42),1. The prohibition of planting trees was confirmed by later edicts; see C. 11,43(42),6,1; 11,43(42),10,2–3.

⁷¹ About the Roman sewers, see Robinson 1992, 73, 101–103.

⁷² Strabo 5,3,8 (tr. H. L. Jones).

⁷³ Liv. 1,56. About the *Cloaca Maxima*, see Hopkins 2007, 1–15.

Under the Republic, the censors dealt with the cases of the sewers, similarly as of the aqueducts: they made contracts in the name of the state with private contractors in order to build or to clean out the sewers.⁷⁴ According to the report of Cassius Dio, Agrippa cleaned out the sewers of Rome at his own expense.⁷⁵ We can come to know from a letter of the Younger Pliny that those who were condemned to public works (*ad opera publica*) had to, among others, clean out the sewers.⁷⁶

Frontinus mentions that water was led from some aqueducts to, among others, public baths.⁷⁷ The appropriate heating of the water of the public baths, and the cleaning of the baths was controlled by the *aediles curules*.⁷⁸ The entrance fee was a quarter of an *as*, which was a poor sum.⁷⁹ Agrippa as an *aedilis* made free the using of the baths for his official period.⁸⁰ Hadrian forbade men to bath together with women,⁸¹ this ban was confirmed by Marcus Aurelius.⁸² Anyone could use the public baths; to hinder the practice of this right was an injury (*iniuria*).⁸³ The slave-holders often went to the bath together with their slaves. The emperors also liked to visit the baths, where they bathed together with the mob.⁸⁴ In the late empire, the heating of the public baths (*calefactio thermarum*) was among the public liturgies (*munera publica*) of the citizens.⁸⁵

4. Predial servitudes connected with water

In the sources of Roman law, among the predial servitudes (*servitutes praediorum*), we can meet many times questions connected with waters.⁸⁶ In respect of our topic, it is worthy to emphasize the following rustic and urban predial servitudes: (a) servitude for searching water (*servitus aquam querendi*): a right to search water in another's land;⁸⁷ (b) servitude for drawing water (*servitus aquae haustus* or *aquae hauriendae*): a right to draw water in another's land (from another's spring, well etc.);⁸⁸ (c) servitude for leading water (*servitus aquaeductus* or *aquae ducendae*): a right to lead water from another's land,

⁷⁴ Cf. Liv. 39,44.

⁷⁵ Dio 49,43.

⁷⁶ Plin. *Ep.* 10,32.

⁷⁷ Front. 91; 108. On Roman baths, see Brödner 1983; Heinz 1983; Robinson 1984, 1065–1082; Yegül 2010.

⁷⁸ Cf. Sen. *Ep.* 86,10.

⁷⁹ Cf. Cic. *Cael.* 26,62; Hor. *Sat.* 1,3,137; Sen. *Ep.* 86,9.

⁸⁰ Cf. Dio 49,43.

⁸¹ SHA *Hadr.* 18; Dio 69,8.

⁸² SHA *Marv.* 23.

⁸³ Cf. Ulp. D. 43,8,2,9; Ulp. D. 47,10,13,7.

⁸⁴ Cf. SHA *Hadr.* 17.

⁸⁵ Cf. Herm. D. 50,4,1,2.

⁸⁶ Cf. Grosso 1932, 401–36; Capogrossi Colognesi 1966; Franciosi 1967; Rodger 1972; Bannon 2001, 34–52; Ibid. 2009; Ehmig 2011, 175–179; Bruun 2015, 145–49.

⁸⁷ Cf. Paul. D. 8,3,10; Lab. D. 8,5,21.

⁸⁸ Cf. Paul. D. 8,1,14,2; Ulp. D. 8,3,1 pr.; Ulp. D. 8,3,3,3; Ulp. D. 8,3,5; Paul. D. 8,3,9; Pomp. D. 8,3,20,3; Paul. D. 8,6,10,1; Pomp. D. 8,6,17; Paul. D. 39,3,17,2.

or across another's land;⁸⁹ (d) servitude for watering cattle (*servitus pecoris ad aquam appulsus*): a right to lead our cattles to another's land to water;⁹⁰ (e) servitude for leading away water (*servitus aquae educendae* or *aquae immittendae*): a right to lead water away from our land to another's land;⁹¹ (f) servitude for leading a sewer (*servitus cloacae imittendae*): a right to lead a sewer under the neighbour's house;⁹² (g) servitude for using another's rain gutter (*servitus stillicidii immittendi*): a right to lead rainwater from our roof to the neighbour's gutter;⁹³ (h) servitude for leading away rainwater collected in the gutter bottom (*servitus fluminis immittendi*): a right to lead rainwater collected in the gutter bottom to the neighbour's land;⁹⁴ (i) servitude for navigation (*servitus navigandi*): a right to cross another's river or lake by boat.⁹⁵

The different servitudes were often connected each other. At creation of a servitude for searching water, the parties agreed that if water would be found, a right to draw water would be due to the authorized party.⁹⁶ The right to draw water always went together with the servitude of footpath (*servitus itineris*).⁹⁷ The servitude for navigation could be attached to the servitude of way.⁹⁸ It seems that the right to water cattle could not be attached to the servitude for leading of cattle (*servitus actus pecoris*), since the right to water could be existed only between neighbouring lands.⁹⁹

In relation to the creation of servitudes we can read in the Institutes of Justinian the following: "*When a landowner wishes to create any of these rights in favour of his neighbour, he should do so by means of pacts and stipulations. By testament too one can impose on one's heir an obligation ... to receive the rain water from a neighbour's pipe, or allow a neighbour a right of ... conducting water over it.*"¹⁰⁰

⁸⁹ This right was included in the four oldest rustic praedial servitudes, beside the right of foot-road, carriage-road and drove-road for cattle (cf. Ulp. D. 8,3,1 pr.; Inst. 2,3 pr.).

⁹⁰ Cf. Ulp. D. 8,3,1 pr.; Pap. D. 8,3,4; Ulp. D. 8,3,5.

⁹¹ Cf. Paul. D. 8,3,29; Ulp. D. 8,5,8,5.

⁹² It is interesting that this servitude is named by Neratius not as an urban but explicitly as a rustic praedial servitude (*servitus praedii rustici*), and this systematization was followed by the compilers of the *Digesta*, too (D. 8,3,2 pr.). In spite of this, the text-books put this right among the urban praedial servitudes (*servitutes praediorum urbanorum*); see, e.g., Földi & Hamza 2001, 359; Molnár & Jakab 2004, 228; Benedek & Pókecz Kovács 2016, 222. Probably, the Romans regarded this right as a rustic praedial servitude, because it was connected with the building which was not in the dominant land.

⁹³ Cf. Paul. D. 8,2,1 pr.; Ulp. D. 8,2,17,3; Paul. D. 8,2,20,3–6; Pomp. D. 8,2,21; Gai. D. 8,4,16; Iul. D. 8,5,16; Paul. D. 8,6,8 pr.

⁹⁴ Cf. Paul. D. 8,2,1 pr. However, there was also such a servitude (*servitus stillicidii sive fluminis non recipiendi*), which just prevented to flow the water from the gutter or gutter bottom onto the neighbour's house or yard (cf. Inst. 2,3,1).

⁹⁵ Cf. Paul. D. 8,3,23,1; Paul. D. 8,3,38.

⁹⁶ Cf. Paul. D. 8,3,10; Lab. D. 8,5,21.

⁹⁷ Cf. Ulp. D. 8,3,3,3.

⁹⁸ Cf. Paul. D. 8,3,23,1; Paul. D. 8,3,38.

⁹⁹ Ulp. D. 8,3,5,1.

¹⁰⁰ Inst. 2,3,4 (tr. J. B. Moyle with modifications).

According to these, servitudes were mostly created by informal agreements, formal contracts, and legacies. It is likely that in case of an informal agreement the servitude was established only by usucapion (in the sources we can often read about the acquisition of right of leading water by usucapion).¹⁰¹ As the right of leading water belonged to the category of *res mancipi*, this servitude originally could be acquired by *mancipatio* or *in iure cessio*. A part of a land could be sold with the reservation that the seller would be able to lead water over the sold area to his rest land,¹⁰² consequently, servitude could be created also by a *deductio*.

Servitude for drawing water could be created also in case of lands between which there was a public area, but to lead water over a public area was possible only with permission of the emperor.¹⁰³ In case of a servitude for leading water the authorized person could put a pipe (*fistula*) made of clay or other material into the bed (*rinus*), and he could lead the water through it,¹⁰⁴ but later he could not change the route of the water.¹⁰⁵

In connection with the right of leading water, a difference was made between the satisfaction of the daily need of water (*aqua cottidiana*) and the satisfaction of the summer need of water (*aqua aestiva*).¹⁰⁶ Depending that in which part of the day could the water be led, daytime water (*aqua diurna*) was distinguished from nocturnal water (*aqua nocturna*).¹⁰⁷

If the spring dried up, the right of leading water expired, but if later the spring revived, the right of leading water also was automatically restored.¹⁰⁸ The servitudes typically expired in consequence of non-use (*non usus*).¹⁰⁹ In case of a servitude for drawing water, if the authorized person went to the spring but did not draw water, he lost by non-use his servitudes both for drawing water and for using a foot-road, too.¹¹⁰ If a person who had a right to lead water at night only did so during the day, he lost his right to lead water because of non-use.¹¹¹

The *praetor* granted special interdicts for protection of the mentioned servitudes. Servitudes for drawing water and for watering cattle were protected by the *interdictum de fonte*. When it was issued, the *praetor* said: "*Insofar as you have used water from the spring in question this year not by force, stealth, or precarium, I forbid the use of force to prevent your using it in this manner.*"¹¹² This *interdictum* could be applied in cases of lakes (*lacus*), wells (*putei*) and fishponds (*piscinae*), too.¹¹³

¹⁰¹ Cf. Ulp. D. 8,5,10 pr.; C. 3,34,2.

¹⁰² Cf. Pomp. D. 8,6,19 pr.

¹⁰³ Cf. Paul. D. 8,1,14,2; Iav. D. 39,3,18,1.

¹⁰⁴ Cf. Pomp. D. 8,3,15.

¹⁰⁵ Cf. Cels. D. 8,1,9.

¹⁰⁶ Cf. Pomp. D. 8,3,15; Ulp. D. 43,20,1,3; Ner. D. 43,20,6.

¹⁰⁷ Cf. Paul. D. 8,6,7; Pomp. D. 43,20,2.

¹⁰⁸ Cf. Paul. D. 8,3,35.

¹⁰⁹ Cf. Paul. D. 8,6,7.

¹¹⁰ Cf. Pomp. D. 8,6,17.

¹¹¹ Cf. Paul. D. 8,6,10,1.

¹¹² Ulp. D. 43,22,1 pr. (tr. A. Watson).

¹¹³ Ibid.

The right to leading of daily water was protected by the *interdictum de aqua cottidiana*, the right to leading of summer water was protected by the *interdictum de aqua aestiva*. In the former case the *praetor* drew up as follows: "Insofar as you have this year drawn off water in question not by force or stealth or *precarium* from such a one, I forbid force to be used to prevent you from drawing it off in this manner."¹¹⁴ In the latter case the *praetor* said: "Insofar as during the previous summer you drew off from such a one the water in question not by force or stealth or *precarium*, I forbid the use of force to prevent you drawing it off in this manner."¹¹⁵ It was considered that summer lasted from the spring equinox to the autumn equinox, which meant in this way six months altogether.¹¹⁶ These interdicts protected the right of leading water both outside and inside a city.¹¹⁷ The water could be led from a spring (*ex fonte*), a lake (*ex lacu*) or a river (*ex flumine*).¹¹⁸ The water could be led not only for irrigation of plants and watering of animals but also for amenities.¹¹⁹ The *praetor* granted both interdicts for heirs, buyers, and *bonorum possessores*, too.¹²⁰

The *interdictum de aqua ex castello ducenda* served for protection of the right of leading water from the water tank (*castellum*) which was connected with the public aqueducts. In his *edictum* the *praetor* drew up as follows: "Where such a one, who had a right to it, was permitted to draw off water from that water tank, I forbid the use of force to prevent him from drawing it off as he is permitted to do."¹²¹ Water could be led from the water tank only with the permission of the emperor.¹²²

The person who had right to lead water could repair and clean the bed (*rivus*) of the water: this right was protected by the *interdictum de rivis*. Granting this legal remedy the *praetor* said: "I forbid the use of force to prevent such a one from repairing (*reficere*) or cleaning (*purgare*) for the purpose of drawing off water (*aquae ducendae causa*), watercourses (*rivi*), culverts (*specus*), or sluices (*septa*), provided that he does not draw off water in any other way than he drew from you last summer not by force, stealth, or *precarium*."¹²³ The person who wished to lead the water in a stone channel instead of an earthen one could not claim this legal remedy, since he not only repaired the bed.¹²⁴ Neither such a person got help from the *praetor*, who deepened or broadened the bed, or covered the open course, or opened the covered one, since he wanted to lead the water not in the same way as he formerly did it.¹²⁵

The person who was hindered by force from repairing or cleaning of a sewer could claim from the *praetor* to issue the *interdictum de cloacis*. In this case the *magistratus* drew up as follows:

¹¹⁴ Ulp. D. 43,20,1 pr. (tr. A. Watson).

¹¹⁵ Ulp. D. 43,20,1,29 (tr. A. Watson).

¹¹⁶ Ulp. D. 43,20,1,32.

¹¹⁷ Ulp. D. 43,20,1,14.

¹¹⁸ Ulp. D. 43,20,1,8.

¹¹⁹ Ulp. D. 43,20,1,11; Pomp. D. 43,20,3 pr.

¹²⁰ Ulp. D. 43,20,1,29; Ulp. D. 43,20,1,37.

¹²¹ Ulp. D. 43,20,1,38.

¹²² Ulp. D. 43,20,1,42, cf. Orestano 1935, 297–313; Palma 1987, 439–457.

¹²³ Ulp. D. 43,21,1 pr. (tr. A. Watson).

¹²⁴ Ulp. D. 43,21,1,10.

¹²⁵ Ulp. D. 43,21,1,11.

"I forbid the use of force to prevent you from cleaning and repairing the drain in question, which reaches from his house to yours."¹²⁶ The *praetor* compelled the party who repaired and cleaned the sewer to promise to pay a caution (*cautio damni infecti*) for the case of damage which could be caused by his work.¹²⁷

5. The problems of damage caused by rainwater in the field of neighbouring rights

In Rome, because of the many hills, the problems related to the flowing down of the rainwater could frequently occur. The Law of the Twelve Tables already contained some kind of disposition connected with damage caused by the rainwater; only these words remained for us from the text: *'si aqua pluvia nocet'*, namely, 'if damage is done by rainwater'.¹²⁸ These words are cited by Pomponius, who writes that "the old authorities interpreted the words of the Twelve Tables 'if damage is done by rainwater' to mean 'if damage could have been done.'"¹²⁹

The text-books of Roman law mention the civil law action named *actio aquae pluviae arcendae* among the neighbouring rights, or among the legal instruments of property protection.¹³⁰ Ulpian says the following: "*If rainwater is going to cause one injury, it can be averted by means of an action to ward off rainwater. We define 'rainwater' (aqua pluvia) as water which falls from the sky and is increased in quantity by a rainstorm, whether, as Tubero says, such water from the sky causes damage by itself or in conjunction with some other body of water. This action is appropriate where no injury has yet been caused, but work of some sort has been carried out, that is, work from which injury is apprehended. The action is appropriate whenever water is likely to cause damage to a field as a result of a man-made construction, that is, whenever someone causes water to flow elsewhere than in its normal and natural course, for example, if by letting it in he makes the flow greater or faster or stronger than usual or if by blocking the flow he causes an overflow. But if the water causes damage naturally, the case is not covered by this action.*"¹³¹

The action could be brought by both the owner of a higher land and the owner of a lower land against his neighbour. As Ulpian writes, "*it must be understood that this action is available both to the owner of a higher piece of land against the owner of a lower piece to stop the latter carrying out work to prevent naturally flowing water passing down through his own field and to the owner of a lower piece of land against the owner of a higher piece to stop the latter causing the water to flow other than naturally.*"¹³²

¹²⁶ Ulp. D. 43,23,1 pr. (tr. A. Watson).

¹²⁷ Ibid.

¹²⁸ XII tab. 7,8a.

¹²⁹ D. 40,7,21 (tr. A. Watson).

¹³⁰ Cf. Földi & Hamza 2001, 292, 355; Molnár & Jakab 2004, 225; Nótári 2011, 189, 216; Benedek & Pókecz Kovács 2016, 180. For more details about this action, see Schönbauer 1934, 233–257; Sargenti 1940; Watson 1968, 155–175; Sitzia 1977.

¹³¹ D. 39,3,1 pr.–1 (tr. A. Watson).

¹³² D. 39,3,1,13 (tr. A. Watson).

In course of the lawsuit, the restoration of the original condition and the compensation of the damages which had occurred since the *litis contestatio* could be demanded. According to the opinion of Ulpian, "*The duty of the judge will be to order the restoration to its original condition of any work carried out by a neighbor and the making good of any injury which has occurred since the joinder of issue.*"¹³³

There was a different situation, if the work in question was carried out not by the land owner. According to the report of Ulpian, "*Celsus writes that if I myself carried out some work which results in rainwater causing you injury, I am to be compelled to remove the said work at my own expense, but that if it was somebody else who has no connection with me who did the work it is sufficient for me to permit its removal. But if it was a slave of mine or someone whose heir I am who did the work, than in the case of the slave, I must surrender him noxally, and in the other case, the situation is exactly as if I did the work myself.*"¹³⁴

In certain cases an omission of the owner of a lower land could be a cause for bringing the action. Ulpian writes as follows: "*In Labeo, the following case is proposed: There was an old ditch constructed for the purpose of draining fields, but no record existed of when the construction occurred. The neighbor occupying the land below us failed to keep it clear. As a consequence, it overflowed, and the water damaged our property. Labeo says that an action to ward off rainwater can be brought against the owner of the lower property to ensure that he either cleans the ditch himself or permits you to restore it to its previous condition.*"¹³⁵

The action could be brought also against a co-owner. Hence, writes Ulpian, "*there arises this question: If water from a field belonging solely to you causes damage to a field owned jointly by you and me, can an action to ward off rainwater be brought? I would think that it can with the proviso that only part of the injury be paid for by the losing party.*"¹³⁶

Originally, a usufructuary could be neither a plaintiff nor a defendant of the action: "*A usufructuary cannot bring an action to ward off rainwater or have one brought against him*", writes Ulpian.¹³⁷ Later a usufructuary *utiliter* could bring the action which was granted also against him.¹³⁸ The action was not available in the following cases: (1) if not a human activity but the site of the lands caused the damage,¹³⁹ (2) if the water which caused the damage was not rainwater,¹⁴⁰ (3) if not a field but a building was damaged,¹⁴¹ (4) if the work which changed the natural flowing down of rainwater was necessary for the cultivation of a field,¹⁴² (5) if the work was carried out with the permission of the damaged party,¹⁴³ (6) if the work was carried out on the order of the emperor or the senate,¹⁴⁴ (7) if the work was carried out on public land.¹⁴⁵

¹³³ D. 39,3,6,6 (tr. A. Watson).

¹³⁴ D. 39,3,6,7 (tr. A. Watson).

¹³⁵ D. 39,3,2,1 (tr. A. Watson).

¹³⁶ D. 39,3,6,2 (tr. A. Watson).

¹³⁷ D. 39,3,3,4 (tr. A. Watson).

¹³⁸ Cf. Pomp. D. 39,3,22.

¹³⁹ Ulp. D. 39,3,1,1; 39,3,1,10; 39,3,1,14–15.

¹⁴⁰ Ulp. D. 39,3,3,1.

¹⁴¹ Ulp. D. 39,3,1,17; 39,3,1,21.

¹⁴² Ulp. D. 39,3,1,3; 39,3,1,8; 39,3,1,15.

¹⁴³ Paul. D. 39,3,9,1; Pomp. D. 39,3,19.

¹⁴⁴ Paul. D. 39,3,23 pr.

Bibliography

1. Aldrete G S (2007) *Floods of the Tiber in Ancient Rome*, The John Hopkins University Press, Baltimore.
2. Ashby T (1935) *The Aqueducts of Ancient Rome*, Clarendon Press, Oxford.
3. Bajánházy I (2000) Sana aqua – bona aqua. A vízvezetékek a római jog tükrében, in: Szabó B & Sáros P, ed. (2000) „*Dum spiro doceo*”. *Ünnepi tanulmányok Huszti Vilmos 85. születésnapjára*, Bíbor Kiadó, Miskolc, pp. 75–98.
4. Bannon C J (2001) Servitudes for Water Use in the Roman 'Suburbium', *Historia* 50(1), pp. 34–52.
5. Bannon C J (2009) *Gardens and Neighbors. Private Water Rights in Roman Italy*, University of Michigan Press, Ann Arbor.
6. Bannon C (2017) Fresh Water in Roman Law. Rights and Policy, *The Journal of Roman Studies* 107, pp. 60–89, doi:10.1017/S007543581700079X
7. Benedek F & Pókecz Kovács A (2016) *Római magánjog*, 4. kiadás, Dialóg Campus Kiadó, Budapest–Pécs.
8. Brödner E (1983) *Die römischen Thermen und das antike Badewesen*, Wissenschaftliche Buchgesellschaft, Darmstadt.
9. Bruun C (1991) *The Water Supply of Ancient Rome. A Study of Roman Imperial Administration*, Societas Scientiarum Fennica, Helsinki.
10. Bruun C (2012) Roman Emperors and Legislation on Public Water Use in the Roman Empire. Clarifications and Problems, *Water History* 4(1), pp. 11–33.
11. Bruun C (2015) Water use and productivity in Roman agriculture: selling, sharing, servitudes, in: Erdkamp P, Verboven, K & Zuiderhoek A, ed., *Ownership and Exploitation of Land and Natural Resources in the Roman World*, Oxford University Press, Oxford, pp. 132–149.
12. Campbell B (2012) *Rivers and the Power of Ancient Rome*, The University of North Carolina Press, Chapel Hill.
13. Capogrossi Colognesi L (1966) *Ricerche sulla struttura delle servitù d'acqua in diritto romano*, Giuffrè, Milano.
14. Costa E (1919) *Le acque nel diritto romano*, Zanichelli, Bologna.
15. De Kleijn G (2001) *The Water Supply of Ancient Rome. City Area, Water, and Population*, J. C. Gieben, Amsterdam.
16. Diószdi Gy (1973) *A római jog világa*, Gondolat Kiadó, Budapest.
17. Ehmig U (2011) Überlegungen zu den Regenwasser-Servituten, *Revue internationale des droits de l'antiquité* 58(3), pp. 175–179.
18. Evans H B (1982) Agrippa's Water Plan, *American Journal of Archeology* 86, pp. 401–411.
19. Evans H B (1994) *Water Distribution in Ancient Rome. The Evidence of Frontinus*, The University of Michigan Press, Ann Arbor.
20. Fenn P T Jr (1925) Justinian and the Freedom of the Sea, *The American Journal of International Law* 19(4), pp. 716–727.
21. Fiorentini M (2003) *Fiumi e mari nell'esperienza giuridica romana*, Giuffrè, Milano.

¹⁴⁵ Ulp. D. 39,3,3,3; Iav. D. 39,3,18 pr.

22. Földi A & Hamza G (2001) *A római jog története és intézményei*, 6. kiadás, Nemzeti Tankönyvkiadó, Budapest.
23. Franciosi G (1967) *Studi sulle servitù prediali*, Jovene, Napoli.
24. Geißler K (1998) *Die öffentliche Wasserversorgung im römischen Recht*, Duncker & Humblot, Berlin.
25. Grosso G (1932) Sulla servitù di aquae haustus, *Bulletino dell'Istituto di Diritto Romano* 40, pp. 401–436.
26. Hainzmann M (1975) *Untersuchungen zur Geschichte und Verwaltung der stadtrömischen Wasserleitungen*, Verband der wissenschaftlichen Gesellschaften Österreichs, Wien.
27. Heinz W (1983) *Römische Thermen. Badewesen und Badeluxus*, Hirmer Verlag, München.
28. Herschel C (1913) *The Two Books on the Water Supply of the City of Rome of Sextus Julius Frontinus*, 2. kiadás, Longmans, Green, and Co., London, 1913.
29. Hinker H (1992) Grundzüge des öffentlichen römischen Wasserrechts, in: Klingenberg G, Rainer J M & Stiegler H, Hrsg., *Vestigia Iuris Romani. Festschrift für Gunter Wesener zum 60. Geburtstag am 3. Juni 1992*, Leykam Buchverlag, Graz, pp. 177–185.
30. Hodge A T (1991) *Roman Aqueducts and Water Supply*, Duckworth, London.
31. Hopkins J (2007) The Cloaca Maxima and the Monumental Manipulation of Water in Archaic Rome, *The Waters of Rome* 4, pp.1–15.
32. Longo G (1934) Sull'uso delle acque pubbliche in diritto romano, in: Albertario E, ed., *Studi in memoria di Umberto Ratti*, Giuffrè, Milano, pp. 55–93.
33. Molnár I & Jakab É (2004) *Római jog*, 3. kiadás, Leges Kiadó, Szeged.
34. Nótári T (2011) *Római köz- és magánjog*, Lectum Kiadó, Szeged.
35. Orestano R (1935) Concessione personale e concessione reale dello ius aquae ducendae ex castello (contributo all'esegesi del fr. I. 38–43 D. 43.20 di Ulpiano), *Bulletino dell'Istituto di Diritto Romano* 43, pp. 297–313.
36. Palma A (1987) Le derivazioni di acqua ex castello, *Index* 15, pp. 439–457.
37. Panimolle G (1968) *Gli acquedotti di Roma antica*, Abete, Roma.
38. Peachin M (2004) *Frontinus and the curae of the curator aquarum*, Franz Steiner Verlag, Stuttgart.
39. Plescia J (1993) The Roman Law on Waters, *Index* 21, pp. 433–451.
40. Póczy K (1980) *Közművek a római kori Magyarországon*, Műszaki Könyvkiadó, Budapest.
41. Robinson O F (1980) The Water Supply of Rome, *Studia et documenta historiae et iuris* 46, pp. 44–86.
42. Robinson O F (1984) Baths. An Aspect of Roman Local Government Law, in: Giuffrè V, ed., *Sodalitas. Scritti in onore di Antonio Guarino 3*, Jovene, Napoli, pp. 1065–1082.
43. Robinson O F (1992) *Ancient Rome. City Planning and Administration*, Routledge, London–New York.
44. Rodger A (1972) *Owners and Neighbors in Roman Law*, Clarendon Press, Oxford.
45. Sargenti M (1940) *L'actio aquae pluviae arcendae*, Giuffrè, Milano.
46. Schönbauer E (1934) Die actio aquae pluviae arcendae, *Zeitschrift der Savigny-Stiftung für Rechtsgeschichte, Romanistische Abteilung* 54, pp. 233–257.

47. Shipley F W (1933) *Agrippa's Building Activities in Rome*, Washington University Press, St. Louis.
48. Sitzia F (1977) *Ricerche in tema di 'actio aquae pluviae arcendae'. Dalle XII tavole all'epoca classica*, Giuffrè, Milano.
49. Terrazas Ponce J D (2012) La tutela jurídica del agua en el Derecho Romano, *Revista Chilena de Derecho Romano* 39(2), pp. 371–409.
50. Van Deman E B (1934) *The Building of the Roman Aqueducts*, Carnegie Institution, Washington.
51. Ware E F (1905) *Roman Water Law*, West Publishing Co., St. Paul, Minn.
52. Watson A (1968) *The Law of Property in the Later Roman Republic*, Oxford University Press, Oxford.
53. Weiß E (1925) Die Rechtsschutz des römischen Wasserleitungen, *Zeitschrift der Savigny-Stiftung für Rechtsgeschichte, Romanistische Abteilung* 45, pp. 87–116.
54. Yegül F K (2010) *Bathing in the Roman World*, Cambridge University Press, New York.