"The Withdrawn Sea" Urbanistic Paradigm of Mediterranean Cities: Role/Meaning/Function

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mare! a nominarlo,
entra nei miei pensieri |
folata che forza un'imposta!"
[Camillo Sbarbaro]

FOREWORD

The forces governing the "rights" and the conflicting interests of the earth and the sea in the relationship between *gea* and *thalassa* is an age-old conflict: a physical and literary *topos* mediated by a *lingua franca*, made of stone and of different civilizations. We are obviously talking about the *Mediterranean city*[1].

Cosmogony and *hierophany*, handed down in traditional and pre-modern cultures, show the intimate link between Cosmos and Chaos[2], whose intensity and permanence have permeated the lives, the customs and the visual and spatial experiences of Mediterranean populations[3].

In the Mediterranean, two cultures met and clashed. They had experienced the sea from vastly different perspectives due to their diverse approaches and mindsets. Even Hesiod, in *The Theogony*, recalls how *Pèlagos, plaga (lat.)*, i.e. 'water plane', is an expanse "*without sweet union of love*"[4].

"Sea", where the deity appears as a terrifying threat to Man. The ancient Mediterranean sea gods show indifference, or even more often are hostile towards activities carried out on the sea or on its shores. At the height of its development and domination of maritime trade, the Greek-Mycenaean civilization venerated the cult of *Poseidon [ποσειδῶν], numen* of sea and horses. At first superior even to Zeus, he transformed himself into a god of conflict, having lost his primacy

in the Cosmos. His resentful and wicked nature toward humans is revealed in outbreaks of chthonic elements and forces: his epithet was *έ(ν)νοσίγαιος* ("earth shaker"), cause of earthquakes and cataclysms. Although known by a different name in the Mediterranean[5], the god of the sea showed a common trait in his hot-tempered and greedy temperament, placated and satisfied only by sacrifices and festivals [*Geroèstie*] in his honour[6].

1. Forests, freshwater, brackish water

The Indo-European civilisation established a mediate, wakeful and suspicious relationship with the sea. In proto-history and in the Iron Age, settlements appear totally detached within the territory, and mostly developed by lakes, rivers or lagoons[7].

For a long time, sheep-farming and forestry formed the basis of the economy. Agriculture played a marginal role compared to more lucrative activities such as fishing and hunting. The Italic territory of the Po Valley and its foothills and of the Apennines had a wealth of energy and food resources.

It is clear how, from an ethno-cultural perspective, the preferred location for settlements and for religious worship was close to rivers, ponds and springs with cattle water. In the popular imaginary, evidence of hierophantic influences intensified in these places[8]. The *Furrina/Feronia/Foris* cult refers to the gathering of nymphs and favourable female deities.[9]

Also the Italic deities – attributed to the cult of the sea at a later date – emerged in the world of forests, along rivers and around wells[10]. This intimate link between earth and sky, between divine and human affairs took place in the sacred *lucus* grove, literally *"glade where the sunlight shines"*, in an uncertain and mysterious dimension, where anything is possible. In the ancient region of Lazio, *Consus* was the chthonian god that ruled the awakening of the Earth and the fertility of living things: later on, he was known as *Neptunus equestris*, 'protector of horses', in the festivals held in his honour in July (*Neptunalia*), on the banks of the Tiber. In the same way, the Etruscan *Nethuns* can be traced back to Indo-European roots **neph,* i.e. that which is humid, wet (or that wets)[11].

2. Mediterranean city: settlement and port system.
A controversial relationship

> *"Mars, Mars, bane of men, bloodstained | stormer of cities, may we not now leave the Trojans and Achaeans to|fight it out, and see to which of the two Jove will vouchsafe the |victory? Let us go away, and thus avoid his anger."*
> *(Iliad, Book V, 31-34)*[12]

The particular nature of the Mediterranean climate – in an environment poor in resources – on the one hand encourages peopling and settlement, while on the other conditions and constantly limits expansion. The Greeks of the islands and of the Peloponnese were forced to emigrate or condemned to hardship: hence "the sea route" was the only possible option to escape the permanent unrest of city-states, ostracism and exile [φυγή]. The journey [πορεία] is a mythical dimension which leads to colonial establishment [ἀποικία][13].

Historia [ιστορία] literally means "visual inspection", which fits perfectly into the πορεία experience as a way for individuals and groups to obtain goods and seize opportunities by leaving the *fatherland*. It represents a risky and unpredictable situation, which requires attention and prudence, fearlessness and fortitude, as in the case of the 'lookout', the sentry who is responsible for the safety of the ship, the watchful observation of the guide and of the sentinel.

Likewise, the narration [ἔπος] of the sailor/warrior – subject to poetic alteration by the poet – constantly encounters and challenges the strict codification of written constitution [πολιτεία], expressed as laws [νόμος] and rules [κανών]. The same conflict can be seen in the spatial structure of the *polis*, where the accepted and recognised order of the *Hippodamian* plan[14] contrasts with the place of temporary arrangement par excellence, the docks.

This same arrangement can be found almost intact in the ancient urban structure of naples [*Nea-Polis*] where its footprint has remained intact over the years. Built *"per strigas"*, longitudinal "strips" similar to the agricultural terraces, the colonial city is organised in a series of orderly roads of the same size, which mark out long blocks made of two neighbouring building units linked together by ramps and stairs. The measurements of 3 *plateiai* and 20 *stenopoi* which fit perfectly with the hilly nature of the site can still be read[15]. A simple and effective system which wholly reproduces ancient and medieval Mediterranean landscape, with a few variations and adjustments, due to orographic needs and features.

In this *'kaos ordinato'* [arranged chaos] of the port , we again encounter the belligerent *Ares* [Άρης] ruling and protecting the activity[16]. Since the Archaic Age in the Hellenic culture, the city and the port were clearly separate formal and symbolic units. The refined Greek linguistic articulation marks the distance between the place of the rules [πόλις] and the line of their disappearance [λιμήν].

This distinction is still present today in the toponymy of colonial settlements[17] in the same way as the ambiguous semantic proximity and assonances

between Greek and Latin, which is clearly due to the different reference environmental conditions. The Greek description of the Adriatic world, in Virgil's *Aeneid*, Book VI [18], depicts a place of cold vaporousness, threatening unsafety, and demonstrate the difficulty of defining an unknown landscape of water and land in conventional terms and images.

The peoples of the "Evening lands" were culturally backward with respect to the refined Greek culture but they had solid economic skills: they acted as intermediaries in the trade of goods and foodstuff[19] to their mutual advantage. They also proved willing and ready to embrace Mediterranean customs and rituals, with an a welcoming attitude to a new religious, symbolic and iconic universe[20].

The persistent nature of archaic "primary" silt constructions is demonstrated in both the layout of settlements and in the buildings of coastal Italic people throughout the entire Bronze Age. It is easy to guess that this was due to the preservation of lake sites and plane forests in the main part of the Po Valley area. This can be seen in the vegetal truss framework of large multi-dwelling huts of *Terramare* in the Po Valley[21] arranged in parallel rows of quadrangular houses, which, according to a plan not dissimilar to the Greek one, faces North-South along an orthogonal axis.

These entities were socially organized into patriarchal forms and family groups enlarged to clans, which established intimate and intensive trade relations in a balanced system of farm culture and commercial trade, as well as cultural contacts developed well beyond the Alps, across continental Europe, up to the Baltic Sea. In its primary form, this pattern appears again at the mouths and estuaries of the large rivers of the Po Valley, where residential and docking requirements tend to coincide in the "dock-house", [Ven.: *teggia/tezza/tensa*], the functional nature of which have been maintained in Venice and Chioggia in the Kontor houses characterized by the *"Porta d'acqua" [Doors of water]*.

A comparative analysis of the term "port" is also interesting: in Greek λιμήν [*port, seaport*] corresponds to the Latin *portus* [πορόσ, 'ford']. In the latter, the reference to the river environment, to locations where herds and wayfarers can easily cross is clear. Not unlike the organisation of the inner port, whose function is expressed as a 'pass', i.e. the use of ferry [*porthms*]. The symbolic value of crossing water on boat is often recalled when identifying the ancient Po Delta with the *Styx Marsh (lament river)*, a crossing to the Kingdom of Shades[22].

The homophony of λιμήν with the Latin *limen-limina* is equally revealing, indicating the *threshold,* the *principium,* the access from a public place to a private property, in any event a place of refuge and shelter[23]. The meaning of *limes* is completely the opposite, a fortified and guarded boundary translated into Greek with ὅρος ['mountain ridge']. These differences are not random. They are visible in the economic-political and cultural forces driving the slow and restorative continental rural world on river mouths. In this crossroads of flows, Italic tribal traditions interweave with the cultural *vis* of merchants.

The fortune of the settlements is influenced by the environment and by the strength and dynamism of its rivers. The renowned succession of hydro-geological disasters in the Peninsula are part of a cycle of events, which over the centuries, due to natural causes or human intervention have changed urban structures and coastal profiles. Well-known examples of historic settlements of great interest include the historical evolution of the inhabitants of the antique port cities of *Hatria* (Adria)[24] and of *Genua* (Genoa), where the point of contact settlements conceived b y the Greeks and the Italians can be clearly seen. Developed at the mouths of an ancient branch of the Po and of the Bisagno[25], early multicultural cultures managed to create and consolidate *ante litteram* intermodal trade hubs between waterways, the continent and Mediterranean shipping routes.

Although the gradual siltation of the port of Adria led to the decline of maritime trade, it did not obscure cultural prestige and civil pride; this is true of Ravenna, which has continued a lively trade un until the present day[26]. However, these are rare examples: as demonstrated by the urban ups and downs of many Roman port cities – *Luni*, at the mouth of Magra[27], *Hadriani* (Ariano Polesine)[28], *Aquileia* at *Natissa*[29] – or other Mediaeval ones – *Pomposia* in the abbatial *insula* between the Po of Volano and Primaro[30] – which lost their economic functional importance due to hydro-geological instability or natural siltation. These are partially extinct urban entities, which have been maintained through archaeological discoveries and to settlements of religious communities/institutions.

The Genoese case highlights the importance of the strategic-economic role of the port regardless of objective difficulties in maintaining maritime trade and functions. This is demonstrated by its continuous use over the centuries, despite the significant changes in the location of both infrastructure and settlements[31]. Firstly, the abandonment of favourable natural sites, which tended to silt up (mouth of the Bisagno mouth), in favour of "open" coastal sites; sea beds free from deposits, although exposed to violent sea storms and in need of defence, were able to guarantee lower maintenance costs due to excavation.In Genoa and Trieste as well as in other ports built in the Pre-Roman era and developed in the Early Middle Ages, the construction of the *Mandracium*, genuine *natura artificialis*, was a good solution to enable populated settlements to thrive, where agricultural hinterlands were not able to meet the demand for food and thus were totally or partly dependant on external food supplies. The imperial Roman constructive *sapientia*, a sign of the continuity of τέχνη, made it possible to perform activities that for the most part were outdoors, at the mercy of the elements, although subject to adjustments and maintenance. It should be noted that it was only in the Late Middle Ages that urban settlements tended to move closer and sometimes to envelop the port as a sort of second foundational establishment of the city itself[32], also deriving its prerogatives as regards military defence. Communities

and their ports have often experienced separate and conflicting histories, clearly demonstrated by the urban ups and downs of Ligurian cities clinging to high grounds, far from the sea, plagued by hostile presence even well beyond the Modern Age[33].

4. "Port". Sense, sensibility, place

At the dawn of Roman civilization the Italic god *Portumnus* was the protector of river ports, of bridges, of fords and of water crossings in general. The cult of the god, son of *Mater Matuta*, "dawn goddess"[34] (Aurora), is founded on the need for intercession and benevolence in order to boost economic prosperity and wealth in trade[35]. The ancient semantic persistence (*ob Portunus*) is reflected in the Italian language with the adjective "*opportuno*" [opportune] meaning "gaining an advantage, a favour", and in its opposite. In the old town, the contrast between economic spaces and holy places is clear: the archaic memory of *Portuno* merges with the later cult of *Fortuna Virile*. The ancient temple that stood in Rome close to the older *Tibernius Port* [*Forum Boarium/Pons Aemilius*][36]. The fact that the port was a place where very diverse and sometimes marginal social groups would gather is demonstrated by the lengthy surrounding the construction of the temple[37].

The re-location of the imperial port to *Hostia*, at the mouth of the Tiber, demonstrates the need, both functional and in terms of public order, to locate a vital infrastructure, although still problematic from a strategic, healthy and social point of view – as close as possible, but sufficiently far from places of power. The complex construction of the first port facilities (Harbour of Claudius, about 62 BC) highlighted the engineering limitations of a site that was too exposed to sea storms, so much so that the construction of a second basin was needed (hexagonal Port of Trajan, 100-112 AD), much further back from the coast[38]. The fortunes of Ostiense are reflected in the birth, development and decline of a vibrating multicultural centre, which was totally dependent on the fortunes of the port infrastructure.

5. A typological interpretation of the Mediterranean city

An ontogenic interpretation of the city – its development according to biological paradigms – ranges from the cultural archetypes of Western history to recent events in the debate on *water-front* facilities. In this perspective, we wish to highlight how the Mediterranean city is a place where contradictions and conflicts that cannot be resolved elsewhere can be resolved: a digesting organism, where everything is transformed and "*tout se tient*".

In the Mediterranean city, the result of the *settlement-port-emporium* trinomial, well identified urban structures and functional buildings maintained sepa-

rate over time, are reproduced in an almost standardized way. Unlike what happens in cities on the mainland, their urban development, rather than settling "on the ground", tends to:

a. *aggregate* and *grow in population* in a space confined by the morphology of the site, similar to that which occurs to marine biological structures [*reef city*] through a mechanism of *porous macro-organic concentration* (as in the cities of Naples, Trieste, and Genoa). In this case, the traditional city partially evolves and renews its physical and social habitat, through the steady entrance – and turnover – of heterogeneous and multicultural minorities and sometimes marginal groups;

b. "return to a sea-front position" [*demotion effect*] caused by a process of progressive siltation of marine surfaces and progress of the coast line (as for Trieste);

c. lose functional vitality [*empty shell effect*] through a purely conservatory mechanism of physical structures and weakening or extinction of the original ones (as for Venice or other towns in Liguria i.e. Portofino, Portovenere and Cinque Terre).

A case study: Androna Campo Marzio, Trieste

Interesting conclusions on urban development resulting from fluvial and maritime expanses of water can be drawn from the studycarried out on the apparently insignificant area of *Androna Campo Marzio*, in the city of Trieste[39]. As we know, this is an urban *enclave*, currently comprised of buildings for the service sector, previously used by Lloyd Adriatico and now the main location of the Faculty of Arts. The study, which has still not been published, chronicles the urban development of the area of the ancient *Lazzaretto* based on descriptions in (or reconstructions of) the paintings of Pietro Kandler (1856)[40].

A complex network of economic-political choices underlying the construction, progress and modelling of Trieste's shoreline, focused on the old *Molo della Sacchetta* emerges from the study. The process of topographic (and "topologic") "re-modelling" of the site encompasses or better "colonizes" the hills and the waterfront in a general extra-territorial expansion plan. The facilities for 'isolation and care' (the *Lazzaretto*) created on areas extracted from the sea (former saltpan) created the conditions for its military use (barracks) at first and then civil use (market). In the background, Trieste as a fundamental pawn in the balance of the European chessboard: a city compressed into a small territory, but with a vocation and a strategic plan at continental level. Promises and aspirations which were partially fulfilled and interrupted several times: this explains, but only partially, the assumption and the failed "digestion" of marginal areas in the urban

fabric. The case of Androna Campo Marzio demonstrates its patchy but selective nature.

We believe that here the line of λιμήν, the "fault" or threshold takes shapes, that immaterial border separating settlements from the port system. These are precisely the conditions for the creation of the grey zone, the anti-city, resisting the assimilation of the urban logic *tout court*. Its specific nature today appears as a peculiarity to be safeguarded, rather than a singularity or marginality to be amended: keeping this tension alive means giving a fascinating and archaic world, the ambiguous and uncertain territory of *Portumnus,* the opportunity to survive.

Conclusions

Borrowing a fitting analogy from the biologist Ernst Haeckel[41] (1834-1919), in the Mediterranean city very important disruptive processes have emerged or have become more conspicuous over the past century. They have undermined time-honoured balances: in them, the artefacts and structures that are considered "obsolete" and thus "lacking" in urban competition, are destined to be removed and to be "swallowed up" by larger organisms or, in a best-case scenario, to slowly change their own identity and form.

This phenomenon can be found for instance in the problems entailed in reusing industrial or storage facilities, abandoned due to the loss of primary position with respect to the location of the docks. A case in point is the large military infrastructures of the Shipyards (Venice, Trieste, Barcelona, Valencia, Zadar etc.)[42]. The interface between port and city is in constant conflict[43] and urban restoration projects are rarely able to resolve or lessen the effects[44] also in terms of the "security" currently required by maritime companies, at passenger terminals of Mediterranean port cities[45].

The "withdrawal" of the sea, namely the advancement of the coastline, is a natural phenomenon that is more or less accelerated by hydro-geological dynamics, but that, in any event, is relentless. The build-up of fluvial sediments at the outlets and the subsequent coastal replenishment due to sea currents, continuously re-design and model the coast.

The increase of surfaces, which have emerged owing to natural or anthropic events, in urban frameworks and during the morpho-typological development of settlements, marks unsolved conflicts alternated with victories and losses between the various economic players. With respect to the past, now the continental world is stronger, more dynamic and pervasive than the maritime world, which has been in a state of decline and regress for at least a century. New waterfront infrastructure projects, if undertaken with determination and continuity, can achieve positive results, which can be transferred even to the most degraded building and social fabric.

The recovery of the *Porto Antico di Genova* can be compared, although to a lesser degree, to the regenerative work which entailed constructing a Large Library in the ancient port of Alexandria[46]. From many aspects, the *urban phylogenesis* of the case of Trieste is exemplary of urban events that took place with different intensities and to different extents in the whole Mediterranean Basin. The example of Trieste provides evidence of a process of expansion developed at the expense of the sea, the fate and direction of which could change very rapidly with climate changes. If the already "withdrawn" sea were to regain its original space, as has already happened in history, a large part of the constructions built by man on the coast and on inland areas that have been "reclaimed" over thousands of years by man and nature, would be submerged. Similarly, the sea could return to washing the shores of many ancient port cities, currently buried.

Even today we can witness the devastating effects of rivers drained for agricultural irrigation. By reducing the flow of freshwater, especially during prolonged dry spells, saltwater is able to flow upstream towards the inland areas (a phenomenon known as "saltwater inclusion")[47].

The Mediterranean port cities encompass countless tensions and contradictions: the traditional ones due to global socio-cultural conflicts combine with the vulnerabilities generated by natural agents. A glance to the past helps us to seek good sense and careful planning even though we are looking at a future fraught with uncertainty.

1.a

Gaia | Gea

1.b

Mater Matuta and *Portumnus*

2.a

Ares | Mars

2.b

Neptunus | *Poseidon* (Neptune), Mosaic of
Poseidon and his Sea-Chariot, Therm of Ostia

2.c

Feronia| Furrina, *"Dea Agrorum et Inferorum"*
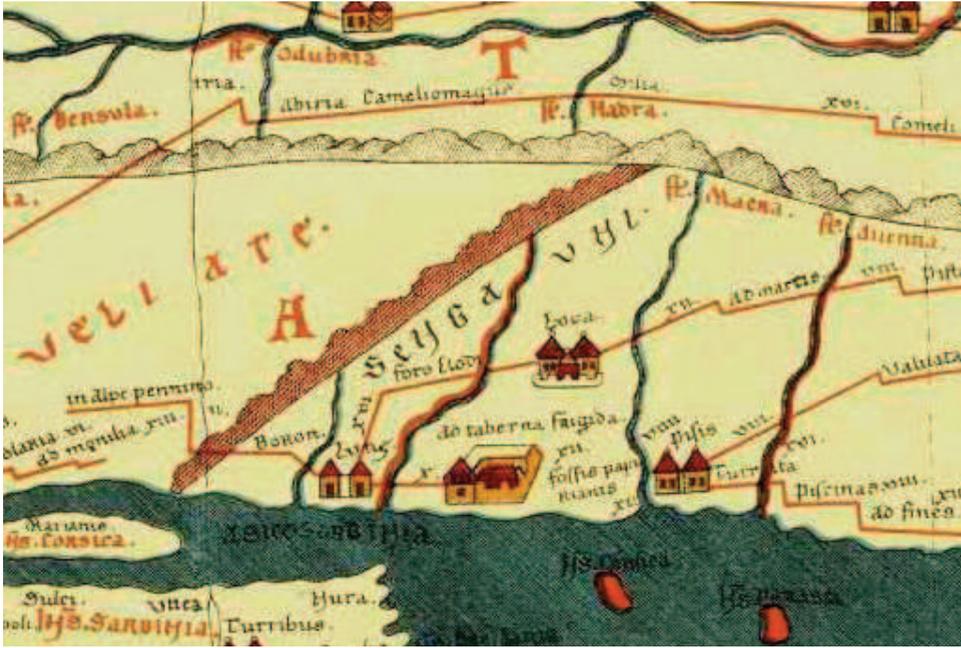
3.a
Tabula Peutingeriana, Luni

3.b
Tabula Peutingeriana, Aquileia | Tergeste
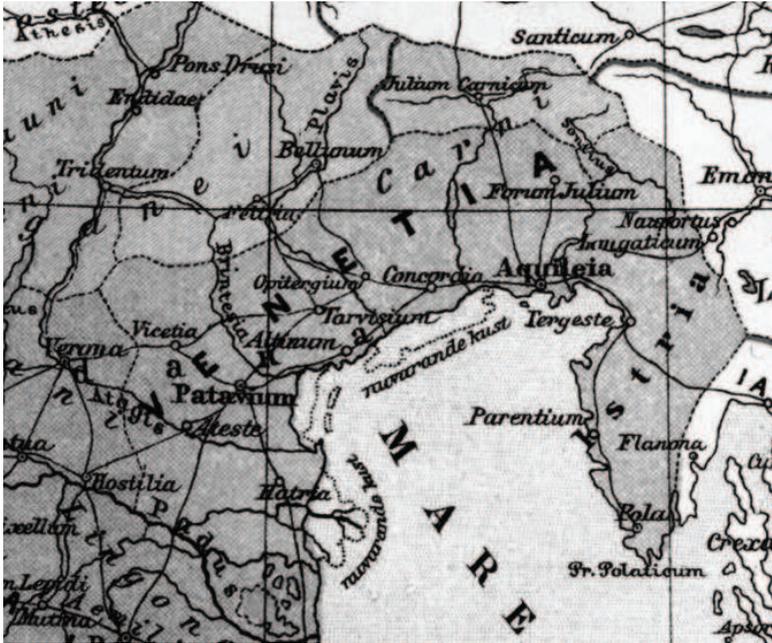
4.a

Hatria, Regio X, Venetia et Histria

4.b

M. Wolgemut, W. Pleydenwurff, *Genua*, from: *Schedel'schen Weltchronik*, Nürnberg, 1493

4.c
Neaples, *Tavola Strozzi*, 1472
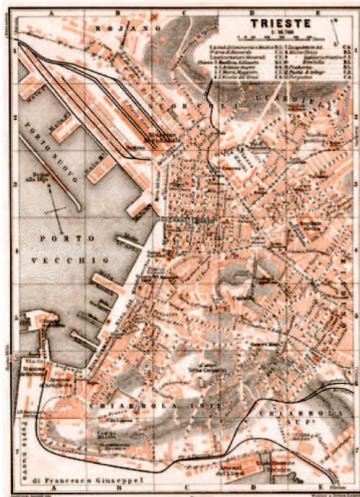
5.a
Triest, City Map, 1913
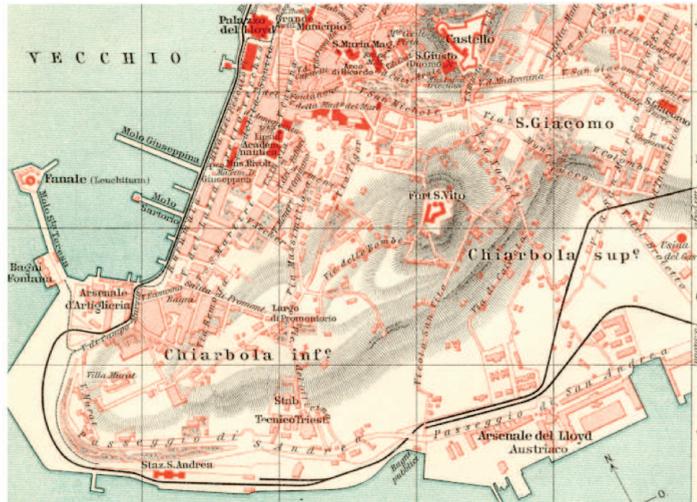
5.b
Triest, Chiarbola Guardiella, 1890

6
Triest, 1885

A. Zoppellari, *Conclusione. Dalle radici alle fronde*. In: C. Benussi C., A. Zoppellari (eds.), *Genealogie d'Europa, radici rami e fronde delle sue scritture*, Trieste, EUT-Edizioni Università di Trieste, 2009, pp. 43-46.

2 K. Kerény, *Religiöse Erfahrung. Mensch und Gott nach Homer und Hesiod*, in *Antike Religion*, Muenchen-Wien, Langen-Müller, 1971, pp.237.

3 P. Matvejević, *Le Mediterranée et l'Europe. Leçons au Collège de France*, Paris, Stock, 1998.

4 From Chaos came forth Erebus and black Night; but of Night were born Aether (5) and Day, whom she conceived and bare from union in love with Erebus. And Earth first bare starry Heaven, equal to herself, to cover her on every side, and to be an ever-sure abiding-place for the blessed gods. And she brought forth long Hills, graceful haunts of the goddess-Nymphs who dwell amongst the glens of the hills. She bare also the fruitless deep with his raging swell, Pontus, without sweet union of love. See Hesiod, *The Theogony translated by Hugh G. Evelyn-White*, Harvard, Loeb Classical Library, 1914, p. 5.

5 Respectively: *Kusor*, Phoenician sea god, guardian of the seasons; *Rodon*, sea deity in Illyrian mythology; *Apan Napat*, Sanskrit god of fresh water; *Nethuns* in Etrurian mythology, god of wells and springs; *Nechtnam*, Celtic god of wells; *Nettuno*, Roman deity of the sea. See J. G. R. Forlong, *Rivers of Life Part 2 Or Sources and Streams of the Faiths of Man in All Lands Showing the Evolution of Faiths from the Rudest Symbolisms to the Latest Spiritual Developments*, Whitefish, Kessinger Publishing, 2002.

6 During *dosmoi pilii*, festivals in honor of Poseidon, in Pylos in Messenia, in Peloponnese annual taxes of the district were levied, See P. De Fidio, *I Dosmoi Pilii a Poseidon. Una terra sacra di età micenea*, Roma, Ed. dell'Ateneo, 1977, p. 34 *et passim*.

7 M. Bernabò Brea, A. Cardarelli, M. Cremaschi (eds.): *Le Terramare. La più antica civiltà Padana*, Milano, Electa, 1997.

8 M. Eliade, TL. Sullivan, *Hierophany*, in: M. Eliade (ed.), *The Encyclopedia of Religion*, 6, Macmillan, New York-London, 1987, pp. 313-317.

9 The theonym follows Indo-European **bhr-u-n* > gothic *brunna* 'spring' , sscr. *bhurvān* 'moving water' 'current', Greek *phēar* 'well', Latin *fervere* 'gurgling'. Probable is the origin of Feronia or 'door' from Indo-European **dhur-* 'entry', 'entrance', See Sanskrit *dùrah*, Greek *thyra*, English *door*, Latin *foris* 'door', 'passage' *Forina* would be the deity protecting city, houses' entrances and river passage, a sort of female *Portuno*. Thus the assignment of "gender" to "spring" from which vital element is tumbling out, assimilated to the concept of "door, passage, way" assigned to the maternal uterus. See G. Dumézil, *Feste romane*, Genova, Il Melangolo, 1989, pp. 33-39.

10 N. Robertson, *Poseidon's Festival at the Winter Solstice*, in: "The Classical Quarterly", vol. 34, n.1, Cambridge, 1984, pp. 1-16.

11 From which: *nube*, from which the base *neph-tu- 'water', 'flow'. See Latin *nebula* (cloud, fog), Gr. *nephos*, Sanscr. *nabhas* (cloud, 'sky' as rain place of origin), and in the meaning of 'sky'. See L. Vlad Borrelli, *Nettuno*, s.v. in *Enciclopedia dell'Arte Antica*, Roma, Treccani, 1963.

12 Homer, *The Iliad*. Translated by Samuel Butler, Boston, Ginn & C., 1898.

13 Groups of settlers originating from one single *polis*, created a

new political entity completely self-governing under the guide of the *oikistes* [οἰκιστής], lit. «founder», keeping cult and language ties and politic-military fidelity. As a rule it was built on a rise near to the coastline protected by city walls; external lands were used for agriculture. See M. Dillon, L. Garland, *Ancient Greece: Social and Historical Documents from Archaic Times to the Death of Alexander Routledge sourcebooks for the ancient world*, London, Taylor & Francis, 2010.

14 *Hippodamian* system rested on three longitudinal axis named πλατείαί, '*plateiai*' (in Latin: *decumani*), facing East-West, crossed by perpendicular axis named *stenopoi* (cardines), facing North-South: their crossing formed stretched rectangular blocks. See L. Cerchiai, L. Jannelli, F. Longo, *Città greche della Magna Grecia e della Sicilia*, Verona, 2001.

15 H.W. Kruft, *Le città utopiche. La città ideale dal XV al XVIII secolo fra utopia e realtà*, Roma-Bari, Laterza, 1990.

16 Epithets of Ares: Βροτολοιγός [menfolk destroyer], Ανδρειφοντης [menfolk assassin], Μιαιφόνος [the one who is bloodstained], Τειχεσιπλήτης [the one who attacks the city walls], Μαλερός [brutal]. See C. Tuplin, *Heroes in Xenophons Anabasis*, in: A. Barzanò (ed), "Modelli eroici dall'antichità alla cultura europea", Roma, l'Erma di Bretschneider, 2003, pp. 115-117.

17 V.M. De Grandis, *Dizionario etimologico-scientifico delle voci italiane di greca origine*, Napoli, Vico Concordia, 1824.

18 Virgil, *Eneid*, Book VI, vv. 200-980, http://www.theoi.com/Text/VirgilAeneid6.html.

19 Attic vases for horses, gold for valuable or rare raw materials (iron, metals, amber) are the basic elements of trades at the *emporion* in the port of *Hatria*. This is witnessed by the so-called "Amber way" of proto-historic origin and fully active in Roman Age connecting the Adria port to the Baltic Sea shores up to the borders of current Finland. A. Mastrocinque, *L'ambre e l'Eridano: Studi sulla letteratura e sul commercio dell'ambra in età pre-romana*, Este, Zielo, 1991, p. 6 *et passim*.

20 A. M. Brizzolara, V. Baldoni, *Eracle nella ceramica attica in Etruria padana: la ricezione delle immagini*, in: "International Congress of classical archaeology. Meeting between cultures in the ancient Mediterranean", Roma, MIBAC, 2008, p. 2.

21 Please refer to the reconstruction of '*Terramara*' of Rangone Montale (MO), recalling by analogy proto-historic Emilian settlements of Castellazzo di Fontanellato, (Castione dei Marchesi, Montana dell'Orto, Case Cocconi, Vicofertile, Tabina di Magreta, Poviglio) and Castello di Tartano e Muraiola (VR); these villages are typologically similar to the homologous *Unterhuldingen* on the Lake Constance (13th-4th Centuries BC). See M. Bernabò Brea, A. Cardarelli, M. Cremaschi, *Le Terramare*, op. cit.

22 L. Malnati, M. Manfredi, *Gli Etruschi in Val Padana*, Milano, Mondadori, 1991; see B. Rossignoli, *L'Adriatico greco. Culti e miti minori*, Roma, L'Erma di Bretschneider, 2004, pp. 163-168.

23 The same ancient etymon is present in the toponym of Lìmena (PD), already proto-historic site. See D. Olivieri, *Toponomastica Veneta*, Roma-Venezia, 1961; C. Beretta, *I nomi dei fiumi, dei monti, dei siti: strutture linguistiche preistoriche*, Milano, Hoepli, 2003, p. 166.

24 The first trace of a paleo-Venetian settlement (10th-6th Century BC) in the present area of Adria (RO) witnesses the presence of pile dwelling on marshy ground at that time facing the sea. Greeks reached the Po delta from 12th-11th Century BC. This was favoured by the possibility to navigate the lagoon at the mouths in Grado even during the winter period. The Greeks' interest originated from the trade of valuable Baltic amber and it was so high as to lead to the establishment of an *emporion* aiming to import it directly. Adria's prestige grew as to name first the Po branch, then the gulf between the Po mouth and Istria (*Adrias Kolpos*), later on the whole sea until Ionian Gulf (*Ionios Kolpos*). Because of its strategic position, Adria was refunded in 385 BC as a Siracusan colony in the framework of the trade expansion in the Adriatic sea promoted by tyrant Dionysius. See R. Peretto (ed.), *L' antico Polesine: testimonianze archeologiche paleo-ambientali*, Rovigo, 1986; L. Braccesi, *Hellenikòs Kolpos*: supplemento a Grecità adriatica, Roma, L'Erma di Brretschneider, 2001, p. 87.

25 Genoa's origin (Neolitic about 4000 BC) is located at about 5 km from present centre, in Brignole. The old port is located near the *oppidum* called "di Castello" (Sarzano), where today Piazza Cavour is, founded at the beginning of 5th Century BC. See C. Praga, *A proposito di antica viabilità genovese*, Genova, Fratelli Frilli Editori, 2008; See A. Del Lucchese, P. Melli, *Archeologia Metropolitana. Piazza Brignole e Acquasola*, Genova, De Ferrari, 2010, pp. 5-45.

26 L. Quilici, S. Quilici Gigli, *Alcune note sulla viabilità di Adria* in *Edilizia pubblica e privata nelle città romane*, Roma, L'Erma di Bretchneider, 2008, pp. 7-21.

27 A. M. Durante, L. Gervasini Pidatella, Luni. *Zona archeologica*

e Museo nazionale, Roma, Istituto Poligrafico e Zecca dello Stato, 2000, pp. 20-124.

28 L. A. Muratori, *Delle antichità estensi*, Modena, nella stamperia ducale, MDCCXVII, p. 434, p. XXVI; cf: A. Frizzi, *Memorie per la storia di Ferrara*, Ferrara, M DCC XCI, 1791, p. 117; M. De Franceschini, *Le ville romane della X Regio*, Roma, L'Erma di Bretschneider, 1998, p. 839.

29 The river port built along the *Natissa* banks, where the waters of Torre and Natisone rivers flew at Roman's Age, had a double level quay both to be used by boats of different tonnage and to hold back the tide flow. It was 48 meters large and about 350 meters long, built with big squared Istria stone blocks fitted with rings for ship mooring. It was the most impressive in Western land with loading and unloading ramps for the different goods stored in the neighbouring warehouses. See L. Bertacchi, *Aquileia: l'organizzazione urbanistica*, in: *Milano capitale dell'Impero romano (286-402 d.C.)*, Milano, Silvana ed., 1990, pp. 209-212.

30 A. Frizzi, *Memorie per la storia di Ferrara*, Ferrara, Ed. F. Pomatelli, 1791, pp. 62-63.

31 Its position dominating the coast and the different landing places allowed the development of colonies mainly of Etrurians from whom the aboriginal inhabitants learnt customs and technologies. The finding of wall remnants datable in 5th Century BC let us suppose that the city walls stretched from the area around the convent of S. Maria di Castello up to the church of S. Silvestro, maybe recognizable in the so called "oval" (via S. Croce, piazza San Silvestro, via di Mascherona). See R. Dellepiane, *Mura e fortificazioni di Genova*, Genova, Nuova Editrice Genovese, 1984; cf. M. Milanese, *Gli scavi dell'oppidum preromano*

di Genova, V. 1, Roma, L'erma di Bretschneider, 1987, pp .19-71.

32 This is the case of the "double" settlement of Muggia (TS) in its "coming downhill" from the hill site of proto-historic fort to the current location in "Borgo Lauro", on the Adriatic shore, occurred in the first years of 15th Century. See D. Alberi, *Istria, storia, arte, cultura*, Trieste, Lint Editoriale, 1997¹, 2009³; F. Maselli Scotti, *La necropoli altomedievale di San Michele di Muggia : scavi 1991, 1993*, in: *Atti e memorie della Società istriana di archeologia e storia patria*, V. 41,Trieste, Società istriana di archeologia e storia patria, 1993, pp. 417-424; cf. F. Maselli Scotti, *Indagini recenti nei castellieri segnalati da Marchesetti*, Trieste, Comune di Trieste, Civici musei di storia ed arte, 1994, pp. 221-228.

33 The fortification of coastal settlements occurs for the most part of Tyrrhenian and Campania as well as southern Adriatic urban entities subject to raids of Arabic and Berber piracy. See P. Gosse, *Storia della pirateria*, Bologna, Odoya, 1962¹, 2008; M. Meschini (ed), *Mediterraneo medievale: cristiani, musulmani ed eretici tra Europa e Oltremare : secoli IX-XIII*, Milano, Vita e Pensiero, 2001, pp. 3-28

34 Mater Matuta is "*a sua volta [...] assimilata a Leucotea. In realtà la dea italica Mater Matuta aveva un figlio, appunto Portunus, proprio nell'aspetto di Dea marina, una delle qualità della Dea. Sembra che una statua della Dea con figlioletto Portunus in braccio fosse stata deposta proprio nel tempio di Portunus, che a Roma fu dedicato proprio il giorno dei Portunalia, secondo quanto riferito da Varrone, e si trovava presso il Ponte Emilio, come indicano alcuni antichi calendari romani*". See K. Latte, *Römische Religionsgeschichte*, München, Beck, 1960, p. 97; F.

Coarelli, Roma, Il Foro Boario, 1988, p. 246 et passim.

35 See Tito Livio, *Ab Urbe condita libri*, V, 14.

36 Varrone, *De lingua Latina*, 6.19.

37 The temple was converted into a Christian Church in 9th Century at first named Santa Maria Secundicerii, later on as Santa Maria Egiziaca, patron saint of prostitutes. See C. Hülsen, 1927, *Le chiese di Roma nel Medio Evo*, Firenze, Leo S. Olschki, 1927, pp. 336-338.

38 V. Mannucci, P.Verduchi, *Il Porto imperiale di Roma: le vicende storiche*. In V. Mannucci, V. (ed.) *Il Parco Archeologico Naturalistico del Porto di Traiano: metodo e progetto*, Roma, Ministero per i beni culturali ed ambientali – Soprintendenza Archeologica di Ostia , 1992¹, 1996, pp. 15-28.

39 See P. Sintini, *Trieste – Androna Campo Marzio. Analisi della morfologia urbana per il campus umanistico tergestino*, Tesi di laurea, a.a. 2007-'08, (rel. prof. A. Maahsen-Milan), Facoltà di Architettura, Università di Bologna, 2008.

40 P. Kandler, *Albo storico topografico della città e del territorio di Trieste*, reprint by S. Zorzon (ed.), Trieste, Ed. Italo Svevo, 1857¹, 1989, pp. 5-74.

41 E. Haeckel, *Kunstformen der Natur*, Leipzig-Berlin, Verlag des Bibliographischen Instituts, 1899¹, O. Breidbach, I. Eibl-Eibsfeldt (eds.), München, Prestel Velag, 1998, pp. 10-270.

42 E. Garcia Domingo, *Historical Shipyards in the Mediterranean*, in: "Portus", n. 12, 2006, pp. 64-69.

43 "*[...] the relationship between the city and the port still appear to be marked by severe conflicts: involving institutional figures, decision-making organs, spaces and uses of the soil. Often the competition*

grounds of these conflicts are represented by a space that follows the linear development of the port complex, defining itself as a border or mediation zone between the urban fabric and the activities of the port. If we analyze the dynamics of transformation which in recent decades have interested this mediation space we can observe the process of separation between port and city and describe it as a veritable "war for position" between the two systems. In Trieste, Genoa, Bari, Ancona, Naples and Carrara: on the one hand, the city tends progressively to repossess some portions of the port spaces, on the other the port is constantly searching for spaces that are functional to the growing technological and logistic innovations. These two dynamic processes, each of which has its own rhythm and speed, contrast within the same mediation space creating chaos and environmental deterioration." From: M. Di Venosa, *The Port-City*, in: "Portus", n. 10, pp. 1-7.

44 B.S. Hoyle, *Development dynamics at the port-city interface*, in: B.S. Hoyle, D.A. Pinder, M.S. Husain, (eds), *Revitalizing the waterfront: international dimensions of dockland redevelopment*, London, Belhaven, 1988, pp. 3-19.

45 S. Della Sala, *Security in Ports: a New Challenge for Ancient Structures*, in: "Portus", n.9, 2005, pp. 50-53.

46 Y. Aref, *The Urban Development of Alexandria's Waterfront: The Eastern Harbor*, in: "Portus", n.13, 2011, pp. 44-49.

47 L. Bonzi, L. Calabrese, P. Severi, *L'acquifero freatico costiero della regione Emilia-Romagna: modello geologico e stato di salinizzazione*, Bologna, Il Geologo dell'Emilia-Romagna, 2011, pp. 21-34.

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