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Hydrothermal Landscapes of Sicily: A Study of Their Mythological and Archaeological Dimensions

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Abstract

The thermal waters of Sicily offer a unique vantage point from which to explore the deep interconnections between geological phenomena and cultural constructions in the ancient Mediterranean. From the Archaic period onwards, historians, poets, and geographers, from Diodorus Siculus to Strabo and Pindar, interpreted the island's hot springs not merely as manifestations of an active volcanic landscape, but as tangible signs of a sacred dimension inhabited by chthonic deities, nymphs, and healing powers. An integrated analysis of literary sources, archaeological evidence, and geological data reveals that these springs functioned as liminal spaces where empirical observation, myth, cult practices, and social uses convergEd. The cases of Segesta and Himera, exemplary for their strong connection between thermal waters, local cults, and territorial configuration, demonstrate how such springs contributed to shaping religious imagination and communal identity. Over the long term, from antiquity to the present, Sicilian thermal waters emerge as a multilayered heritage: a natural resource, a space of healing, a repository of cultural memory, and a key to interpreting the island's historical development. An interdisciplinary approach, bridging geosciences, classical philology, and archaeology, is therefore essential to fully grasp the complexity and significance of this phenomenon.

Keywords: Thermal Water; Ancient Sicily; Cult; Sacred Landscapes; Archaeology

1. Introduction

The thermal waters of Sicily constitute a distinctive feature of the island's landscape and, at the same time, a key to interpreting its cultural past. Throughout history, the hot, sulphurous, and mineral springs scattered across Sicilian territory have not been perceived merely as natural phenomena, but rather as meaningful manifestations of a living land, engaged in continuous dialogue with the communities that have inhabited it over the centuries. From the most remote antiquity, thermal waters attracted the attention of historians, poets, and geographers. Notably, Diodorus Siculus, himself a native of the island, described its springs with great interest, attributing their power to the presence of chthonic deities and to the ceaseless activity of subterranean fire. Strabo, for his part, offered a more systematic geographical account, situating Sicily's hot springs within the broader context of thermal phenomena throughout the Mediterranean. Even in Pindar's poetry, one finds images of a fertile island

inhabited by nymphs and divine presences that appear to merge with the landscape. These sources, when read philologically, reveal that already in antiquity thermal waters were not merely objects of observation, but constituted an integral element of a symbolic conception of the territory. What is most striking, however, is the profound religious dimension that surrounded these springs. Water, especially when it emerges warm from the depths of the earth, has long been perceived as a liminal element, a threshold between the visible and the invisible world. Ancient Sicilian communities were no exception: many springs were venerated as sacred sites, frequented in the hope of receiving protection or healing. Deities such as Asclepius, lord of medicine, or nymphs associated with waters and woodland environments often stood at the centre of local cults. There was no shortage, moreover, of mythic narratives that explained the origins of these springs through extraordinary events: the tears of divinities, thunderbolts cast by Zeus, or actions of Hephaestus as he worked at his forge within the heart of Etna. These narratives were not mere stories, but true foundational myths, capable of binding a community to its territory through a shared imaginary.

In ancient Sicily, thermal springs were also places of encounter, exchange, and social life. With the arrival of the Romans, this function expanded even further: thermal complexes became spaces in which bodily care, relaxation, and public discourse intertwined (Lucore, Trümper, 2013; Belvedere, Contino, 2020, 65-70). In Sicily, as in the rest of the Empire, frequenting the baths meant participating in a form of well-being that was not merely physical, but also relational and cultural.

When we move into the modern and contemporary periods, we observe a shift in the language, methods, and objectives surrounding thermal waters, but not in their centrality. Beginning in the nineteenth century, these springs were studied according to scientific criteria: their chemical compositions were analysed, waters were classified, and specific treatments were promotEd. Organized facilities emerged, such as those in Sciacca, Acireale, Termini Imerese, and Alì Terme, which became focal points of attraction for travellers, patients, and scholars. Thermalism thus entered modernity, assuming a significant role from medical, touristic, and economic perspectives (Erfurt-Cooper, Malcolm, 2009; Belloumi, 2010, 550-560; Boekstein, 2014, 1-11; Cannizzaro, 2019, 181-189; Raimondi, 2024a; Raimondi, 2024b, 255-276; Raimondi, 2024c, 27-44; Raimondi, Musumeci, 2025, 75-92; Cannizzaro, 2025, in press).

Today, in the contemporary era, Sicily's thermal waters retain their intrinsic value and, indeed, acquire new meanings. On one hand, they continue to be appreciated for their therapeutic properties and their capacity to support tourism oriented toward well-being and quality of life (Rocca, 2014; Cannizzaro, 2019, 181-189). On the other hand, they are increasingly framed within a process of identity rediscovery: the connections between history, myth, and the environment are ever more valorised, allowing local communities to reclaim a heritage that is not merely natural, but profoundly cultural.

Thermal springs are therefore not only resources to be utilized, but sites where past and present engage in dialogue. They reflect Sicily's millennia-old history, a history of peoples who observed, venerated, interpreted, and exploited the hot waters emerging from the earth's depths. Even today, visitors to these sites may sense, perhaps unconsciously, the echo of this ancient relationship, of that subtle sacredness that continues to permeate the springs.

Discussing the thermal waters of Sicily inevitably entails examining Sicily itself: its living geology, its cultural memory, and its capacity to transform natural phenomena into shared symbols. It is a long and stratified history, one that continues to this day, as the island continues to valorise a heritage unique in its kind, capable of uniting science, well-being, tradition, and myth.

Within this perspective, two emblematic cases are particularly significant for closely examining the relationship between thermal waters, cult, and archaeology: those of Segesta and Himera (Fig. 1, Sicily's map with the locations of Segesta and Himera). Although these sites differ in historical context and territorial configuration, both exemplify how thermal springs played a central role not only in the daily life of ancient communities, but also in the construction of their sacred imagination. At Segesta, for instance, the hot waters associated with the renowned baths, already known in the classical period and surrounded by an aura of sacrality, intertwine with cultic practices and the Elymian tradition, which attributed to nymphs and chthonic deities a direct influence over those waters. Similarly, at Himera, where archaeological and literary evidence converge particularly eloquently, the thermal springs allow the reconstruction of a deeply rooted sacred-therapeutic framework, in which cult, territorial topography, and healing practices merge into a single reality. Analysing these two cases thus enables a clearer understanding of how thermal waters were not merely natural phenomena, but generative elements of identity and collective memory for the ancient populations of Sicily.

Figure 1. Sicily's map with the locations of Segesta and Himera (graphic elaboration by V. Mirto and G. Raimondi).

2. *Therma loutrà* of Himera. Tracing a Mythical and Sacred Landscape

The territory of ancient Himera lies on the northern coast of Sicily, near the mouth of the Imera Septentrionalis River, within a landscape of coastal plains and calcareous hills shaped by the tectonic structures of the Sicilian fold-and-thrust belt (Fig. 2, Map of Himera, photo by Davide Mauro, Creative Commons Attribution-ShareAlike License 4.0 International). The sedimentary formations and fault systems of the area favor deep groundwater circulation.

Within this geological setting are the thermal springs of Termini Imerese, traditionally linked to Himera. The waters originate from meteoric infiltration into permeable carbonate rocks, descend along fractures, are heated at depth by the geothermal gradient, and rise again to the surface.

The waters emerge at temperatures of about 40-43 °C and are sulphurous in composition, rich in hydrogen sulphide and dissolved mineral salts. Today they are exploited in spa facilities for therapeutic and wellness treatments, continuing a tradition of thermal use rooted in antiquity.

The foundation of Himera dates to 648 BCE, established by Chalcidians and Syracusans. The city was the site of several military events, the most famous being the Battle of Himera in 480 BCE between the Carthaginians and the allied forces of Syracuse and Agrigento.

Concerning the territory in its most physical sense, and the myths associated with the surrounding landscape, Diodorus recounts that upon the arrival of Heracles, the local water nymphs caused a thermal spring to gush forth, providing the hero with refreshment after the labors undertaken during his journey westward. Then, since he wished to tour the entire island of Sicily, he set out from Pelorus in the direction of Eryx. As he travelled along the coast of the island, the myths recount that the nymphs caused hot baths to spring forth so that he might recover from the hardships endured during the journey. There were two of them, the citizens of Himera and of Segesta, who took their names from the places in which they lived" (Diodorus 4, 23, 1: μετὰ δὲ ταῦτα βουλόμενος ἐγκυκλωθῆναι πᾶσαν Σικελίαν, ἐποιεῖτο τὴν πορείαν ἀπὸ τῆς Πελωριάδος ἐπὶ τὸν Ἔρυκα. διεξιόντος δ' αὐτοῦ τὴν παράλιον τῆς νήσου, μυθολογοῦσι τὰς Νύμφας ἀνεῖναι θερμὰ λουτρὰ πρὸς τὴν ἀνάπαυσιν τῆς κατὰ τὴν ὁδοιπορίαν αὐτῷ γενομένης κακοπαθείας. τούτων δ' ὄντων διττῶν, τὰ μὲν Ἱμεραῖα, τὰ δ' Ἐγεσταῖα προσαγορεύεται, τὴν ὀνομασίαν ἔχοντα ταύτην

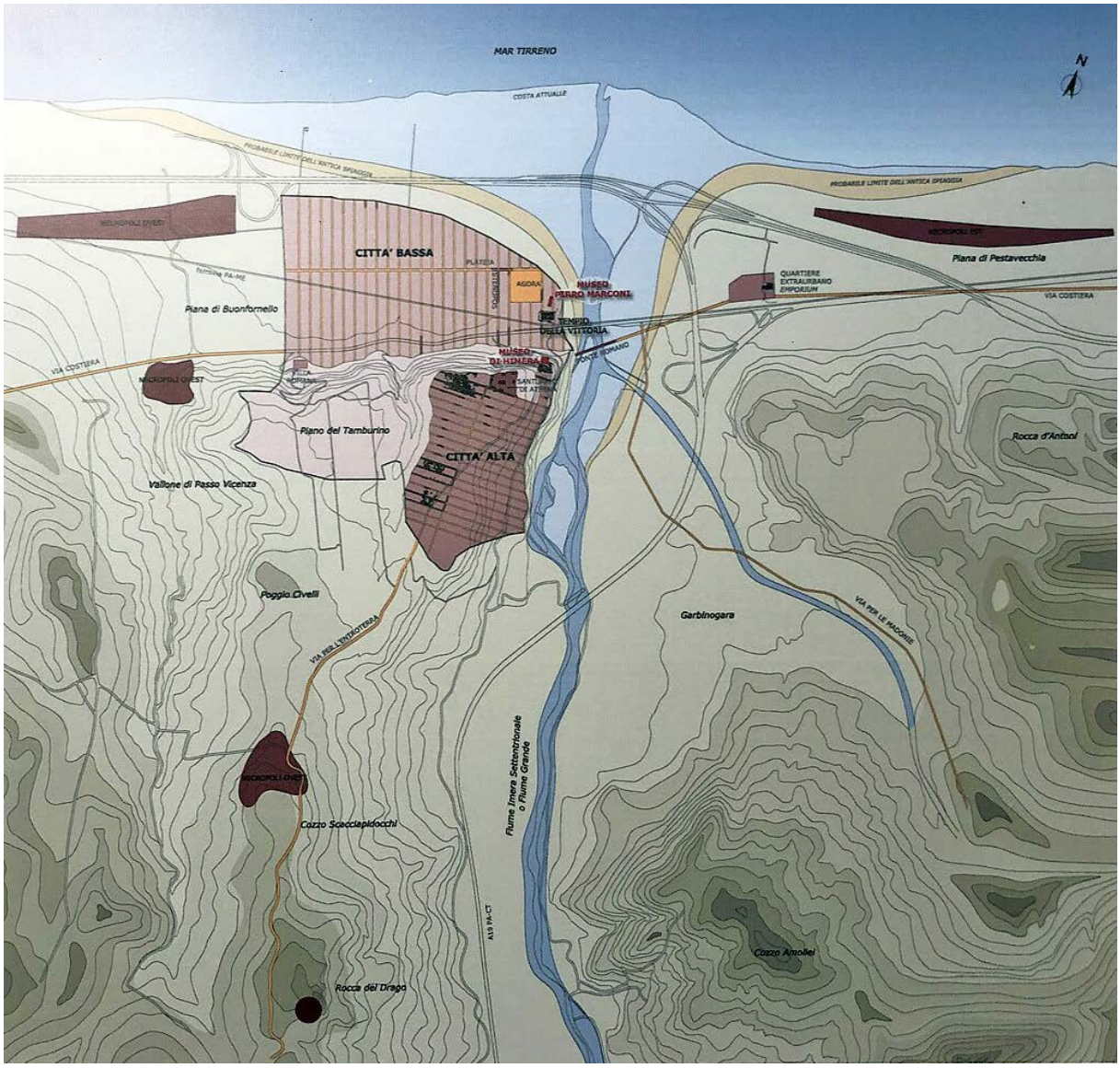

Figure 2. Map of Himera (photo by Davide Mauro, Creative Commons Attribution-ShareAlike License 4.0 International).

ἀπὸ τῶν τόπων). In this context, Diodorus' account does not merely preserve an episode from Heracles' western journey, but forms part of a broader local tradition that intertwines the physical features of the landscape with the interpretive needs of coastal communities. The narrative of the nymphs' miraculous intervention, in fact, not only endows the thermal springs with a heroic and sacred aura but also provides a mythic explanation for the observable environmental peculiarities, thus integrating topography, collective memory, and the identity construction of the territory. The inhabitants of the coast were undoubtedly invested in explaining the origins of the thermal waters in their region (Ambaglio, 2006, 81-88), as attested not only by Diodorus but also by numismatic evidence (see Manganaro, 2008, 91-104; Salamone, 2012a). In the iconographic repertoire of the city's coinage, there is indeed a type depicting the head of Heracles on the obverse, while the reverse presents three nymphs dressed in chiton and peplos (for the figure see the contribution of Larson, 2001). Another type consists of a silver coin dating to the sixth century BCE, on which a nymph offering a libation is represented (Fig. 3, Sacrificing nymph with Silenus seen almost face-on and naked and protome with lion's head next to the Silenus. Wheat grain at the top. See Himera, in Rizzo, 1946, 126, Tab. XXI, fig. 27a; Vassallo, 2004, 31. For the various coin types featuring nymphs from Himera, see Gabrici, 1894. For depictions of the nymph on sixth-century BCE coin types, see Caccamo Caltabiano, 2005, 129-141; for Himera coins depicting the eponymous libating nymph, see Salamone, 2010a, 29-41, and Salamone, 2010b, 153-163. Cf. also Salamone, 2012a and Salamone, 2013, 29-41). Another coin depicts Heracles seated on a rock, holding his club, with his bow slung across his back as a sign of rest (Ciaceri, 1896, 70).

Figure 3. Sacrificing nymph with Silenus seen almost face-on and naked and *protome* with lion's head next to the Silenus. Wheat grain at the top (see Himera, in Rizzo, 1946, 126, Tab. XXI, fig. 27a).

The representations of nymphs on Himera's coins also seem to confirm what Cicero described: "There were several bronze statues; among them, distinguished for her beauty, was Himera herself, represented by the name of the city and of the river, in female form and attire" (Cicero, *In Verrem*, 2, 87: *Erant signa ex aere complura: in his eximia pulchritudine ipsa Himera, in muliebrem figuram habitumque formata, ex oppidi nomine et fluminis*), leading one to consider that the figure depicted is precisely the personification of the nymph Himera, the deity of the waters bearing the same name in the territory.

In a comparative study on material evidence related to nymph cults in Sicily, E.C. Portale discusses the case of Himera and the practices that took place within the inhabited areas. Social aggregation rituals were likely performed here; as in other cases (for example, Monte Adranone or Grammichele), the same context contains cisterns and wells, louteria, small altars, and votive terracottas that evoke nymphal and curative themes (according to Portale, this evidence should be considered in relation to colonial dynamics; Portale, 2012a, 182). Other types of terracottas include representations of Hermes and Heracles (Larson, 2001, 91-111; Portale, 2012a, 183), protagonists of mythic narratives often associated with nymphs. In the case of Himera, the goddess Athena is also present, who, as a poliade deity, is surrounded by nymphs (Portale, 2012a, 183). It is precisely from the inhabited area of Himera (for the urban sanctuary of Himera and the votive finds dating to the fifth century BCE, see also Longhitano, 2020, 270, where the author describes loom weights discovered there and the association of the site with the possible cult of Athena Ergane, Demeter and Kore, or the Nymphs) that the most significant attestations of ritual practices connected to these entities originate. Indeed, in the small sanctuary of the eastern quarter, a site exhibiting all the characteristics previously described for typical locations of social rituality, namely water installations and objects used for rituals involving water (Portale, 2012a, 183), elements related to the transitional status of youths entering adulthood were found. The domestic context is also addressed in the study by R. Anzalone, which re-examines the deposition at the bottom of the western cistern of Block XVI, where cultic objects were identified once again linking water and the sacred (Anzalone, 2009, 17-31; Portale, 2012a, 184). The case of Himera is particularly emblematic about the figure of Heracles, who is especially associated with the island's waters. Evidence of this close mythic connection is found in the therapeutic springs, the therma loutrà, which the nymphs caused to spring forth in order to provide, as mentioned, refreshment for the hero after his labours (or, according to other traditions, by deities such as Athena and Hephaestus. As Serino notes, this tradition appears to have been known as early as Ibicus, fr. 19 Page pmg = 46b, Schol. Ar. nub., 1050, and Pindar, Olympian 12, 20 and Schol.; see Serino, 2014, 23. For cults associated with Heracles, see also Camerata Scovazzo, Vassallo, 1988-1989, 701-702; De Bernardin, 2012, 307; Frisone, 2017, 147). The cult of Heracles, the nymphs, and the waters may have been connected to status transitions within society (for Heracles, the Nymphs, status transitions, and a reassessment of the iconography of ceramic materials in relation to the structures of Himera, see De Cesare, 2015, 41-60; see also De Cesare, 2013, 67-76 on Heracles and the nymphs associated with waters). Indeed, comparisons with cultic data from other Western poleis, such as Sybaris, reveal similarities in rituals associated with the transition of youths to adulthood, which in certain regions connected to nymphs and waters required ritual isolation (Frisone, 2017, 147). In this way, beyond the already well-documented urban rituality of the city, the existence of suburban cults connected to the *chora* of Himera can also be hypothesized, which were fundamental for the community and its social structure (Frisone, 2017, 147).

3. Egesta, the Crimisus, and the Origins of the Thermal Waters in the Segesta Area

The area of the Crimisus River and Segesta in north-western Sicily is characterized by calcareous hills and valleys shaped within the Sicilian fold-and-thrust belt. The ancient city overlooks a valley associated with the Crimisus (identified with the modern Caldo stream), in a geological context dominated by fractured carbonate rocks that favor deep groundwater circulation.

The Segestan thermal springs, today used at the Terme Segestane (Figs. 4-5, Signpost of Terme Segestane, photo di G. Raimondi and Terme Segestane, photo by Davide Mauro, October 23, 2016, Creative Commons Attribution-ShareAlike 4.0 International license) and visible in natural pools known as the Polle del Crimiso, originate from meteoric waters infiltrating through tectonic fractures, warming at depth due to the geothermal gradient, and rising back to the surface.

The waters emerge at temperatures of about 46-47 °C and are classified as sulphurous, salso-sulphate-alkaline mineral waters, rich in dissolved salts and hydrogen sulphide. They are currently used both in open natural baths and in organized spa facilities offering therapeutic and wellness treatments, reflecting a long-standing tradition of thermal exploitation in the region.

Figure 4. Signpost of Terme Segestane (photo di G. Raimondi).

Figure 5. Terme Segestane (photo by Davide Mauro, October 23, 2016, Creative Commons Attribution-ShareAlike 4.0 International license).

Among the legends concerning the origins and foundations of Sicilian cities there is precisely that of the Crimisus (Crimisus was not the only river venerated by the ancient inhabitants of Segesta, who also revered two other rivers, including the Porpace. For this, see Ciaceri, 1986, 95, which also cites the testimonies of Claudius Aelianus, Varia Historia 2, 33, and Xenophon. However, for the purposes of this discussion, only the Crimisus will be considered in this section) and Egesta. According to tradition, Κρίμισος was a river in western Sicily whose exact location remains unidentified, though some scholars associate it with a branch of the Belice River (Strafforello, 1893, 58 notes that it may have been the Fiume Freddo or the S. Bartolomeo according to Fazello, *De Rebus Siciliæ*, 8, 299). Strafforello notes that some geographers, including Cluverius, confused the right branch of the Belice (that is, the Selinuntine Hypsas) with the Crimisus of Segesta, famous for the victory in which Timoleon and his 11,000 men defeated 70,000 Carthaginians (Strafforello, 1893, 58; Plutarch, *Timoleon*, 25.6: τούτους μὲν οὖν Τιμολέων κέρδος ἠγεῖτο πρὸ τῆς μάχης φανεροὺς γεγονότας, τοὺς δ' ἄλλους ἐπιρρώσας κατὰ τάχος ἦγε πρὸς τὸν Κριμισὸν ποταμόν, ὅπου καὶ τοὺς Καρχηδονίους ἤκουσε συνάπτειν, "But Timoleon considered it an advantage that they had revealed themselves before the battle; having encouraged the others, he quickly led them to the Crimisus River, where he had heard that the Carthaginians were also heading". For the historical and geographical context of the river, see also the entry Crimisus in Smith 1854). The connection between the watercourse and the city is particularly expressed through the myth of the Trojan woman Egesta and the river god Crimisus, whose union gave birth to Egeste, or Aceste, as recounted by Virgil in the Aeneid (Virgil, *Aeneid*, 5.35-41: At procul ex celso miratus vertice montis adventum sociasque rates occurrit Acestes, horridus in iaculis et pelle Libystidis ursae, Troïa Criniso conceptum flumine mater quem genuit. Veterum non immemor ille parentum gratatur reducis et gaza laetus agresti excipit ac fessos opibus solatur amicis, "But from afar, atop the mountain, Aceste observes the arrival of the friendly ships and hastens down, clad in darts and the hide of a Libyan bear. Trojan, he had been conceived by Crimisus, the river, whose waters his mother bore him in; and he, mindful of his parents, rejoices at their return, welcoming them joyfully with rustic treasures and easing their weariness with his provisions, as a friend").

In this regard, Servius also reports the event while discussing the punishment imposed by Poseidon for the betrayal of the Trojan king Laomedon. The god sent a sea monster to Troy that dragged people into the water, while Apollo brought a plague upon the city. This narrative, which centres on Laomedon's betrayal for failing to honour his oaths, is marginal to the story of Egesta, daughter of Hippotes, who was sent by her father to Sicily to escape the monster sent by Poseidon (the story is analysed by J. Conington in his commentary on Virgil's Aeneid, citing Servius, *Aen*., 1.5.550; see also Nenci, 1987, 933).

The interpretation of the myth is essential for explaining the origins of the local thermal springs. It is said that the river god caused the waters to become warm in order to provide relief to Egesta fleeing from Troy (Ciaceri, 2004, first Ed. 1911, 142), who, whether woman or nymph, is identified in the numismatic evidence analysed by G.E. Rizzo (1946, 283-290) as the nymph depicted on the coins of Segesta. The tradition likely associates Egesta with a nymphal identity due to her union with the river. The possibility that the woman represented on fifth-century BCE coins is a nymph has also been proposed in the exhibition panels at the Antiquarium of Segesta. Depending on the tradition, Egesta was subsequently represented as a nymph in the dithyrambs of Segesta (Rizzo, 1946, 283). Indeed, for at least half a century, beginning around 490 BCE, the nymph Egesta was depicted at Segesta in association with a dog (Imhoof-Blumer, 1886, 262; Rizzo, 1946, 283), likely representing the river Crimisus, which, in the form of a dog, was said to have lain with Egesta (Fig. 6, Didrachms from Segesta, Rizzo, 1946, no. 16).

Figure 6. Didrachms from Segesta (Rizzo, 1946, no. 16).

Occasionally, the figure of the dog is replaced by that of a hunter, who is sometimes identified as the river Crimisus and at other times as Egesto, the mythical founder of the city (for this, see also Rizzo, 1946, 283). Moreover, the information reported here is also documented in the exhibition panels of the Segesta Antiquarium. Despite discrepancies in the Segestan myth and the various issues arising from the partial absence of reliable information concerning the nymph, it seems important at this point to turn attention to the local thermal waters. The relationship of the therma loutrà with the island's mythic figures inevitably recalls once again the story of Heracles, who circumnavigates Sicily and finds refreshment at the springs caused to flow by the local nymphs (cf. Diodorus 4.23.1: μετὰ δὲ ταῦτα βουλόμενος ἐγκυκλωθῆναι πᾶσαν Σικελίαν, ἐποιεῖτο τὴν πορείαν ἀπὸ τῆς Πελωριάδος ἐπὶ τὸν Ἔρυκα. διεξιόντος δ' αὐτοῦ τὴν παράλιον τῆς νήσου, μυθολογοῦσι τὰς Νύμφας ἀνεῖναι θερμὰ λουτρὰ πρὸς τὴν ἀνάπαυσιν τῆς κατὰ τὴν ὁδοιπορίαν αὐτῷ γενομένης κακοπαθείας. τούτων δ' ὄντων διττῶν, τὰ μὲν Ἱμεραῖα, τὰ δ' Ἐγεσταῖα προσαγορεύεται, τὴν ὀνομασίαν ἔχοντα ταύτην ἀπὸ τῶν τόπων, "Then, since he wished to tour the entire island of Sicily, he set out from Pelorus in the direction of Eryx. As he travelled along the coast of the island, the myths recount that the nymphs caused hot baths to spring forth so that he might recover from the hardships endured during the journey. There were two of them, called the Imeresi and the Egestani, taking their names from the places in which they were found"). It is therefore based on this Diodorean account that we learn of a second version of the mythical rise of the thermal springs of Segesta, caused by the nymphs. Ciaceri also sees in this event the possible existence of a cult dedicated to the nymphs and the hero, although he notes that there is no direct evidence to support this claim (Ciaceri, 1986, 70). Regarding the religiosity of the site, it must be acknowledged that only limited information is available.

From Cicero (Cicero, *In Verrem*, 2.4.72-79) we learn of a sanctuary dedicated to an ancient cult of an idol sacred to the goddess Diana, which had been seized from the inhabitants of Segesta by Carthaginian forces in the fourth century BCE, subsequently returned to Sicily by the Romans, and then stolen again by Verres. Specifically, the actual cult sites where these mythical entities were honoured have not been identified; indeed, although there is evidence of three sacred areas in the archaic and classical city, the identities of the deities venerated there remain unknown. Notable is the arrangement of the three cultic areas, positioned to safeguard key points of the region: the sanctuary on the Acropolis, the sacred area of Contrada Mango on the plateau facing Selinunte, and the sanctuary on the western hill, overlooking the northwest coast of the island. According to studies on the subject, these cultic areas were already in use during the earliest phases of the Greek cities in Sicily. In these early phases, the structures were probably simple, integrated with the surrounding landscape, and perhaps open-air. Ritual pathways with votive shrines along the roads connecting these sites have also been hypothesizEd. This interpretation is further supported by the exhibition panels in the Antiquarium of Segesta (Fig. 7, View of Segesta, Wikicommons, CC License).

Figure 7. View of Segesta (Wikicommons, CC License).

4. Sacred Springs and Heroic Journeys: Heracles in Sicily

In this context, where the thermal waters of Segesta and Himera emerge not merely as natural features but as genuine symbolic centres around which the religious and cultural life of ancient communities was organized, it becomes particularly significant to consider how certain pan-Mediterranean cults took root in Sicily, adapting to the peculiarities of the local landscape. Among these, the cult of Heracles occupies a central place: the hero not only integrates into local mythological systems but is often associated with the very sacred waters that defined the identity of these sites. Just as the springs of Segesta and Himera were perceived as points of contact between the human and divine realms, so too does Heracles, in his Sicilian manifestation, closely connected to these two locations, sometimes assume the role of protector of the waters and their courses, a tutelary deity linked to the regenerative and purifying force that these natural phenomena embodiEd. It is therefore within this complex framework, where environment, myth, and ritual intertwine, that the cult of Heracles in Sicily must be understood: a multifaceted, syncretic cult profoundly permeable to local traditions, reflecting the island's very capacity to transform natural elements, such as thermal springs, into centres of religious and cultural significance.

The cult of Heracles in Sicily is well attested, and despite its various manifestations resulting from cultural syncretism, it is possible to outline in broad terms certain specific features as well as similarities with neighbouring cults of other deities associated with him. From the Archaic period up to the third century CE, the cult of Heracles was present in Sicily, and the surviving evidence includes both written sources (epigraphic and literary) and material remains (archaeological structures, coins, and iconographic representations). This demonstrates that the hero was embraced not only in centres of Greek origin but also in Phoenician-Punic and indigenous settlements. It is perhaps for this reason that the Sicilian Heracles exhibits numerous syncretic traits with the Phoenician Heracles (Melqart: Bonnet, 2005, 17-28; cf. also Bisi, 1968, 1156-1158 and bibliography; Purpura, 1981, 87-93 and bibliography; Moreno, 2002, 12-19), with the Etruscan Hercle (the concept of the Italic Hercle becomes particularly evident when the Mamertines arrive in Sicily in the third century BCE; see Servi, 1903; cf. also Bayet, 1926b; Levi, 1996, 90; Capano, 2013, 93-154), and with the Italic Hercules (Bayet, 1926b; Levi, 1996, 79-94; Levi, 1997; Genovese, 2000). Above all, in Sicily he is connected to the various aspects that regulated society, from funerary practices to territorial defense, and to the social maturation of youths transitioning to adulthood. Another aspect of Heracles' rituality concerns his connection to water cults, over which the hero presides as a tutelary deity.

To fully understand the phenomenon of sulphurous springs and their ritual significance, it is useful to focus on the figure of Heracles in Sicily, whose image reflects a cultural syncretism capable of intertwining the presence of heroes with that of nymphs, thus embodying the mediation between the divine realm and natural phenomena. The Greek Heracles arrived in Sicily with colonization from the eighth century BCE with Greek settlers, maintaining the features of the motherland. The Italic tradition of Heracles emerges from the third century BCE (Servi, 1903) with the arrival of the Mamertines (Bayet, 1926a), while the Phoenician Melqart (assimilated to the hero) further contributed to the construction of a shared iconographic and cultic model, based on strength and virility (Levi, 1996, 86). Moreover, both Melqart and Heracles share a particular relationship with female deities (cf. Bonnet, 2005, 27-28). The result is a Sicilian Heracles, permeable to different religious traditions and capable of embodying forms of interethnic integration typical of the Mediterranean context.

Iconographic attestations of Heracles in Sicily are widespread and testify to the complexity of his figure. Vessels and votive objects from sites such as Agrigento (second half of the sixth century BCE; cf. Panvini, Sole, 2009, 256), Colle Madore (Marconi, 1999; Vassallo, 1999; Panvini, Sole, 2009, 391; De Bernardin, 2012, 306), Gela (Panvini, 1998, 82, 120; Di Stefano, 2017, 62; Congiu, Calà, 2017, 196), and Caltagirone (Panvini, Sole, 2009, 328; more generally cf. Frasca, 2017, 116) depict the hero according to the Greek prototype, with a short chiton, pointed beard, and shoulder-length hair (cf. the sixth-century BCE *arula* from Gela, Panvini, 1998, 120).

Only from the first quarter of the fifth century BCE does the more canonical iconography emerge, showing Heracles either nude or covered with the *leontè*. In this regard, the two terracotta sculptures from Himera are particularly noteworthy (cf. Vassallo, 2004, pl. CXXIV; for the figure of Heracles in the Imerese context, see also Serino, 2014, 9-32).

Different stylistic influences can be observed in the sculptures from Syracuse (dating to the third century BCE; cf. Bernabò Brea, 1958, 58) and in the bronze from Modica (late fourth-early third century BCE; cf. Di Stefano, 2004, p. 9; cf. also Di Stefano, 2017, 57-67), associated with the Italic Hercules (Di Stefano, 2004, 9). The presence of this figure was likely favoured by the Mamertines, as indicated by bronzes (Bayet, 1926b) and a Samnite belt discovered at Morgantina (Bonanno, 2014, 48).

The theatrical and comic spheres also reflect the diffusion of the Heracles cult, as demonstrated by a Siceliot crater from Lentini (De Cesare, 2013, 67), an Apulian crater from Catania (La Mertens-Horn discusses the crater, which was housed in the Museo Biscari in Catania, in a 1999 article; by that year the vase was reported missing – Brommer, 1984, 30, fig. 12; Mertens-Horn, 1999, 131-162), and a terracotta figurine from Fontana Calda di Butera (Portale, 2008, 9-58; more generally, see also Adamesteanu, 1994-1995, 109-117; Raimondi, 2024a; Borgese, Devoto, Raimondi, 2025, 47-59). In later evidence, Heracles approaches the iconography of the Roman Hercules, bearer of civic and moral virtues (Levi, 1996, 86), as exemplified by the marble group of Heracles and Antaeus from Catania (second century BCE; Libertini, 1981, 79-87; Pautasso, 1992, 83-91).

Thanks to this cultural stratification, Heracles played a central role in both public and private religious practices (De Cesare, 2013, 67), and his image also appears on the coins of various Sicilian cities. In Syracuse, Gela, Himera, Camarina, and Messana, the coins reflect political purposes, while in Agira, Akragas, Selinunte, Alontion, and Kephaloidion, the hero's depiction emphasizes his colonizing function. For Agira, see Giangiulio, 1983, 835-836; Ciaceri, 1993, 281; La Delfa, 2017, 120; for Akragas, Gabrici, 1927, 114-116; Consolo Langher, 1969, 71; Westermark, Jenkins, 1980, 14; for Selinunte, Carroccio, 2004, 196; La Delfa, 2017, 119; for Alontion, Bernabò Brea, 1975b, 3-25; for Kephaloidion, La Delfa, 2017, 122. See also Calciati, 1994, 8-13. These attestations demonstrate the multiplicity of social and symbolic functions that the hero assumed across the island.

5. Conclusions. Springs as a Living Heritage: Linking Ancient Rituals and Modern Landscapes.

Thermal springs have therefore represented, since antiquity, places of great significance not only for their natural properties but also for the symbolic and religious value attributed to them, particularly in certain regions. An emblematic example comes from the Etna area, where nymphs are described as inhabiting the hot springs surrounding the volcano, endowed with therapeutic powers. Myth in general, as well as Hellenistic epigraphic and literary sources, demonstrates how these waters were perceived as capable of regenerating the body and alleviating ailments, as evidenced in the epigram by Lakon (Anth. Gr. 6, 203: Ἡ γρῆυς ἡ χερνῆτις, ἡ γυιὴ πόδας, πύστιν κατ'εσθλὴν ὕδατος παιωνίου ἦλθέν ποθ'ἑρπύζουσα σὺν δρυὸς ξύλῳ, τό μιν διεσκήριπτε τὴν τρετρωμένην. οἶκτος δὲ Νύμφας είλεν, αἴτ'ἐριβρόμου Αἴτνης παρωρείῃσι Συμαίθου πατρός ἔχουσι δινήεντος ὑγρόν οἰκίον. καὶ τῆς μὲν ἀμφίχωλον ἀρτεμές σκέλος θερμὴ διεστήριζεν Αἰτναίη λιβάς· Νύμφαις δ'ἔλειπε βάκτρον· αἱ δ'ἐπῄνεσαν πέμπειν μιν ἀστήρικτον ἠσθεῖσαι δόσει "An old spinner, crippled in the feet, once came, dragging herself with an oak staff which she, disabled, supportEd. Pity seized the Nymphs, who dwell on the mountain slopes of Etna, which roars, the damp dwelling of the whirling father Simeto. And from it the warm Etnean spring restored both her lame legs to health. She left her staff to the Nymphs, and they, pleased with the gift, allowed her to depart unaided". Manganaro, 1994, 79-118). In this account, an old woman crippled in her feet is healed by the thermal baths of Etna, a miracle attributed to the intervention of the nymphs inhabiting the slopes of the volcano along the course of the Simeto. As the text narrates, the woman, dragging herself with her staff, finds relief in the hot waters that restore the strength of her legs, while the nymphs, accepting the gift of the staff, return her autonomy (see also Portale, 2008; Raimondi, 2024a; Raimondi, 2024b, 255-276; Raimondi, 2024c, 27-44; Raimondi, Musumeci, 2025, 75-92).

This example illustrates that thermal springs were not merely natural phenomena, but ritual and symbolic centres, closely linked to the perception of a beneficent force immanent in nature. The hot water, its capacity to heal and purify, and the presence of aquatic or semi-divine deities endowed these sites with a central role in the social and religious life of ancient communities, acting as a bridge between humans and the natural environment. In this sense, thermal springs become privileged instruments for understanding the interplay between geology, mythology, and cultic practices, revealing how ancient peoples interpreted and valued the natural phenomena around them.

The specific case of Heracles and water is emblematic of a profound connection, attested not only in Sicily but throughout the Greek world. Ἀκίδων is the name of a river in Elis, near which the temple of Heracles stood, and Ἄκη is the name of a Phoenician city through which a river flowed in which Heracles found healing (see note 3 in Rapisarda, 1916, 218-219). For Acidon, see also Strabo 8.3.21: Ἀπὸ δὲ τοῦ Πύλου τούτου καὶ τοῦ Λεπρείου τετρακοσίων που σταδίων ἐστὶ διάστημα ἐπὶ τὴν Μεσσηνιακὴν Πύλον καὶ τὸ Κορυφάσιον ἐπὶ θαλάττῃ κείμενα φρούρια, καὶ τὴν παρακειμένην Σφαγίαν νῆσον, ἀπὸ δὲ Ἀλφειοῦ ἑπτακοσίων πεντήκοντα, ἀπὸ δὲ τοῦ Χελωνάτα χιλίων τριάκοντα. ἐν δὲ τῷ μεταξὺ τό τε τοῦ Μακιστίου Ἡρακλέους ἱερόν ἐστι καὶ ὁ Ἀκίδων ποταμός. ῥεῖ δὲ παρὰ τάφον Ἰαρδάνου καὶ Χάαν πόλιν ποτὲ ὑπάρξασαν πλησίον Λεπρείου, ὅπου καὶ τὸ πεδίον τὸ Αἰπάσιον. περὶ ταύτης δὲ τῆς Χάας γενέσθαι φασὶν ἔνιοι τὸν

πόλεμον τοῖς Ἀρκάσι πρὸς τοὺς Πυλίους, ὃν ἔφρασεν Ὅμηρος, καὶ δεῖν οἴονται γράφειν ἠβῷμ', ὡς ὅτ' ἐπ' ὠκυρόῳ Ἀκίδοντι μάχοντο ἀγρόμενοι Πύλιοί τε καὶ Ἀρκάδες Χάας πὰρ τείχεσσιν, ού Κελάδοντι, ούδὲ Φειᾶς· τῷ γὰρ τάφῳ τοῦ Ἰαρδάνου τοῦτον πλησιάζειν καὶ τοῖς Ἀρκάσι τὸν τόπον μᾶλλον ἢ ἐκεῖνον, "There are about 400 stadia separating this Pylos and Lepreum from the Pylos of Messenia and from Coryphasium, fortresses located on the sea, as well as from the nearby island of Sphagia; from the Alpheus there are 750 stadia, and from Chelonata (1030). In the intermediate space lie the temple of Heracles Macistius and the river Acidon. The Acidon flows near the tombs of Giardano and Caa, a city that existed long ago near Lepreum, where the Epasian plain is also locatEd. Some report that for the possession of this city of Caa there was a war between the Arcadians and the Pylian forces mentioned by Homer, and they argue that it should be written: 'young as when on the swift Acidon the Pylian and Arcadian forces fought together by the wall of Caa, that is, it should read Acidon rather than Celadon, and Caa rather than Feia: this region, in fact, is closer to the tomb of Giardano and to the Arcadians").

The association between the demigod and watercourses, springs, and thermal baths is clearly attested in literary, epigraphic, and archaeological sources. The sites where his cult was celebrated are often situated near water contexts: Selinunte, for example, lies near the mouth of the Hypsas, and although the existence of a specific sanctuary dedicated to Heracles is uncertain, his name appears in the city's pantheon, as attested by the Grande Tavola Selinuntina (IG XIV 268; cf. Coarelli, Torelli, 1984, 84). Similarly, at Poggioreale, along the same river, an inscription attests to the presence of a votive shrine (Piraino, 1959, 162: Το Η[ε]ρακλέος hιαρόν έμι, hέρξ[ε] δέ με Ἀρίστυλο[ς h]ο Ηερ[μ]ία hυιός), meanwhile, a stele depicting the hero was discovered near Colle Madore (Giangiulio, 1983, 796-797; for the figure of the shrine with Heracles at the fountain and for the reconstruction hypothesis, see Chiovaro, Vassallo, 2014).

In cities such as Messina, the existence of a sanctuary dedicated to Heracles Manticlus is also attested (Asheri, 1988, 7-9; Frisone, 2017, 160).

In Sicily, the hero's cult is therefore particularly connected to thermal springs. Other myths, such as the tradition according to which Athena commanded the nymphs to make waters flow for Heracles, emphasize the intertwining of local deities and heroic figures (Frisone, 2017, 147). Archaeological evidence confirms this relationship: terracotta figurines, ceramic vessels, and a louterion discovered in the area attest to both domestic and public cults associated with water and the hero (Di Nicuolo, 2020, 118). Diodorus (Diodorus 5.3) also mentions other springs connected to the labours of Heracles, such as Kyane and Arethusa in the Ionian area (notably, the sacrifice of oxen at the Kyane spring, Diodorus, 4, 23, 4). During the Archaic and Classical periods, the thermae loutrà (thermal springs) thus became sites of social and symbolic rituals, combining sacred dimensions with civic practice (Di Nicuolo, 2020, 122).

The association between Heracles, cattle herds, and sulphurous springs also reflects local Sicel traditions: the waters became meeting points for humans and animals, liminal spaces leading to the chthonic realm (Giangiulio, 2017, 12-13), and sites of celebration through the sacrifice of oxen (Giangiulio, 1983, 819-820).

As noted, numismatic evidence also attests to this connection: the obverse often depicts the head of Heracles, while the reverse features river deities or scenes related to aquatic environments (Bernabò Brea, 1950, 3; Guzzetta, 2004, 33-44; Imbesi, 2013, 253). The hero intervenes in labours connected to water, such as the second labour with the Hydra, emerging from the sea, or the fifth and sixth labours, where he diverts river courses and purifies marshlands (Frasca, 2017, 58-59; Locchi, 2010, 25). In this way, Heracles functions as a mediator between φύσις and the community, a role analogous to that of the nymphs of Segesta, who assist the hero by causing springs to flow (Rapisarda, 1916, 218-219).

Starting from the various findings, a coherent picture emerges regarding the hero and the thermal waters. Heracles, as protector and administrator of the waters, assumes a central role both in religious practices and in the civic organization of Sicilian cities. Springs, whether thermal or fluvial, were thus consecrated and incorporated into social rituals, and the hero became a symbol of mediation between nature and humanity. This persistent interaction between myth, natural phenomena, and the life of ancient communities underscores the importance of integrating archaeological studies with geological research and landscape history, to fully understand how ancient populations interpreted and valued the signs of nature, thereby constructing a cultural heritage deeply rooted in the territory.

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