

STUDI MICENEI ED EGEO-ANATOLICI NUOVA SERIE

4, 2018

STUDI MICENEI
ED EGEO-ANATOLICI
NUOVA SERIE

è una rivista dell'Istituto di Studi sul Mediterraneo Antico
del Consiglio Nazionale delle Ricerche, Roma

ISSN 1126-6651
e-ISBN 978-88-7140-959-7

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Stampa e distribuzione / Printing and distribution
Edizioni Quasar di Severino Tognon s.r.l.
Via Ajaccio 41-43 – 00198 Roma
tel. +39 0685358444, fax +39 0685833591
email: info@edizioniquasar.it
www.edizioniquasar.it

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Area della Ricerca di Roma 1, Via Salaria Km 29,300, 00015 Monterotondo scalo (Roma)
Autorizzazione Tribunale di Roma nr. 288/2014 del 31.12.2014

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HOW DIFFICULT? MOUNTAIN ROADS AND PATHWAYS REACHING ANCIENT MELID (MALATYA) IN SOUTH-EASTERN ANATOLIA: A RECONSIDERATION

Francesco Di Filippo, Lucia Mori

Summary

The reconstruction of ancient road systems is undoubtedly one of the main objectives of historical geography. However, tracing ancient routes – which formed pathways of cultural, economic and political interchange – remains often difficult, because of the scarcity of historical and archaeological sources, and of the inherent problems in the identification of ancient toponyms. This is certainly true for the south-eastern region of Anatolia in pre-Classical times: although epigraphic sources of different provenience do provide us with some information on ancient itineraries, many uncertainties and gaps in documentation still prevent an overall comprehension of ancient road systems. As a case study, the present article analyses the ancient site of Melid (Malatya), identified with the Arslantepe mound located in the Malatya plain. Ancient sources will be re-analysed with the help of computational modelling, which may fill in, at least partially, the gaps in the available documentation, simulating the impact of the social interactions and political changes over the evolution of an ancient road system.

INTRODUCTION

The site of Arslantepe, known from the Hittite and Assyrian cuneiform sources as Melid/Mal(i)tiya, lies in the namesake plain of Malatya, which is a semi-enclosed econiche surrounded by the steep Anti-Taurus ranges, except for its northern edge, which faces the gentler slopes of the Hekimhan mountains (Fig. 1). The region is characterised by a semi-arid climate, receiving about 400 mm of rainfall per year (Atalay 2006), with hot summers and cold, snowy winters. The valley is well fed with water by the Tohma Çay, whose course crosses the plain from west to east before emptying into the Euphrates. The presence of abundant ground water makes this region suitable for a flourishing agricultural production (Marcolongo, Palmieri 1988).

The valley's geographic location represents a natural crossroad of the rugged thoroughfares cutting through eastern Anatolia and, in political and cultural terms, has been both a cultural interface and a frontier with different cultures from Syro-Mesopotamia, Central Anatolia, and Transcaucasia.¹ Through the ages, however, Malatya has played different roles in the communication network of eastern Asia Minor. The bulk of information from pre-Islamic times comes from the Roman and Byzantine periods. In the Roman road system, Malatya does not yet appear as an interregional hub in the network of routes that linked Anatolia and Syria. An important military artery led eastwards from Ancyra through Caesarea to the Euphrates at Melitene, intersecting other routes along the eastern *limes* (Mitford 1996; 2013). The city appears in the *Itinerarium Antonini* as *caput viae* of four itineraries, as well as in the *Tabula Peutingeriana*, where it shares the same symbol of other important road knots, such as Samosata. Nevertheless, in this period the main route between Anatolia and Syria bypassed the Malatya region, cutting the Taurus range at the Cilician Gates (Talbert 2000, map 64, 67). On the contrary, in Byzantine (Early and Middle) times, the region became one of the main road-knots in the Taurus region alongside Kayseri, Kahramanmaraş, and Elbistan.²

1 For a recent reassessment of the historical concept of border applied to the Turkish territory, from prehistory to modern times see Baysal, Karakatsanis 2017.

2 Hild 1977, 32, with a schematic diagram of the main centres and their connections. Moreover, it is worth noting that, despite the general decline of most major Roman roads in between the later 4th and the 7th century AD (Belke 1998, 280-281; Haldon 2006, 135-137; Belke 2008, 300), those segments leading to Malatya continued to be in use and kept in good condition (Hild 1977, 84-103).



Fig. 1. Panoramic view of the Malatya plain, with the site of Arslantepe dominating the luxuriant cultivated fields. Courtesy Archives of the Archaeological Expedition in South-eastern Turkey (MAIAO), Sapienza Università di Roma.

As far as earlier historical phases are concerned, the reconstruction of the communication system for this region is difficult, because of the paucity of documentary sources. From the 2nd to the early 1st millennia BC, available evidence does not provide us with clear hints for the localisation of the route network. Specific archaeological markers – such as milestones, remains of paving, bridges, etc. – are not attested for such periods. Moreover, exhaustive descriptions or true itineraries registered by ancient geographers are also missing. To some extent, later road systems may help in filling these gaps,³ but such a methodological approach is prone to pitfalls. True enough, the Byzantine road system seems deeply influenced by the preceding Roman one and, in turn, these almost overlapping networks may reasonably have been traced on an earlier palimpsest of routes. However, it sounds risky to consider such roads as a good proxy for tracing the earlier ones, for a twofold reason: on the one hand, actual traces of the pre-classical route system are substantially missing; on the other, the technological and social developments that affected the region over time are overlooked in such analysis, thus making the comparison venturesome.

All this considered, a re-evaluation of the role played by natural pathways in the formation of early road networks could be of great interest. This may be supported by two complementary computational methods, which have already demonstrated their validity in the field of archaeological and historical research. On the one hand, the Cost Surface Analysis and the Least Cost Path (hereafter LCP)⁴ analysis provide meaningful hints about patterns of movement and interaction, supplying new keys of interpretation of the existing evidence and eventually proposing expected patterns, which are to be compared to the observed historical records.⁵ On the other hand, the Topographic Position Index (hereafter TPI) is a geomorphologic approach, which through analysis of the terrain's

³ The modern road system has often been taken as a starting point in the reconstruction of hypothetical ancient routes networks, see for example Ökse 2007.

⁴ At the most general level, the Cost Surface Analysis estimates the accumulated 'costs', in terms of travel time or energy expenditure, for moving outward from an origin (*e.g.* an ancient site) to a given location. The Least Cost Path analysis traces the presumed optimal path from the target location back to the origin itself.

⁵ For these methodological issues, see Herzog 2010; Bevan 2011; Bevan 2013; Herzog 2014. For adapting LCP method to historical sources see Di Filippo 2016.

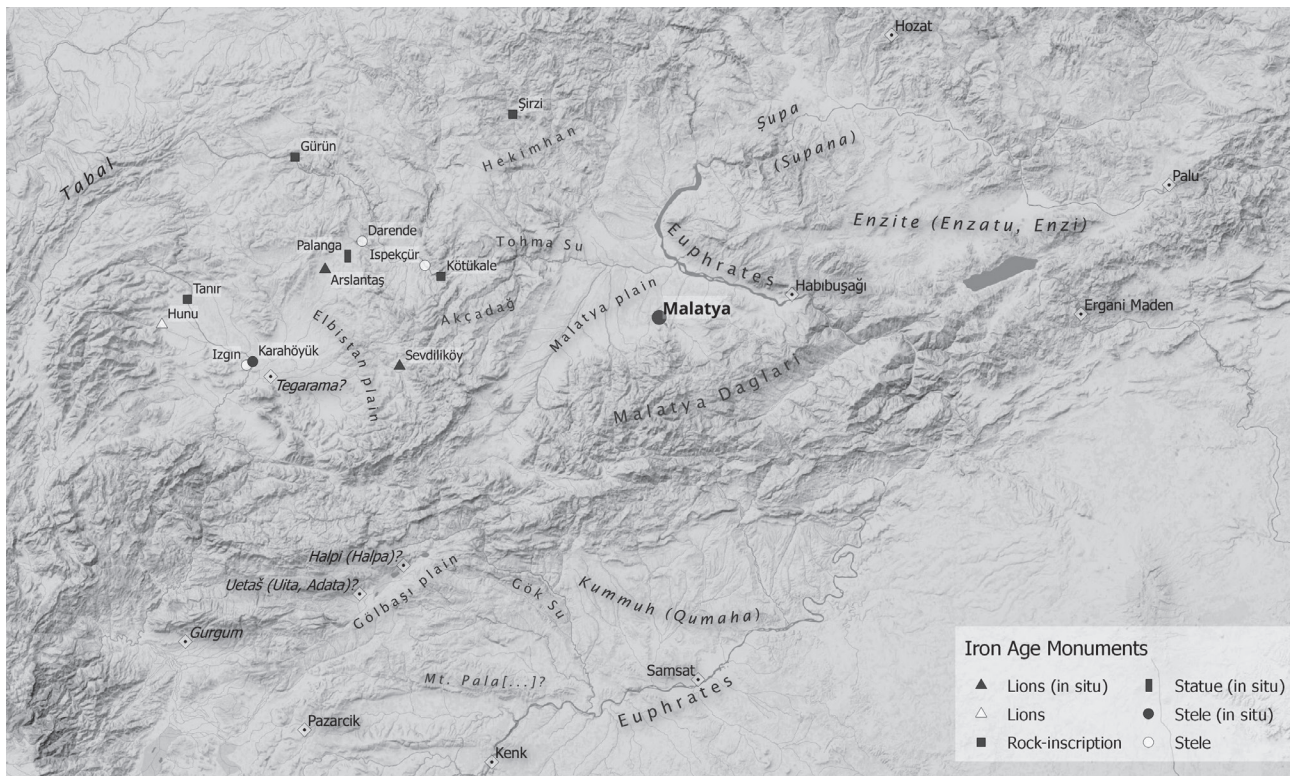


Fig. 2. Map of Malatya region featuring main place-names mentioned in the text.

morphometric parameters allows automated landform classification. In turn, this may represent a suitable parameter in evaluating friction costs of large-scale predictive models.⁶

Malatya and the surrounding regions offer a host of advantages for the study of the ancient road network with the support of these computational approaches. Two typologies of roughly contemporary historical sources are relevant to the present research: on the one hand, monuments, rock inscriptions and stelae of the local Melidean dynasty, which are widely spread throughout the region; on the other, Assyrian and Urartian historical sources dealing with military expeditions and battles around Malatya or in the nearby regions. Moreover, we have at hand excellent environmental data, which are crucial to both computational processing and predictive modelling.

2. THE ANCIENT SOURCES

2.1. *Hittite, Assyrian, and Urartian sources*

Explicit references to Malatya have not been identified yet in the Old Assyrian tablets published so far. Nevertheless, some sparse textual hints may indicate that already during the early centuries of the Middle Bronze age the plain of Malatya was crossed by merchants coming from Assur. For instance, Forlanini (2006, 168-169) identifies a route coming from Ergani Maden, linking a station in Z/Supana – roughly corresponding to the modern Elaziğ region⁷–

⁶ For a general introduction to the Topographic Position Index (TPI) model see Weiss 2001. At a preliminary stage, this tool has proved a valuable processing method also for studies related to archaeology (Verhagen, Drăguţ 2012; Knitter, Nakoinz 2018). For balancing Cost Surface models through landform classification see Beier *et al.* 2008.

⁷ This toponym, referred to as Išuwa or Şupa in later texts and equated to the classical Sophene, is located in the modern region of Elaziğ. See Barjamovic 2011, 128-130 (with references to the earlier bibliography) and more specifically Forlanini 2014.

with a station in Tegarama, to be located either in the Malatya plain or in the Elbistan plain.⁸ This itinerary would have crossed eastern Anatolia north of the Taurus range, passing through the Malatya plain, and then connecting to the route network of central Anatolia. The material evidence from the recent archaeological investigations at Arslantepe may confirm these early contacts. During the first quarter of the 2nd millennium BC, the local material culture, generally characterised by regional traits, shows the introduction of some specific north-central Anatolian features (Di Nocera 1998, 149-154). This is also supported by the remarkable discovery in 2007 of a cylinder seal related to the *kārum* period glyptic style, Kültepe level II (Manuelli 2013, 385-387).

Historical references to the site and the nearby regions are attested in the Hittite sources as well,⁹ but the information is again scanty, discontinuous and of little use for the reconstruction of the route network to and from the plain.¹⁰

The first concise description of routes leading to Malatya is reported in the middle Assyrian sources from the time of Tiglath-Pileser I (1114-1076 BC), who reached the region probably twice. On the first occasion, Tiglath-Pileser reached the “rebellious and insubmissive” city of Malatya (URU *mi-li-di-a*) from the east, at the end of his extensive military campaign across eastern Anatolia, in which he subjugated a coalition composed of 23 kings of Nairi (*ca.* 1100 BC). Even though in the annals this city is referred to as belonging to “the land of Hanigalbat”, it can hardly be different from the well-known Arslantepe¹¹: this political affiliation is commonly considered a scribal mistake. Its geographical horizon is in fact well depicted in the annals where the king describes the crossing of the Euphrates from east to west: “I pushed through rugged paths and perilous passes, the interior of which (iv 55) no king had previously known, blocked trails (and) unopened remote regions” (iv 52-57), the text then mentions 16 mighty mountains and continues stating: “I cut down *urumu*-trees which grow in the mountains, (thereby) constructed good bridges for the passage of my chariots and army, (and) crossed the Euphrates” (iv 68-71).¹²

The second time he reached Malatya,¹³ the city is clearly defined as part “of the great land of Ḫatti”. During this later campaign, Tiglath-Pileser reached the region on his way back from an extraordinary Mediterranean expedition, after claiming to have become lord of the “entire land of Ḫatti”, which, at this time, from the Assyrian perspective, was the land of Karkemish. The Assyrian king claimed to have imposed taxation on the king Ini-Teššup (II). Then, from Karkemish, he moved northward in the direction of Malatya (URU *mi-li-di-a*), even though his inscription does not specify any place-names along this route. Whether his itinerary be along the western bank of the Euphrates up to the Pazarcık plain (Zaccagnini 1993) or instead along the eastern bank of the river, up to the ford near Samsat, however, one can only infer that Tiglath-Pileser may have cut across the Gölbaşı Lake region, up

8 From a geo-historical perspective, given the lack of references of a toponym for Malatya during the Old Assyrian period, the problem of mobility through the plain is strictly bound to the location of the ancient site of Tegarama. This toponym is attested throughout centuries, from Old to Neo-Assyrian periods (with variations in spelling: Tegarama, Takarama, Tagarima, Til-karme, Til-garimme/u). Its traditional identification with the site of modern Gürün (classical Gauraina), in the narrow Tohma Su valley, is mostly based on a vague similarity of the two toponyms. On the basis of Hittite and Iron Age sources, several scholars suggested a location somewhere in the plain of Elbistan (Yamada 2006; Radner 2011; Hawkins, Weeden 2017, 288-289) and this is also the location that we assume for this place-name in the following discussion. Finally, it is worth noting that Forlanini (2006, 167-170) and Barjamovic (2011, 130-132 and 216-217), on the basis of separate lines of evidence, have suggested that during the Old Assyrian period, and possibly also during the Hittite Kingdom, the site could have been located somewhere in the Malatya plain (see also Astour 1979, 73, n. 32) and that Tegarama may have been relocated at least once in its history (Barjamovic 2011, 131). This region is in fact characterised by significant population mobility, either during the Hittite Kingdom (*e.g.* Shattiwaza treaty; see also Forlanini 2010 on the movement of deportees and mercenaries) or during the Iron Age – cf. Neo-Hittite inscriptions (*e.g.* Karahöyük and Izgin) possibly concerned with population resettlements (Harmanşah 2011, 65-77).

9 De Martino 2012 for the Old Hittite period, Torri 2007 for the Early Hittite Empire and Mora, Giorgieri 2004 for the last decades of the 13th century BC.

10 For the role of Malatya in the Late Bronze age and its relation with the Hittite empire see Manuelli 2013.

11 On this point, see Barjamovic 2011, 130 n. 404 and Bryce 2012, 99-100.

12 Grayson 1991 (RIMA 2 0.87.1, col. IV, ll. 43-101 and col. V, ll. 33-41). See also Ponchia 2004, 157-158.

13 The Assyrian king may have visited Malatya only once in 1100 *ca.*, but this visit was reported twice (Bryce 2012, 99-100). The first time in his annalistic record (RIMA 2 0.87.1, col. V, ll. 22-41), and subsequently in a broad account of Tiglath-Pileser's reign summarising a number of episodes which occurred at different times (RIMA 2 0.87.4, ll. 24-33). If so, Tiglath-Pileser reached Malatya only crossing the Euphrates from the East at the end of his extensive military operation across eastern Anatolia.

to the Reşadiye mountain pass, to descend then into the Malatya plain after having crossed the valley of Sultansu. This time also, the Assyrian king did not siege the city – a fact that could indicate the effectiveness of its defensive walls (Liverani 2012a, 338) –, limiting himself to receiving tribute from the Melidean king (Allumari).¹⁴ Finally, Tiglath-Pileser moved across the plain, forded the Euphrates river, and pushed his army to the conquest of the city of Enzatu (Enzite), in the land of Išūwa (modern Elaziğ region), and the land of Suhmu.¹⁵ Given the identification of Enzite¹⁶, he must have crossed the river at the ford between Pırot on the west bank and Izoğlu on the east bank, at the foot of the Kömürhan pass, which leads to the Elaziğ plain.

Thirty years later, in his accession year (*i.e.* 1073-1072 BC), Ashur-bel-kala moved his army across the Urartian territories and neighbouring regions. The text mentions several toponyms in fragmentary – therefore difficult to interpret – context. Some of them are of great interest to our analyses, as they belong to the Melidean geographic horizon. On his way back, the Assyrian king states that he marched through and brought extensive destructions to the countries of Mašgun (or Bargun) and Malatya (KUR *mi-il-d[i-a]*).¹⁷

During the reign of Ashurnasirpal II (883-859 BC), the city is mentioned – among many others – only in the list of foreign kingdoms' envoys at the inauguration of the king's new palace in Kalkhu. Further information on the Assyrian army moving up to Malatya (KUR *me-li-di* / KUR *me-li-da-a*), and consequently, on routes crossing the Taurus range, is provided by the inscriptions of Shalmaneser III (858-824 BC), Ashurnasirpal II's successor on the throne of Assyria. His campaigns are the most accurate sources describing the itineraries to reach the Malatya region in neo-Assyrian times.¹⁸ In 852 BC he received the submission of the Melidean king, during his 6th campaign. However, the Assyrian king and his army were still quite far from Malatya, having crossed the Euphrates at Kar-Shalmanassar (Til-Barsip, modern tell Ahmar) and having received tribute from the kings “on the opposite bank of the Euphrates” – among which Lalla the Melidean – at the site of Aššur-uter-ašbat (Pitru), on the river Sangura (modern Sājūr).¹⁹ Between 843 and 835 BC, he reached the Malatya region thrice.

During his 15th campaign (843 BC), he approached Malatya from East. The main theatre of operations was the land of Nairi, at the Euphrates' headwaters, which Shalmaneser reached crossing the Tunibuni pass, north of the Tigris sources. After bringing destruction to this region of eastern Anatolia, he pushed his army westward, along the Upper Euphrates valley: “on my return from the source of the Euphrates, I marched to the land Suhni (Suhmu). (...) Moving on from the land Suhni I approached the land Enzi (Enzite). (...) Moving on from the land Enzi (iii 55) I approached the Euphrates before the land Melid. I received tribute from Lalla, the Melidite. (...) I fashioned my royal statue (and) erected (it) by the Euphrates.”²⁰

During later military campaigns (836 and 835 BC), Shalmaneser reached the kingdom of Malatya – but probably not its capital – from two different routes coming south of the Malatya Dağları. The primary target of the 22nd campaign was Tabal (Grayson 1996, A.0.102.14). From the extended account of the annals, one can safely infer that Shalmaneser passed in the proximity of the Melidean country, even though his route did not cross the Malatya plain: “I crossed the Euphrates for the twenty-second time (and) received tribute from all the kings of the land Hatti. Moving on from the land Hatti I crossed Mount [...]inzini (and) received tribute from the peo-

14 Simon (2016) has recently proposed an identification of king Allumari with king PUGNUS-mili II, son of Arnuwantis I, attested in the Arslantepe reliefs.

15 Grayson 1991 (RIMA 2 0.87.4, ll. 24-33). On these toponyms and their geographical horizon in the *Indictment of Mida* see Forlanini 2014, 254 and 262 n. 45.

16 For this place-name refer to Forlanini 2014, 263-265 and Alparslan 2017, 214-215.

17 Grayson 1991 (RIMA 2 0.89.5, ll. 12') does not propose any integration for KUR *mi-il-d[i-x]* (the country of Mildu[...]). For this restoration see Liverani 2012a, 338-339.

18 For a reconstruction of Shalmaneser III's itineraries along the Euphrates see Yamada 2000 and Ponchia 2006.

19 Grayson 1996 (RIMA 3 A.0.102.2, col. II, ll. 81-86).

20 Grayson 1996 (RIMA 3 A.0.102.6, col. III, ll. 46-57). The toponyms Enzite and Suhmu are already known from Tiglath-Pileser's second expedition (cf. *infra*), and can be easily recognised in the Hittite place-names Hēnzuta and Zuḫma (*Indictment of Mida*). See Forlanini 2014, 262, see also Ponchia 2006, 207.

ple of the land Melid. I crossed Mount Timur (and) went down to the cities of Tuatti, the Tabalite” (A.0.102.16, 162’b-172’a). In the following year, instead, the military target is the kingdom of Malatya itself. Although the account is badly damaged, Yamada (2000, 214-216) has proposed an interesting restoration for this passage²¹: “[in my 23rd *palû*] I crossed the Euphrates (and) received [the tribute of the kings of Hatti]. (183’) I departed from the towns [of the land of Hatti], (184’) traversed Mt. Pala[...] and went down to [the towns of Lalla of Melid.] (185’) I [besieged and conqu]ered the city of Ue[tash, his fortified city (and)] (186’) [took] the booty of it. [I departed from Uetash] (187’) [and approached] the city of Tagari[mmu, his fortified city] (188’) came to me [and seized my feet. His gift] (189’) I received [and imposed upon him] tax and tribute. (190’) I departed from [Tagarimmu] (and) approached the city/tow[ns] [of ...]. (191’) The awe-inspiring radia[n]ce of the god Ashur, my lord, overwhelmed them.] (192’) They abandoned [the town(s) and fled to the mountain] to sa[ve their lives]. (193’) I destroyed their towns [and set them on fire.] (194’) From the 20 kings of the land of [Tabal, I received their gifts.]” (Grayson 1996, A.0.102.16, 181’b-194’).

The geographical horizon so vividly reported by the latter two texts allows us to identify more than one route across the Taurus range. The first one, leading to Tabal, crosses the mountains [...]inzini and Timur. Mt. [...]inzini is mentioned only in this inscription and has not yet been located in the Anatolian geography. Mt. Timur, which is also never attested elsewhere, has been identified with modern Tahtalı Dağları at the north-eastern end of the Anti-Taurus mountain range,²² but its location is conjectural, being based exclusively on the mention of Malatya in between the two mountains. More specifically, the inscription reports that a tribute was paid from “the people of the land Melid”, and not by the Melidean king himself, as it happened during the 15th campaign (843 BC), in which Shalmaneser “received tribute from Lalla, the Melidite.” If one also considers that none of this place-names is ever mentioned within those commonly referred to the Melidean geography,²³ this may be a hint that, in this occasion, the Assyrian army took a westernmost route in its approaching march to Tabal, a route that may lie west of the Elbistan plain.

As far as the second route is concerned, it is possible to put forward a more solid hypothesis, based on the identification of the place-name Uetaš not only with Uita in the annals of Sarduri II (CTU A 9-3),²⁴ but also with the Byzantine fortress of Adata (al-Ḥadath),²⁵ a stronghold which guarded the narrow valley leading from the Gölbaşı Lake region to the Elbistan plain, via the Nurhak road. Besides a weak homonymy, this equation is strengthened by the role of this fortress in the Byzantine era against enemies coming from the Euphrates, which is the same strategic defensive role attested centuries earlier against the Assyrian and Urartian armies. On this basis, one can infer a route from the Euphrates, possibly in the proximity of the Kenk display inscription, which crossed mount Pala[...]²⁶ and reached the fortress of Uetaš/Adata in the Gölbaşı Lake region. After this Melidean stronghold, the

21 This restoration substantially differs from Grayson’s edition, especially in the geographical sequence of the place-names, which are: the Euphrates, the city of [Melid], mount Pala[...], the fortress of Uetaš, the city of Tagaru[...]. Even though the toponym Tegarama is usually rendered in the Assyrian sources as DU₆(*til*)-*gl*/*karim(m)elu* (and never *ta-ga-ri-[im-mul/me]*, Yamada 2006, 224), however, the Yamada’s restoration appears more likely in that it adheres more strictly to the shortened account of the same campaign: “In my twenty-third regnal year I crossed the Euphrates (and) captured Uetaš, the fortified city of Lalla, the Melidite. The kings of the land Tabal came to me (and) I received their tribute” (Grayson 1996, A.0.102.14, 107b-110a).

22 Wäfler (1983, 191) suggests that Mt. Timur demarcates the border between the kingdoms of Melid and Tabal. See also Ponchia 2006, 212; Hawkins, Weeden 2017, 294, fig. 21.1.

23 Yamada (2000, 210-211) suggests that Shalmaneser marched either on the road along the Tohma Su via modern Gürün or through the Elbistan plain. However, the rock inscription of Gürün reports the name of three mountains presumably in the same region: Zinapi(?), Naharasa, and Nama-x-x. None of them can be easily equated either with the mount [...]inzini or the mount Timur in the Shalmaneser’s inscription.

24 Significantly, Uita/Uetaš, “fortified city”, is mentioned in this inscription in close geographical connection with Halpa, “lacustrine city”, which is located in fact in the Gölbaşı Lake region (Astour 1979, 13-14).

25 Barjamovic 2011, 131-132, n. 417, with references. The exact location of the Byzantine fortress of Adata is also yet unknown, even though there is a wide consensus on its location near the Inekli Lake (the southernmost of the three lakes characterising the Gölbaşı hydro-logic basin). See Hild 1977, 135-140.

26 If Shalmaneser crossed the river near Kenk, Mt. Pala[...] could be identified with the Karadağ mountain range that, still today, is the boundary between the provinces of Adiyaman and Gaziantep.

route wound along the Adata pass (darb al-Ḥadath), via the modern Nurhak road, up to the Elbistan plain, in which the town of Tegarama has to be located (see above, n. 8). Then he moved to another city, whose name is lost, but probably on the border with Tabal. In this circumstance also, Shalmaneser did not directly threaten Melid, crossing only its westernmost province.

From the end of the 9th and the beginning of the 8th centuries onwards, Malatya (*mī-li-ṭi₅-(i-)a*) and its neighbouring regions become the object of the growing Urartian military pressure. The geographical horizon gets more detailed, with specific descriptions of regions east of the Euphrates. The first king of Urartu who boasts to have received tribute from a Melidean king is Minua (*ca.* 810-780 BC). However, whether he was in fact able to cross the Euphrates and threat Malatya directly remains uncertain. Minua states to have approached the border of Hatti, but the westernmost place-name attested in his Palu inscription (CTU A 5-5) is actually Šupa – at this time, to be identified roughly with the classical Sophene –,²⁷ whereas an unnamed king of Malatya (URU *mī-li-ṭi₅-i-a*) is referred to as a tribute bearer. This may be taken as a hint of the Melidean *Realpolitik*, already attested in the Assyrian sources dating to Shalmaneser III's times: when facing the threat of a military invasion the “people of the land of Melid” preferred to pay tributes to the Assyrian king on his way to Tabal (22th campaign, 836 BC). Be this as it may, Minua seems to have followed a route along the northern basin of the Upper Euphrates, without crossing the regions south of the river. Minua mentions place-names such as Šebeteria (modern Palu), Ḥuzana (modern Hozat), and the land of Šupa.²⁸ Southern toponyms such as Enzite are not present in his display inscription. On this subject, Forlanini recently argued that this southern region could have been crossed only after the conquest of lands such as Urme (modern Muş) and Alzi in the upper Tigris basin (Forlanini 2014, 263), which entered under the Urartian influence only one generation later, from the time of Minua's son and successor. During the reign of Argišti – in his 3rd year (*ca.* 776, cf. Fuchs 2012, 151), although the pertinent inscription is badly damaged in some key passages (CTU A 8-3) –, it seems that the new Urartian king moved his army along the Niriba valley,²⁹ south of the eastern Taurus, up to the land of Tuatē³⁰ (Tabal), on “the left (?)” of the city of Malatya (URU *mī-li-ṭi₅-a*). Some years later (*ca.* 753)³¹ another Urartian king, Sarduri II, reached Malatya (URU *mī-li-ṭi₅-a*) and defeated his king Ḫilaruada. The rock inscription of Habibuşağı (CTU A 9-4) is particularly rich in details, being probably the most circumstantial account of the political geography of the region between Arslantepe and the Euphrates. An exhaustive analysis of its content is out of the scope of the present article.³² It suffices to say that Sarduri's inscription clearly points out a route leading from eastern Anatolia to the Euphrates crossing at Pīrot – on its eastern shore, just before the river runs through a series of cataracts and a narrow gorge leading down to Kummuh –,³³ in the near proximity of which the Habibuşağı inscription was carved.

Ten years later (743 BC),³⁴ the Assyrian empire and Urartian kingdom clashed at the battlefields of Kiştan and Halpi (Urartean Halpa). This crucial episode, as well as its political background, is reported by both Assyrian and Urartian sources, offering us a unique opportunity to evaluate the events from a more complex perspective. Sarduri's inscription says: “io marciai contro il paese di Qumaḫa; la città di Uita, città reale era fortificata, in battaglia la espugnai, la città di Halpa, città reale, che era lacustre, io conquistai. La città di Parala, città reale, cinsi d'assedio(?)” (CTU A 9-3 IV, ll. 47-52).³⁵ This itinerary strongly suggests that the Urartian king, this time, opted for a route south

27 For a description of the evolution of the political geography of this region see Forlanini 2014.

28 Palu display inscription (CTU A 5-5).

29 For the toponym Niriba (Urartian)/Nirbu (Assyrian) see Liverani 1992, 37-38 and Forlanini 2012, 285.

30 It is generally accepted that this expression is a generic reference to the dynasty of Taute/Tuwate of Tabal (Weeden 2010).

31 According to Fuchs (2012, 154), this campaign took place between 753 and 752 BC.

32 For a full overview of the geographical horizon of these sources refer to Forlanini 2012, 281-287 and Forlanini 2014, 265-264.

33 This section of the river through the Taurus range represents a natural frontier more than a passageway (Barjamovic 2011, 216).

34 Fuchs 2012, 154. Astour (1979, 14) dates this episode between 746 and 745 BC.

35 Salvini 2008, 426: “I marched against the land of Qumaḫa. The town of Uita, royal town, a fortified city, I conquered it in battle. The city of Halpa, royal town, lacustrine city, I conquered it. The city of Parala, royal town, I besieged(?) it”.

of the Malatya Dağları, because he approached the kingdom of Qumaḥa (Assyrian Kummuh) fording the Euphrates probably near Samsat.³⁶ On the basis of the Bahçecik inscription (CTU A-9-18), it is possible to infer that during this phase of Sarduri's reign a wide region east of the Euphrates, more or less corresponding to ancient Isuwa, was under the direct control of the Urartian kingdom: from Malatya and Kummuh along the river to Arme (with its capital Niḥria) and Ḥašime in the south.³⁷ Then Sarduri pushed his army to the conquest of the strongholds of Uita and Halpa in the province of Kummuh (the location of Parala remains unknown). As mentioned above, there are good reasons to equate Uita both to the Assyrian Uetaš, mentioned ninety years earlier by Shalmaneser III, and to the Byzantine fortress of Adata (al-Ḥadath). Halpa, also featured in Tiglath-Pileser III's inscriptions as Halpi, must be located in the lacustrine plain of Gölbaşı, in close geographical connection with Uetaš/Uita. After the battle and the defeat of Sarduri, Tiglath-Pileser III forced his enemy to retreat in his own country: "In order to save his life, [Sardu]ri fled at night and (thus) [escaped] very quick[ly] before [sun]rise [... With an arrow that cuts] off lives, I drove him back to the bridge (crossing over) the Euphrates River, on the border of his land."³⁸ In a different inscription Tiglath-Pileser III gives more details on the battle itself: "[Be]tween the lands Kištan and Ḥalpi, districts of the land K[ummuhu], I utterly defeated them and ... With the blood of] their [warr]iors [I dyed] the Sinzi River as red as dyed wool".³⁹ Now, the Sinzi River has been equated with the classical Singas (modern Göksu, cf. Astour 1979, 16), a river which flows in a deeply incised valley along the southern foothills of the Malatya Dağları (from the Gölbaşı plain to the Euphrates). This implies that Sarduri's retreat ran along the southern slope of the same mountain range. Accordingly, the bridge crossing over the Euphrates River referred to by Tiglath-Pileser III cannot be at Pirot (Malatya region, cf. *infra*), but must be located at the eastern border of Kummuh, probably near the well-known ford at Samsat.

After this crucial episode, available sources begin to be less revealing as far as the routes across the Taurus range are concerned. Urartu seems to be no longer able to threaten the Assyrian hegemony in this region. At the same time, the Assyrian 'exploration' phase came to an end, while a new era of direct control of the fringe countries began (Liverani 2017, 91-93). Thus, for instance, in the account of Sargon II's campaign against Malatya (in his 10th year, 712 BC) a very detailed description of the Melidean geo-political dimension is provided, with the mention of an array of boundary fortresses strengthened by the Assyrian king against Urartu, Muski and probably Kaska.⁴⁰ However, this description is not of great use in the present context: even though one may speculate that these fortresses could have guarded important accesses to the Assyrian province, the locations of these toponyms is far from being certain. Moreover, the account moves rapidly from the description of political relationships, through Sargon's personal feelings ("in the anger of my heart"), to the scenario of the battle (Morello 2013). The author of the text is apparently not interested in describing the actual itinerary, eventually enabling Sargon to smash Malatya "like an earthen pot."⁴¹

To summarise, with a single exception all Iron Age large military expeditions having Malatya as primary target share a notable feature: whether they stem from Assyria or Urartu, they invariably threaten Arslantepe approaching the site from east, from the region known as Enzite (modern Elaziğ plain).⁴² On the contrary, the itineraries that lead to Tabal apparently never cross the Malatya plain. Sometimes they pass through the western provinces of the kingdom (*i.e.* Tegarama in the Elbistan plain). Also, when the Melidean people or the king himself pay tribute to an approaching army, they do so far from their capital. The unique exception to this general scheme

36 For a different opinion see Astour 1979, 14-17, even though his interpretation could not count on the Bahçecik inscription, which was discovered only after his study.

37 For a focus on the geographical horizon of this inscription see Forlanini 2004, 416-417.

38 Tadmor, Yamada 2011, 35 (RINAP 1, Tiglath-Pileser III 10, ll.10'-13').

39 Tadmor, Yamada 2011, 122 (RINAP 1, Tiglath-Pileser III 47, obv. 47-48).

40 See Yamada 2006, 230-231 and Fuchs 1993, 125-127, 326.

41 In this new phase, several Assyrian sources refer to Malatya (see Liverani 2012a, 341-344).

42 The itinerary from Muş to Elaziğ, which could lead also to the Malatya plain, has been defined as the "outer circumvallation" by Liverani (1992, 143).

is Tiglath-Pileser I's expedition, on his way back from the Mediterranean sea.⁴³ This apparently differed from the campaigns of later Assyrian kings and was characterised by an 'explorative' nature, being mainly commercial and peaceful in its purpose (Liverani 2014, 422).

2.2. *Melidean sources*

Textual evidence from the Melidean kings covers a time-span roughly from the 12th to the 8th century BC (Hawkins 2000, 282-288). These inscriptions provide evidence of the local dynasty's effort to organise its territory, which presumably extended from the western shores of the Euphrates river to the plain of Elbistan in the west, from the modern sites of Gürün and Şırzı in the north to the lacustrine plain of Gölbaşı in the south. These sources describe acquisitions of new lands, displacements of the population inside the kingdom,⁴⁴ and several building activities, either new settlements or roads leading to these new outposts (Fig. 2). The evidence concerned with the latter topic is of great relevance for the present research. The Melidean king Runtiyas carved two rock inscriptions, respectively at Gürün in the Upper Tohma Su valley⁴⁵ and Kötükale on the Middle Tohma Su.⁴⁶ The Gürün rock inscription commemorates the king's reorganisation of the city of Taita(?) and its surrounding region,⁴⁷ as well as the settlement of a new city. The Kötükale inscription records the construction of a "stone" road along the natural pathway running along the Tohma Su river. Remarkably, this monument is located on a rocky spur, which obstructs the natural passageway linking the Malatya plain with the new settlement.

More recently, a new interpretation of the rock inscription of Şırzı⁴⁸ has provided new insights on the building activity of the Melidean kings, concerned with the road network in the region. Simon (2014) reads the group [i]-MARA PES₂.PES-*pa-mi-na* (*immra-tarpamma/i-*) in the first line of the inscription as a compound term for 'country-side road, the road in the countryside', *i.e.* a 'highway', thus clarifying the object's nature of this celebrative inscription. This monument is located presumably on the border of the kingdom, in the middle of the gentle slopes of the Hekimhan range, along the route which connected the plain with the Sivas region (and then to central Anatolia), in the near proximity of a pre-modern road from where at least the lowest part of the inscription is visible (Bossert 1954-56, 62).

If one considers the anepigraphic monuments of the dynasty, such as the statues in the shape of portal-lions, the emerging picture is even more revealing. These sculptures, typical of the Iron Age kingdom of Malatya, are scattered throughout the open country and have no apparent relationship with archaeological remains (settlements, surface scatters of pottery sherds, etc.). Their position is however not random. When plotted on a TPI map, the Sevdiliköy sculptures (Eralp 1998) are located precisely at the eastern margin of the Elbistan plain. They lie at the 'entrance' of the low ridges which separate Elbistan from Malatya, just before a sudden alternation of high ridges and canyons, in the proximity of a U-shaped valleys system, which may well be considered as a natural passage across the mountains (Fig. 3).

The position of the lion sculptures of Aslantaş, located 15 kilometres *ca.* south of Darende (Hawkins 2000, 329), is equally significant. This anepigraphic monument, apparently *in situ*, shares with the lions of Sevdiliköy the character of a landmark erected in open country, with no apparent traces of building related to it. It is placed at the highest point of the plateau, which connects the Elbistan plain with the road along the Tohma Su.

43 On the question of how many times Tiglath-Pileser approached Malatya see above ft. 13 (cf. Bryce 2012, 99-100).

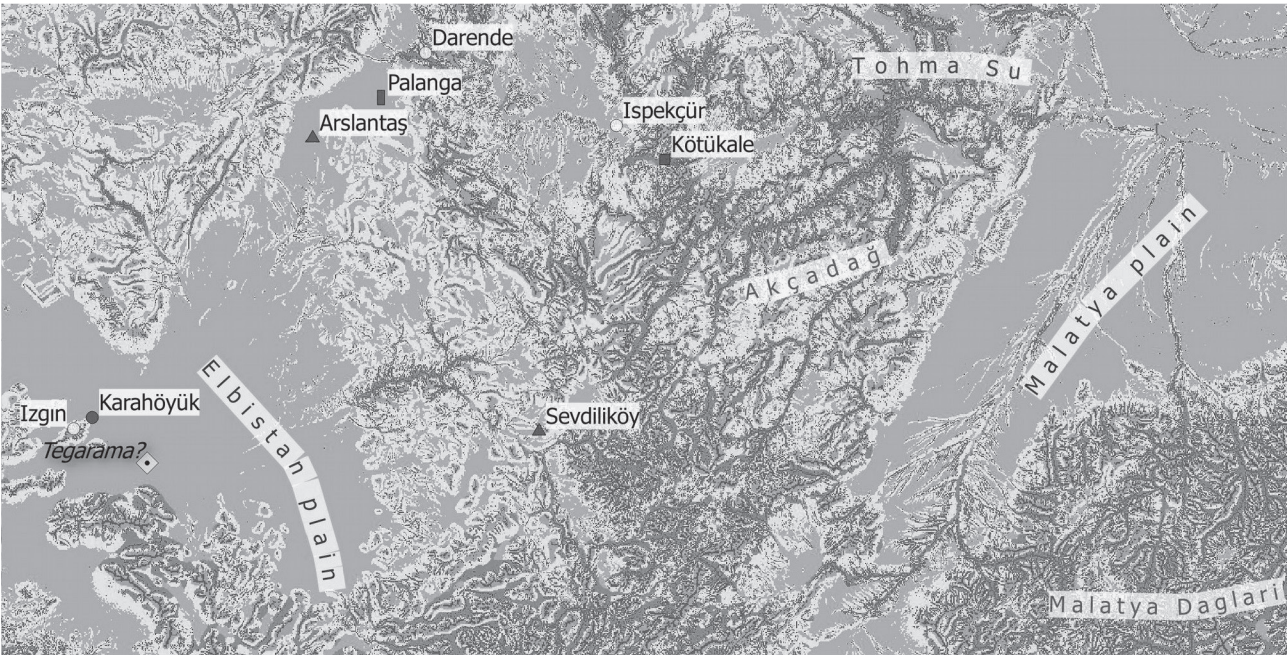
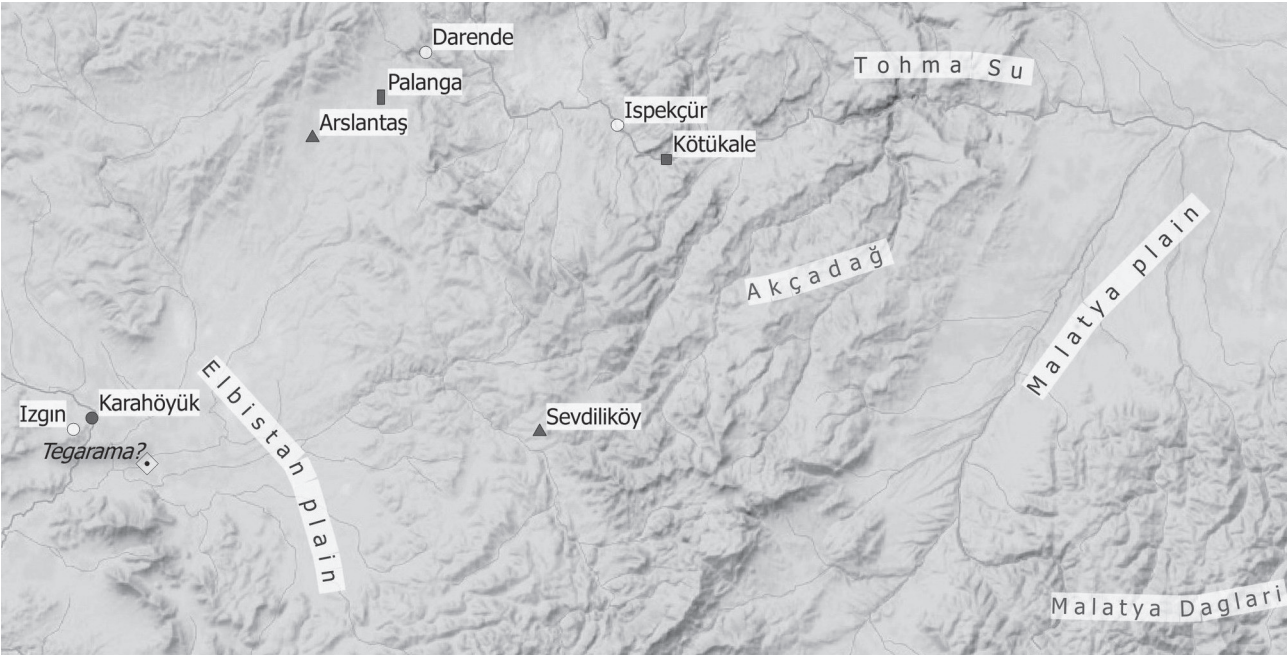
44 See Barjamovic 2011, 131-132 with reference to the case of the Tegarama people.

45 Hawkins 2000, 295-299 (dated to the 12th century BC).

46 Hawkins 2000, 299-301 (dated to the 12th century BC). This rock inscription was originally *in situ*, but today is lost (buried, damaged or destroyed).

47 The city of Taita(?) is also mentioned in the Izgin inscription, and it was possibly located in the Elbistan plain (Harmanşah 2011, 76). However, the Gürün monument is *in situ*, whereas the Izgin stele has been found displaced in a cemetery near the village of Izgin (Hawkins 2000, 314-318).

48 Hawkins 2000, 322-324 (dated to the early or mid-8th century BC).



TPI classes

- | | | |
|---------------------------------------|----------------------------------|--|
| ■ Canyons, Deeply Incised Streams | ■ Plains | ■ Midslope Ridges, Small Hills in Plains |
| ■ Midslope Drainages, Shallow Valleys | ■ Open Slopes | ■ Mountain tops, High Ridges |
| ■ Upland Drainages, Headwaters | ■ Upper Slopes, Mesas | |
| ■ U-shaped Valleys | ■ Local ridges, Hills in Valleys | |

Fig. 3. Detail of mountain ranges dividing Elbistan from Malatya plain: topography and TPI (Landform Classification based on R1=100m and R2=1000m).

3. THE ANALYSES

As far as the environmental data are concerned, one should consider that, in terms of macro-regional scale, the topography of this area has changed little since ancient times, except along the Euphrates valley, where the Cappadocian section of the river has been flooded by the artificial basins of Keban and Karakaya. For this reason, the first step of our analysis has concerned the reconstruction of the ancient topography. A new Digital Elevation Model (DEM) has been generated with topographical data extracted from Soviet and Turkish military series (*Harita Genel Müdürlüğü*) preceding the dams' construction.⁴⁹

At a smaller geographical scale, however, critical environmental changes occurred over time. A close look at the results of the field survey coordinated by Di Nocera, reveals a lack of settlements in the broad region west of the modern urban agglomerate. As it has been clearly pointed out by the geomorphological analysis, this is probably due to significant erosion phenomena (Di Nocera 2011, 3-4 and figs. 2, 3, 4).

Given the medium geographical scale of the analysis, and keeping in mind that the present-day landscape cannot be taken safely as a proxy for the ancient one, we decided to focus on those areas where both environmental and cultural phenomena that occurred over time presumably had a minor impact on the ancient geography. An array of starting locations for the Least Cost Path analysis has been identified along the interface between the plain of Malatya and the surrounding mountain regions.⁵⁰ These locations, on the base of cultural and environmental factors, have been assumed as potential nodes of the ancient network, as illustrated in Figs. 4-5.

The easternmost starting location may be safely located at the proximity of the Euphrates crossing between Pirot, on the west bank, and Kömürhan or Izoğlu, on the east bank (Figs. 4-5, no. 1). This is probably the place where Shalmaneser III passed during his campaign in 844 BC (Hawkins 1995, 88-90) and where he might have shaped his "royal image" (Liverani 2012a, 339). This is also the findspot of the westernmost display inscription of Sarduri II (Habibuşağı, CTU A 9-4).

As far as the southern routes through the Malatya Dağları are concerned – such as towards the region of modern Kahta and along the great bend of the Euphrates –, the multi-period site of Fırıncı Höyük has been considered here (Figs. 4-5, no. 2). Its strategic location, at the feet of the Kubbe Geçidi (Kubbe mountain pass), is proved by the long occupation history, from at least the Early Bronze Age to the Iron Age. This is also suggested by the archaeological evidence from the nearby natural hill of Fırıncı Köyü Kuzeyi, where traces of an occupation from the Roman to the Early Byzantine period have been found (Di Nocera 2011).

A further starting location for a pathway to the south, towards the region of Adiyaman, could be located in the mouth of the narrow valley which leads southwards from the Malatya plain, through the Sazlıca/Abdulharap Golü (modern Çat Barajı) and the Merkezer pass to the environs of Adiyaman⁵¹. According to the TPI analysis, the two geographical locations seem to be linked by an interconnected system of U-shaped valleys, which cut across this sector of the Malatya Dağları, although it may have not been the most accessible path. Except for the hills at Gözbaba Ziyareti Tepe, which lie at as the crow flies distance of less than 10 km from the beginning of the trail, no contemporary sites have survived in this area. Due to the importance of a possible direct link to Adiyaman, the location of the modern village of Gündüzbey will be here considered as a starting point for our model (Figs. 4-5, no. 3).

The origin for the south-western route towards the lake region of Gölbaşı has been tentatively identified in the site of Taşvanburun Tepe (Ören Tepe) (Figs. 4-5, no. 4), in the area of the later road-knot of Keramision (Hild 1977, 100-103). Taşvanburun Tepe represents the largest *tepe* in a small cluster of 6 mounds, lying on the north-western slope of the Malatya Dağları. On the basis of surface findings, it can be dated to the Early and

49 The method is described in Alcántara *et al.* 2010.

50 This interface has been outlined by extracting a surface with a gradient lower than 7°, that is flat land, from our original Digital Elevation Model (DEM). The resulting output has then been compared against morphometric parameters of the landscape (TPI analysis) in order to evaluate the most suitable regions for crossing rough terrains.

51 The Great Britain Naval Staff Intelligence Department "Turkey" (War Office 1919, route 154), on an authority dated to 1902, describes this route as a bridle path, in some traits difficult even for laden pack-animals.

Middle Bronze Ages – no traces of either Late Bronze Age or Iron Age occupation are yet documented, neither for Taşvanburun itself nor for the cluster as a whole (Di Nocera, personal communication).

Finally, the above-mentioned dearth of archaeological sites along the western edge of the Malatya's basin has pushed us to consider later historical evidence for the identification of a serviceable starting location. The city of Arka (Akcadağ, formerly Arga) is a good candidate (Figs. 4-5, no. 5). It is frequently mentioned as a terminal of mountain tracks from and to the Elbistan plain, as well as for the route leading to Darende and Gürün, at least from Roman times. This small network is also mentioned in Byzantine records and more recently by 19th century British intelligence reports and maps.⁵²

The first set of routes have been extracted on the base of the above-mentioned starting locations.⁵³ These routes have been computed by balancing significant environmental variables with the distribution of archaeological and historical documents. Mountain passes and the topography as a whole, hydrologic network, soil properties and some attributes of the present day land cover – such as the relationship between elevation and the line of trees –, have been considered as semi-permanent conditions of the environmental context and thus as serviceable proxies for our understanding of past interaction behaviours.⁵⁴ On the other hand, in order to avoid the setting up of a meaningless deterministic model, a selection of historical features have been introduced in the computational process as 'points of attractions'. The above-mentioned distribution of the Iron Age monuments, settlements, and inscriptions, as well as some hints from cuneiform records,⁵⁵ represent the most valuable source of information for the setting up of our geographical analysis.

Due to the lack of historical sources to be used as points of attraction for the southern pathways, a second set of routes has been processed on the base of the general model of the first set (Figs. 4-5). As a matter of fact, the first set shows some recurring features, which can be used for the modelling of a similar pathway system, at similar environmental conditions. Thus, for instance, the first set of routes shows that:

- a. mountain pathways tend to follow ridge-lines and to avoid mid-slope tracks along contour lines, probably because they require construction work;
- b. if these ridge-line tracks have too many ups and downs, a lower route, preferably with south or east aspect is preferred;
- c. large drainages are crossed at the gentlest possible locations;
- d. the tendency of avoiding watercourses, a common feature of environmental settings with more gentle gradients and referred to as "hydrophobia" (Fiz, Orenco 2008), is not apparent: on the contrary, pathways seem to run parallel to streams as much as possible and several crossings are documented.

The last step of our analysis concerns the comparison between the two sets of routes, the so-called "historical dependent routes" and, on the other side, the one being extracted through similar physical attributes and computed by the model.

52 Talbert 2000, map 64; Hild 1977, 99 and map 7; War Office 1919, *e.g.* route 87; Topographic series *Eastern Turkey in Asia*, sheet 16, Sept. 1902. Given the significance of this site in the cross-regional communication network during later historical phases, some scholars have suggested that this could be a good candidate for Hittite and Early Iron Age toponyms featured in written sources. Astour (1979, 73, n. 32), for instance, suggests to locate Tegarama in the vicinity of Arka.

53 The Accumulated Cost Surface has been computed with the anisotropic module *r.walk* (Fontanari *et al.* 2013; Herzog 2010; 2013), whereas pathways have been traced with *r.drain* (Gietl, Doneus 2008). Both the modules are implemented by the Open Source software Grass GIS 7.

54 Our model is based on the following weighted parameters: (a) slope (70%). The slope of the terrain has been empirically demonstrated to be the most important factor influencing both walking speed and energy expenditure (Kondo, Seino 2010), as it is apparent in the vast majority of path modelling studies but a handful (Herzog 2014, Table 1); (b) hydrology (15%). Except for the Euphrates, the Tohma Çay and few others, the region is characterised by the lack of substantial rivers, most of which usually dry up in late spring; (c) flood hazards (10%). This parameter, to be paired with the overall hydrologic network, is essential for computing travel behaviour (Macchi Jánica 2001). This environmental constraint, in terms of a tendency to become waterlogged and accumulate mud along ancient trackways, is frequently mentioned as a limiting factor also for modern travellers (von der Osten 1930, 105-107); (d) soil composition and land cover (5%).

55 For instance, references to the season of the year allow to predict a general model of the weather conditions.

Further considerations on both the physiological effect of gradients on energy expenditure in humans, and on the impact of a steep slope on wheeled transport, help clarify the distinctive nature of these routes.

For humans, the optimal gradient is within the range of 6 and 8 degrees: by walking uphill at a higher gradient will cause a proportional energy loss, whereas by walking downhill this measure represents the lowest metabolic expenditure (Minetti 1995). The critical slope for walkers, as a compromise between velocity and metabolic efficiency (Llobera, Sluckin 2007), is met at about 14 degrees, but it appears that gradients up to 22 degrees might be still reasonably efficient (Herzog 2010, 377). More generally, the critical slope for vehicles is less than that of walkers: according to available researches, the critical slope for wheeled vehicles usually do not exceed 5 degrees, even though in some cases it may rise up to a maximum of 12 degrees (Grewe 2013, 125-127, referring to Roman roads).

Thus, if we consider the effects of these parameters on movement patterns, the routes leading westward to Elbistan and Gürün – significantly those that have been processed with cultural features as points of attraction – or the route towards Maden, show that only a very few road segments lay above the critical walking gradient (22 degrees; cf. Fig. 4, dots on routes). In other words, they appear to be natural passageways through the Taurus range. On the contrary, the routes leading south from Malatya to Adiyaman, to Kahta, the one that runs almost parallel to the great bend of the Euphrates, and some traits of the route towards Gölbaşı, show several segments which lay above the critical gradient of 22 degrees (Fig. 4, dots on routes).

The routes' system is even more affected by the mechanical constraints inherent to wheeled vehicles mentioned above. Assuming a critical slope at about 12 degrees, the use of carts and wagons in this area is limited, also because of the steep mountains which surround the plain along all its edges, except for its northern one (Fig. 5, dots on routes). The computational model suggests that only a consistent stretch along the route to Gürün – after the steep ascents of the Akçadağ – is suitable for this kind of transport, whereas the remaining segments lay only in within intra-mountain valleys and are of a negligible length.⁵⁶

This, of course, does not mean that these routes were impracticable. Informal paths, even across impervious mountain ranges, had always been a prerequisite of social interaction, as well as an essential component in the formation of broader networks of communication (Helbing 1997; Whitley, Burns 2008). However, with the emergence a more structured route system capable to host large groups of individuals and goods – as in the case of a long-distance trade network or for the augmented necessities of the military logistic –, the above-mentioned critical slopes mark the area where construction works are required for transit. In other words, the proposed critical slopes represent the transition maximum where the use of switchbacks and hairpin bend instead of a direct uphill or downhill route becomes more efficient (Llobera, Sluckin 2007, 214-217).

4. CONCLUDING REMARKS

Taking a diachronic point of view, these 'difficult routes' (Figs. 4-5) apparently implied a difference in the fruition of the natural environment by the ancient communities. The engineering of switchbacks and hairpin bends along large sections of mountain routes, as well as other construction works such as ridgeways or paving, require both skills for their set up, and, above all, the availability of human and natural resources. Both were probably unavailable to the local Melidean élites during the first centuries of the Iron Age.

The local kings rhetorically boasted the foundation of new cities, the (re)organisation of population within a renewed agricultural landscape, and the setting of new roads to connect the nodes of the regional polity (Harmanşah 2011, 65-77). It is worth noting, in this respect, that the Runtiyas' inscription at Kötükale records the setting up of a "stone" road exactly at the intersection of the Middle Tohma Su River with the rocky spur, which

56 For references on wheeled transport in Anatolia see Barjamovic 2011, 20-23. The author pointed out that the available Old Assyrian sources never mention this kind of transport in the region east of the Euphrates, whereas some texts indicate the possibility of such a traffic between the river and Kaneš. The toponyms linked by this alleged wheeled transport, Timelkiya, Hurama, Zalpa, and Mamma, however, point to a geographical horizon south of the Malatya Dağları (Barjamovic 2011, 19-21 and n. 92). For the methodological problem of vehicle traffic in Anatolia see French 1974, 144-148; French 1993.

obstructed the natural pathway to Darende. Early descriptions of this relief (for instance von der Osten 1930, 102-104), mention the presence of “caves” associated with the inscription, perhaps ancient tunnels through the rock. Even if it is impossible to determine if Runtiyas’ inscription actually refers to these tunnels, the monument lies precisely along a segment with gradients higher than 22 degrees, which would require some construction works to be accessed. Nevertheless, as it also emerges by the TPI analysis, the route along the Tohma Su is primarily a natural passageway. The intervention of the Melidean king concerns only a very limited part of this road.

Notwithstanding this early attempt to manage the plain and some short stretches of mountain routes, the actual scale of the interventions implied in the rhetoric of these royal inscriptions should be pondered also in the light of the evidence emerging from the renewal of the Late Bronze and Iron Ages excavation at Arslantepe (Liverani 2012b; Frangipane, Liverani 2013; Manuelli 2013; Manuelli, Mori 2016). The traditional historical interpretation, mainly based on the lapidary display inscriptions of the Melidean dynasty, frames the flourishing of the local élite after the collapse of the Hittite kingdom in terms of continuity. On the contrary, the archaeological excavation at Arslantepe pointed out a series of breaks in this alleged continuity, *i.e.*, a “process of decay and recovery”, which appears to fit better into the contemporaneous historical phenomena, characterising similar Late Bronze Age polities during the Early Iron Age. The early kings of Malatya are the ones more intimately connected with building activity, as documented in a series of inscriptions scattered across the region, as well as in the earliest orthostats from the Post Imperial Gate (A1278) (Manuelli 2012; Frangipane, Liverani 2013; Manuelli, Mori 2016, 222-224). The control on the plain by these early rulers, claiming to be descendant of the Karkemish royal family, and producing imposing monumental architecture and Luwian inscriptions, apparently weakened by the 10th century BC, possibly due to the flourishing of Karkemish. Archaeological evidence recently unearthed at Arslantepe, dating to the transitional period at the beginning of the Iron age, shows the building of an impressive fortification wall, in turn related to the rebuilding of the Lion’s Gate, contemporary to the flourishing of these early rulers, then followed by a destruction of the fortification, which was never finished. A further architectural phase was also uncovered but appeared to be less monumental than the previous one (Manuelli, Mori 2016, 216; Frangipane *et al.* 2018). This intermittence of a centralised power is a distinctive character of Arslantepe, throughout its history. As Frangipane evidenced, sharp and repeated breaks in continuity may have indeed affected the development of the site over millennia. Features and trends emerging from the long-lasting excavations of the early-historic Arslantepe appear to be comparable to the envisaged arrangement of the settlement during the Late Bronze and Iron Ages: “in both cases, the centre of Arslantepe was monumental and small in size and was a kind of citadel, certainly fortified in the period of the Hittite and Neo-Hittite state; in both cases the sequences were characterised by very sharp breaks and discontinuity, which are distinctive traits in the history of this site.” (Frangipane, Liverani 2013, 349-352).

This fluctuation in the nature and duration of a centralised power may have had a significant influence on the way local élites experienced and shaped the Melidean landscape. Although research is still preliminary, one may put forward the hypothesis that these repeated breaks in continuity did not favour the engineering of a permanent route network over broken and steep terrain. Moreover, the geo-political location of the Malatya plain – crossroad of cultures but also a somewhat peripheral region from the perspective of the different conquering powers (Hittites, Assyrians, and Urartians) – did not stimulate the burdensome effort of opening new routes through the mountain landscape surrounding the plain.

Both historical evidence and the proposed pattern of movement strongly indicate the existence of a main east-west route, which linked the regional networks of the Elaziğ region to the Central Anatolian world and beyond, whereas up to the Middle Iron age the Malatya Dağları was likely not crossed by major routes. This segment of the eastern Anatolian network appears as a later adjunct and will be developed only in the Classical period. The absence of any contemporaneous archaeological evidence across the Malatya Dağları is probably the most distinctive evidence. It is even more revealing when paired with archaeological remains of later periods, for example from Roman up to Byzantine times, when the organisation of a vast and interconnected network of communication to and from the plain of Malatya also developed through the Malatya Dağları (Fig. 6). In earlier times the regional circulation was apparently based on the interconnection of small segments of routes, rather than roads. These stretches were presumably arranged according to the natural passageways, as a result of a bottom-up process which linked sites to one another and, in turn, regional network clusters to one another.

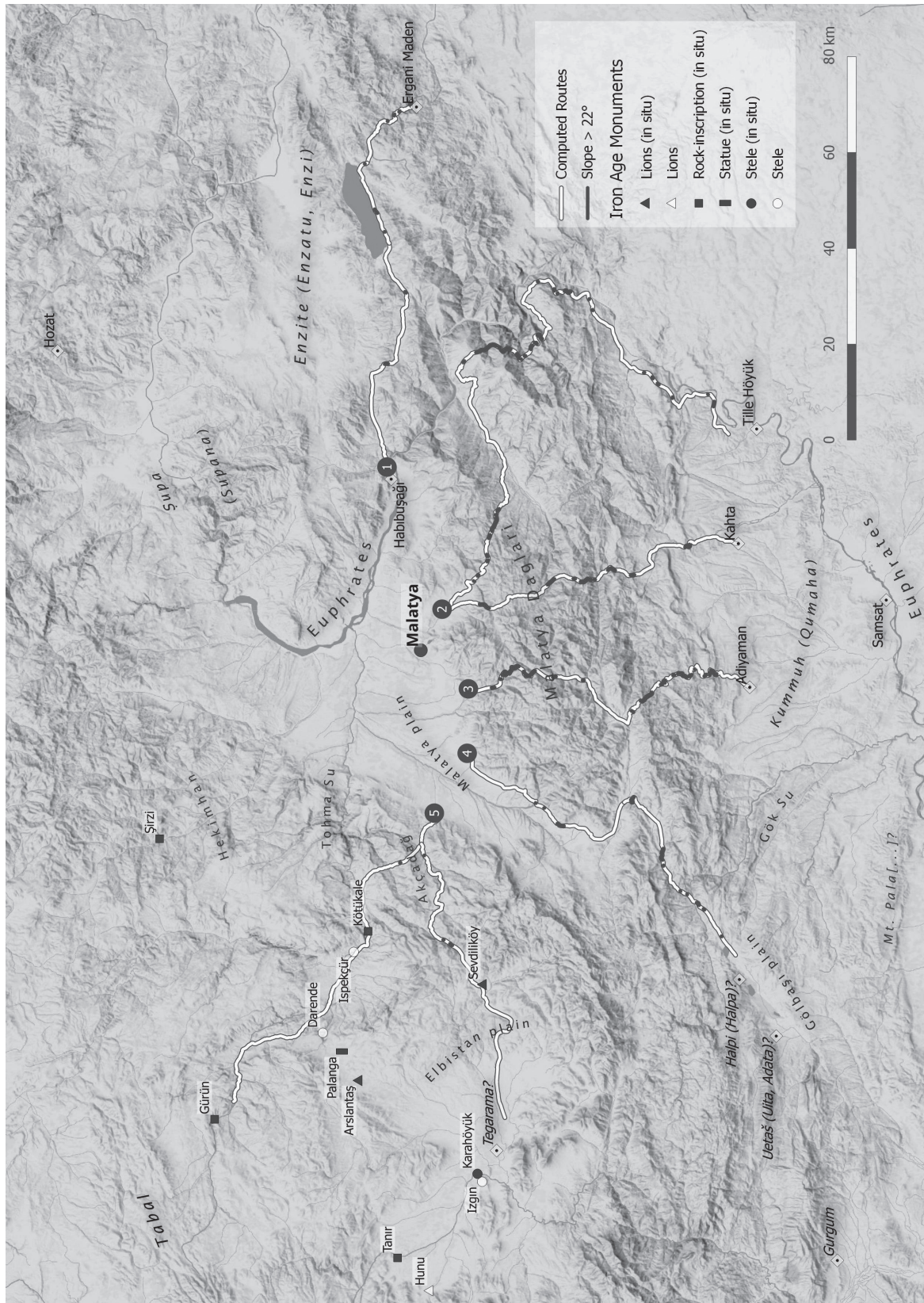


Fig. 4. Predictive model of the route network to and from Malatya with critical slope at 22 degrees. Starting locations (black dots): 1. Euphrates' ford between Pirot and İzoglu; 2. Fırın Höyük; 3. Gündüzbey village, 10 km south of Gözbaba Ziyareti Tepe; 4. Taşvanburun Tepe (Ören Tepe); 5. the city of Arka.

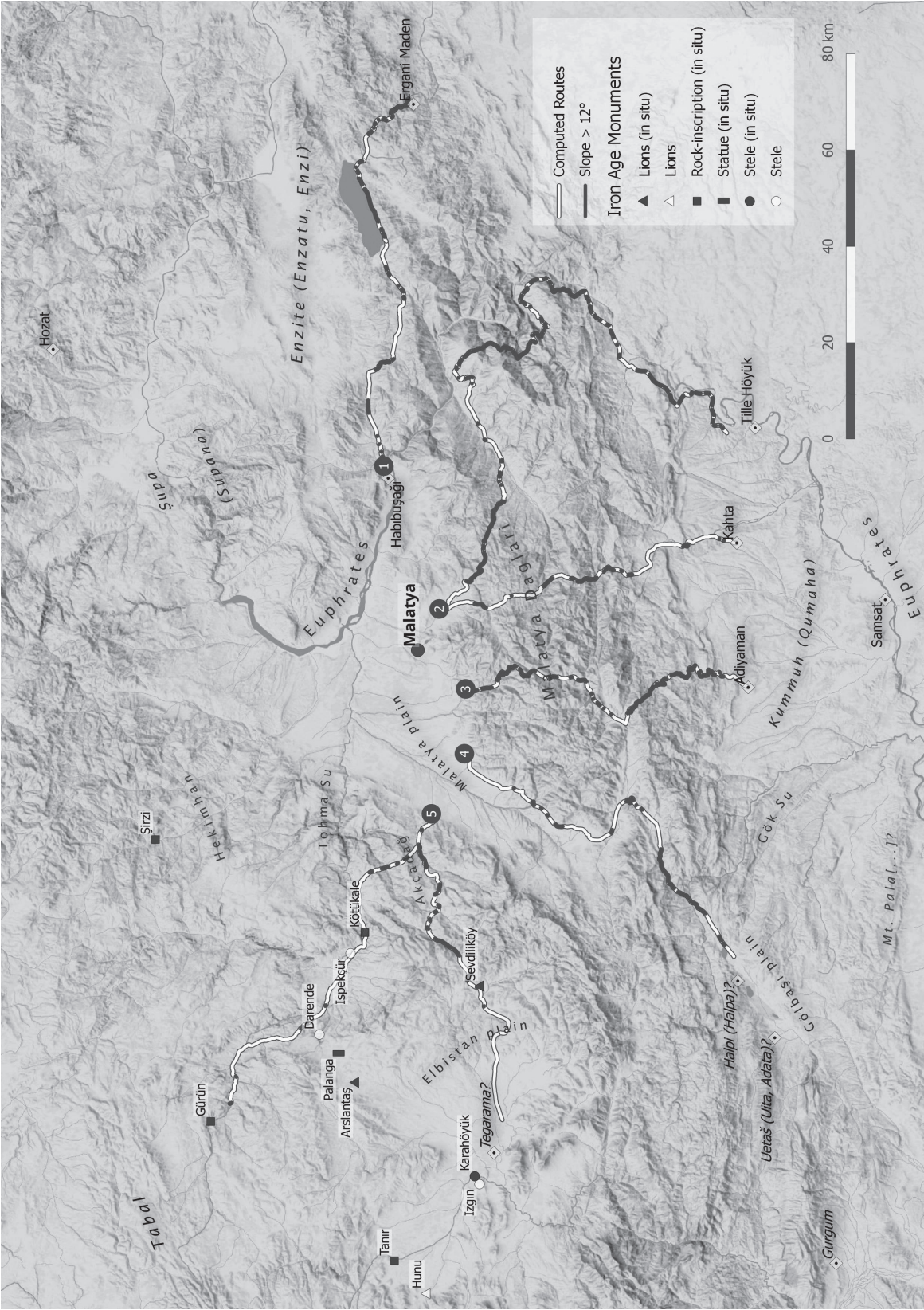
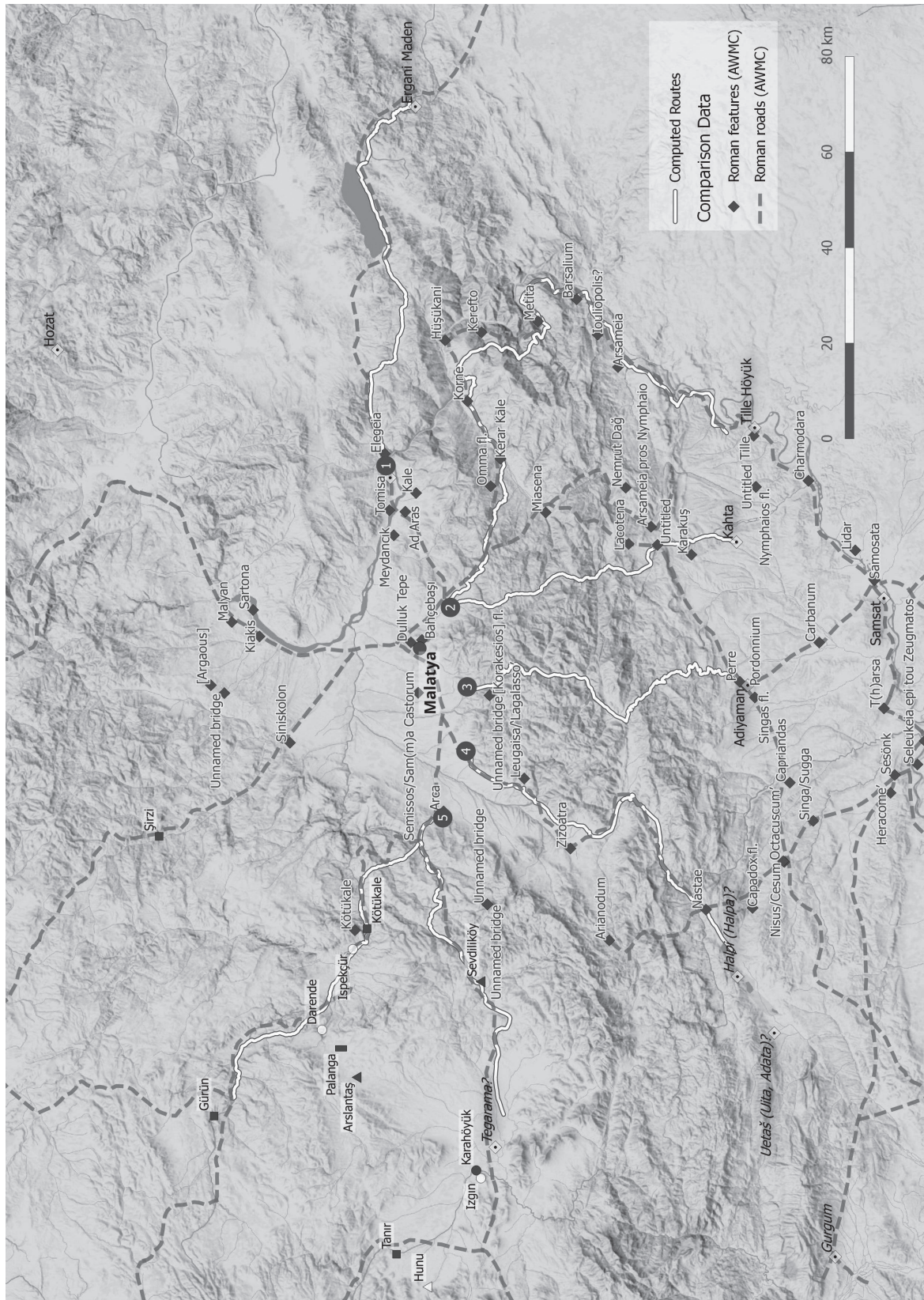


Fig. 5. Predictive model of the route network to and from Malatya with critical slope at 12 degrees. Starting locations (black dots): 1. Euphrates' ford between Piro and İzöglü; 2. Fırncı Höyük; 3) Gündüzbey village, 10 km south of Gözbaba Ziyareti Tepe; 4. Taşvanburun Tepe (Ören Tepe); 5. the city of Arka.



Acknowledgements

We wish to thank the Director of the Archaeological Mission in Eastern Anatolia, Marcella Frangipane, for the kind support to the present research, which has greatly benefitted also from the stimulating discussions and generous help in providing data from the Arslantepe archaeological expeditions by Mario Liverani, Federico Manuelli, Francesca Balossi Restelli and Gian Maria Di Nocera. We are also grateful to the three anonymous reviewers who read the article and provided extremely useful comments and suggestions.

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