TUMULI, ROADS AND PLOTS. DECODING THE MONUMENTAL FUNERARY SPACE OF THE 4TH-3RD CENTURIES BC KALLATIS

Abstract: The study focusses on the monumental elements of the 4th-3rd centuries BC cemeteries of Kallatis: the use of large tumuli, the implementation of a systematized network of funerary plots, the extent of the burial grounds, the discovery of a series of built chamber tombs under tumuli with elements of decorated architecture, including mural paintings and exceptional presence of a statue topping a tumulus. The detection and morphological characterisation of archaeological features and the recovering of the funerary landscapes' spatial layout were based on historiographic study, remote-sensing and geophysical investigations.

Keywords: *Western Black Sea, Greek colony, tumuli, funerary plots, geophysics, aerial archaeology*

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Kallatis is an ancient colony of Herakleia Pontike settled on the Western shores of the Black Sea in North-Thracian territory (Fig.1). While its foundation date is still a matter of debate[1], the 4th century appears as the moment of employing a large scale systematization programme of the city's territory: building the city fortifications and division of its immediate surroundings into regular plots used for funerary or agricultural purposes (*kleroi*) and the establishment of secondary fortified settlements in its extended *chora* like Albești[2] and Coroana[3]. The spatial organisation of funerary mounds inside delimited lots and their alignment to access roads entering the city were preserved for many generations, pointing to, as the habitually use of mounds[4] for family tombs does also, a continuity of certain

[1] According to Pseudo-Skymnos (760-765), using probably information from Demetrius of Kallatis, the city was founded following an oracle, by Herakleians, during the time Amyntas became king of the Macedonians. There was more than one Amyntas of Macedonia to which the ancient source could refer to, Amyntas I (540-498 BC) or Amyntas III (393-370 BC). Using historical logic and clues given by inscriptions about the type of institutions in Kallatis, Alexandru AVRAM (1999) supports an early funding date. In general, the earliest archaeological data belongs to the 4th century BC. Some recent excavations in Mangalia, at 300 m outside the north-western corner of the fortification, revealed a series of pottery fragments attributed by the authors to the 5th century BC (PÂSLARU/COLESNIUC/IONESCU 2014).

[2] RĂDULESCU/BĂRBULESCU/BUXOIANU/GEORGESCU 1999.

[3] BUZOIANU/BĂRBULESCU 2011.

[4] Tumuli with discoveries dated in the 1st c. AD were explored in the northern part of the necropolis (IONESCU/ALEXANDRU/CONSTANTIN 2005). Early Roman age objects were found in tumuli also by TAFRALI (1928, 33), SAUCIUC-SĂVEANU (1945, T9 in table 2) and VULPE (1938, tombe eta, tumulus gamma); a marble sarcophagus with a rich inventory dated in the 2nd half of the 2nd c. AD was investigated in the northern part of Mangalia in the area of the tumular necropolis; even if it is not certain that the sarcophagus had initially belonged to a mound (*Aurul*

social groups which define themselves by referring to ancestors and family linkage.

While the available discoveries for the 4th-3rd centuries BC suggest that a rather standardized and reserved funerary inventory was the norm, it is the presence of hundreds of mounds, many measuring more than 5 m in height, aligned in crowded clusters and exploiting specifically the areas directly visible from the city, that stand out as markers of an ancient constructed landscape - modified and planned at a monumental scale. Many of these mounds were visible until several decades ago, before the commencement of the modernisation age of Mangalia[5], scattered on a 5-6 km range around the Classical/Hellenistic age fortification[6], on both shores of Mangalia Lake.

MANGALIA VERSUS KALLATIS

The majority of what we know about Kallatis' ancient cemeteries is the result of several series of rescue archaeological works undertaken on various occasions along the dramatic transformation of the early 20th century Mangalia village into what are now a crowded Black Sea touristic resort, an industrial harbour and military base. As in other cities repeatedly inhabited from Antiquity till present day, archaeology in Mangalia, too, has been struggling to recover the past vestiges amidst urbanistic evolution. Unfortunately, not all the modern territorial amenities could benefit from adequate archaeological documentation, especially during the huge land systematization process happened in the Communist era. Quite emblematic may be considered the events happened in late October 1989 when a great part of the northern peripheries of the ancient town, the most crowded sector of the tumuli cemetery, where at least one mound was known to be higher than 10 m, was levelled and terraced without any archaeological supervision in several days. Only some time later, archaeologists, finally learning of the destructions, tried to rescue what was left of just a single mound, half already laid down by machines, while the rest of that part of the cemetery disappeared over-night[7]. Unfortunately, illegal destruction has been happening even in more recent times (like after 2000s) due to difficulties in monitoring the urbanistic development and certain indifference from the local community and authorities towards the local heritage and specialists. The remains of Antiquity are rather perceived as obstacles by people building private homes or are becoming engulfed in garbage and waste on the outskirts of developing neighbourhoods (Fig. 2).

It is indeed the disappearance of the mound cemetery, during less than a century of urbanisation that is the most visible transformation of the Kallatis archaeological landscape. Early 1930s postcards with images of Mangalia's 'rolling' horizon (Fig. 5), the aerial photograph taken by the German Aviation in 1944 (Fig. 12) and the various regional maps point to the existence of a large funerary area where hundreds of mounds occupied until recently, in a dense and organized layout, a 5 km ranged semicircle around Hellenistic fortification, including the southern shore of Mangalia Lake, in the area of nowadays 2 Mai village. Today, only 20 percent of this territory remains uncovered by modern buildings and the percent might drastically diminish in the years to come. Facing this accelerated destruction and the rather disparate nature of available documentation, the territory and necropolis layout need to be assembled like a puzzle. It is the domain of landscape archaeology, historical mapping, remote sensing and geophysics to help decoding the archaeological landscape and reveal its once monumental outline and initial planned configuration.

'UN DES PLUS BEAUX ET DES PLUS ÉTRANGES PAYSAGES DE LA DOBROUDJA MÉRIDIONALE'[8]

There is no monographic study dedicated to the Classical and Hellenistic period cemeteries of Kallatis[9]. Data with varying quality about more or less 100 graves dated in the 4th-3rd centuries BC, the earliest of the necropolis, can be extracted from various reports and put forward for some analysis. These were mainly inhumations in stone cists[10], simple pits[11] or covered by tiles[12]. Cists were built in a variety of ways, from rows of stone blocks to slab cassettes or double cists funerary ensembles (Fig. 3, 4). Even if used in a lesser percentage, cremation was also documented, with the ashes deposited either in urns[13], cists[14] or left on the pyre *in situ*[15]. The majority of these graves were considered at their discovery to be flat and only very few were labelled for sure as belonging to tumuli. However, considering the high degree of destruction of the mound necropolis, the lack of a clear map of the cemetery and the accidental nature of some of the finds, it is not to be excluded that some of the so called flat graves to have belonged initially to flattened mounds. Some reports[16], but mainly scattered notes[17] allow us to count some data about only 38 tumuli excavated or trial trenched in Kallatis (regardless of chronology), among which 29 were investigated before 1945!

Oreste Tafrali, the early 20th century professor at Iași University, excavated during 1924-1927 at least 13 mounds in the vicinity of Mangalia, one in the area of Albești (Sarighiol) and one in the area of Hagieni (Hadjilar). He documented[18] as well the chamber tomb with barrel vault and frescoes discovered with three decades before him on

și Argintul 2013, 429-433.

[5] PREDA 1968, 3; TAFRALI 1927; TAFRALI 1928.

[6] We refer mainly to the largest extent of the fortified enclosure, visible on aerial data, which is probably to be dated, in an early phase, during the 4th century BC. The wall was rebuilt many times, including during the Hellenistic Age. Its layout was significantly altered (reduced) after the Costoboci attack (post 172). (ALEXANDRU/CONSTANTIN/IONESCU 2004-2005; GEORGESCU/IONESCU 1998).

[7] BOUNEGRU/BÎRLĂDEANU 1990.

[8] TAFRALI 1927, 18.

[9] DONNELLAN 2006 is a recent comprehensive analysis, even if not a monograph.

[10] For example graves labelled 1, 5, 7, 11, 28, 37, 38, 46, 47 in PREDA/GEORGESCU 1975.

[11] For example graves labelled 1, 2, 4 in RADU 2007.

[12] For example graves labelled 3, 4 in CHELUȚĂ-GEORGESCU 1974.

[13] ZAVATIN-COMAN 1972; CHELUȚĂ-GEORGESCU 1974 – grave 6; PREDA/BÂRLĂDEANU 1979 - graves 5, 6, 7.

[14] REDA/BÂRLĂDEANU 1979 - grave 1.

[15] PREDA/POPESCU/DIACONU 1962, fig. 8; PREDA/GEORGESCU 1975 – grave 16.

[16] PREDA 1961; PREDA 1962; VULPE 1938; IONESCU/CONSTANTIN/ALEXANDRU 2005; IRIMIA 1983, 118-123.

[17] TAFRALI 1927; 1928; SĂUCIUC-SĂVEANU 1938; SĂUCIUC-SĂVEANU 1945.

[18] TAFRALI 1927; TAFRALI 1928.

Fig. 1. a. Map of Greek colonies in the western Black Sea; **b**. 2016 satellite image of Mangalia - evolution of urban area since 1944 (blue polygon); **c**. industrial harbour (image source http://hubdacia.ro/).

Fig. 2. a-b. A destroyed tumulus in the locality of 2 Mai, partially fallen into the see, partially used as clay source and garbage dump by locals. Surface scattered materials suggest that at least one grave was a cremation dated in early Roman Period;
c. tumulus used as clay source located near the industrial harbour (area of 2 Mai).

the southern shore of Mangalia Lake[19] (Fig. 14). In addition, some details about another destroyed tumulus located in the western part of the city could be found in his accounts[20]. Based on the landscape visible around 1920s he identified several funerary agglomerations: 1. towards west from the city, in the vicinity of the fortification; here some potters were already destroying the place using it as clay quarry; a cist was found in a destroyed tumulus 1 km away from the enclosure; some tumuli were located right near the ancient enclosure, as were those in the north; 2. on the southern shore of Mangalia Lake; here a barrel vault stone tomb and parts of his embankment were clearly visible; 3 – in the north-eastern part of the city, near the enclosure; terracottas and inscriptions in Greek language were found here; 4 - a group of tumuli in the vicinity of Vama Veche (Inlalîc); 5 - a group of tumuli on the road to Limanu (Caracicola); 6 – an alignment of mounds, orientated west-east, in the vicinity of Hagieni (Hadjilar). His accounts fit well the older representations of the relief, maps, postcards or the WWII aerial photograph.

Unfortunately, despite his genuine interest for the tumuli landscape of Kallatis, his published reports fail to provide clear and archaeologically relevant details, all his descriptions remaining generally vague. Yet, what his accounts manage very well to do is to capture the impressive scale of Kallatis tumuli cemeteries[21] - the number, visibility and organized layout of mounds, especially in the northern sector, along the road to Tomis, where he observed in the field three compact rows of tumuli going towards the city's ancient gates. Tafrali thought, in fact, that these tumuli rows were part of the ancient city's defensive system because they were located close to what he labelled as *Cuvette*[22],

[19] the same pictured initially by PÂRVAN 1923, fig. 81.
[20] TAFRALI 1927, 19.

[21] *En s'approchant de Mangalia, de n'importe quelle direction, on admire un des plus beaux et des plus étranges paysages de la Dobroudja méridionale. A l'horizon et tout près de la ville, on voit de petites hauteurs coniques, qui ont l'aspect de pyramides. Ce sont des tumuli. On est surtout frappé par le grand nombre de ces monticules qui entourent Mangalia, notamment du côté nord et ouest. On se dirait en présence d'un vaste cimetière, dont les tombes gardent encore leur secret.* (TAFRALI 1927, 18). *Quand on s'approche de Mangalia, l'on voit de loin l'agglomération de ces curieux monticules, très serrés. A l'horizon, d'autres profilent sur le ciel leurs silhouettes d'un aspect semblable à celui des pyramides.(…) A l'ouest, Callatis en est également en tourèe de plusieurs séries, dont quelques-unes, éloignées d'elle de 10-15 km., apparaissent sur le ligne de horizon. D'autres serrent la cité de près, s'avançant jusque sous ses murailles.* (TAFRALI 1928, 23).

[22] A natural terrain depression (sinkhole), surrounded by many small natural mounds linked with the existence of a subterranean karstic system; there are two such natural formations north-west from Mangalia, separated by only 350 m; one is currently a lake – *Groapa Blebea*, (but not a lake in 1943), the other is named Obanul Mare and it is a natural reserve. Tafrali considered the small mounds as defensive lines. It is not clear to which of the two TAFRALI (1928, 24) referred; if considering the given dimensions of 1 km x 800 m, more probable it was the case of *Groapa Blebea*. In fact, in a footnote TAFRALI (1928, 35) wrote that tumuli A and B, situated near the Barbarian fortification, were located on the domain of Șt. Blebea.

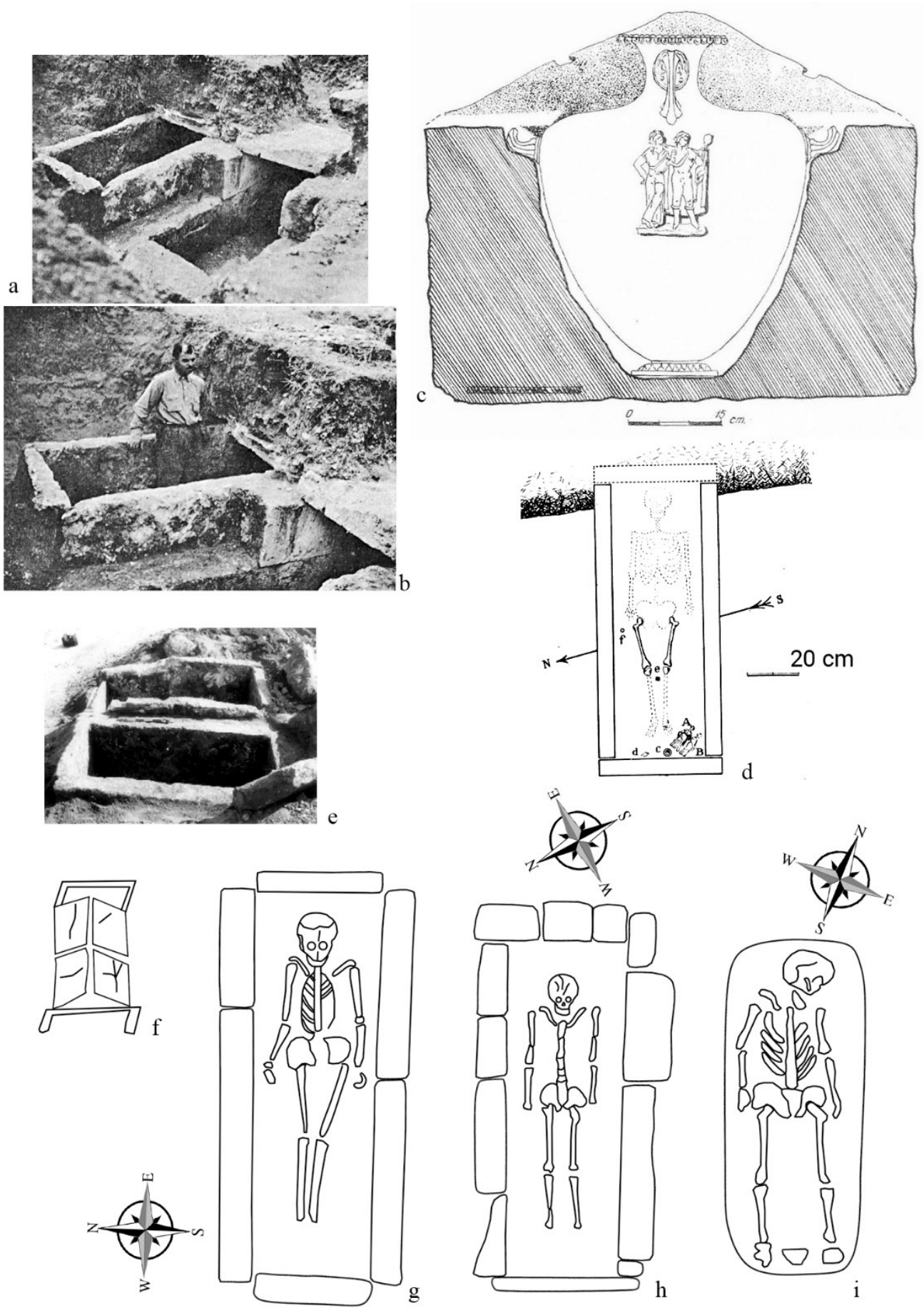

Fig. 3. Types of graves dated during 4th-3rd c. BC considered flat; **a-b**. (after SAUCIUC-SĂVEANU 1945, fig. 2, 3); **c**. (after ZAVATIN-COMAN 1972, fig. 1); **d**. (after VULPE 1938, fig. 2); **e**. (after IONESCU/ALEXANDRU/CONSTANTIN 2002, pl. XXIV); **g-i**. (after PREDA/GEORGESCU 1975, pl. III).

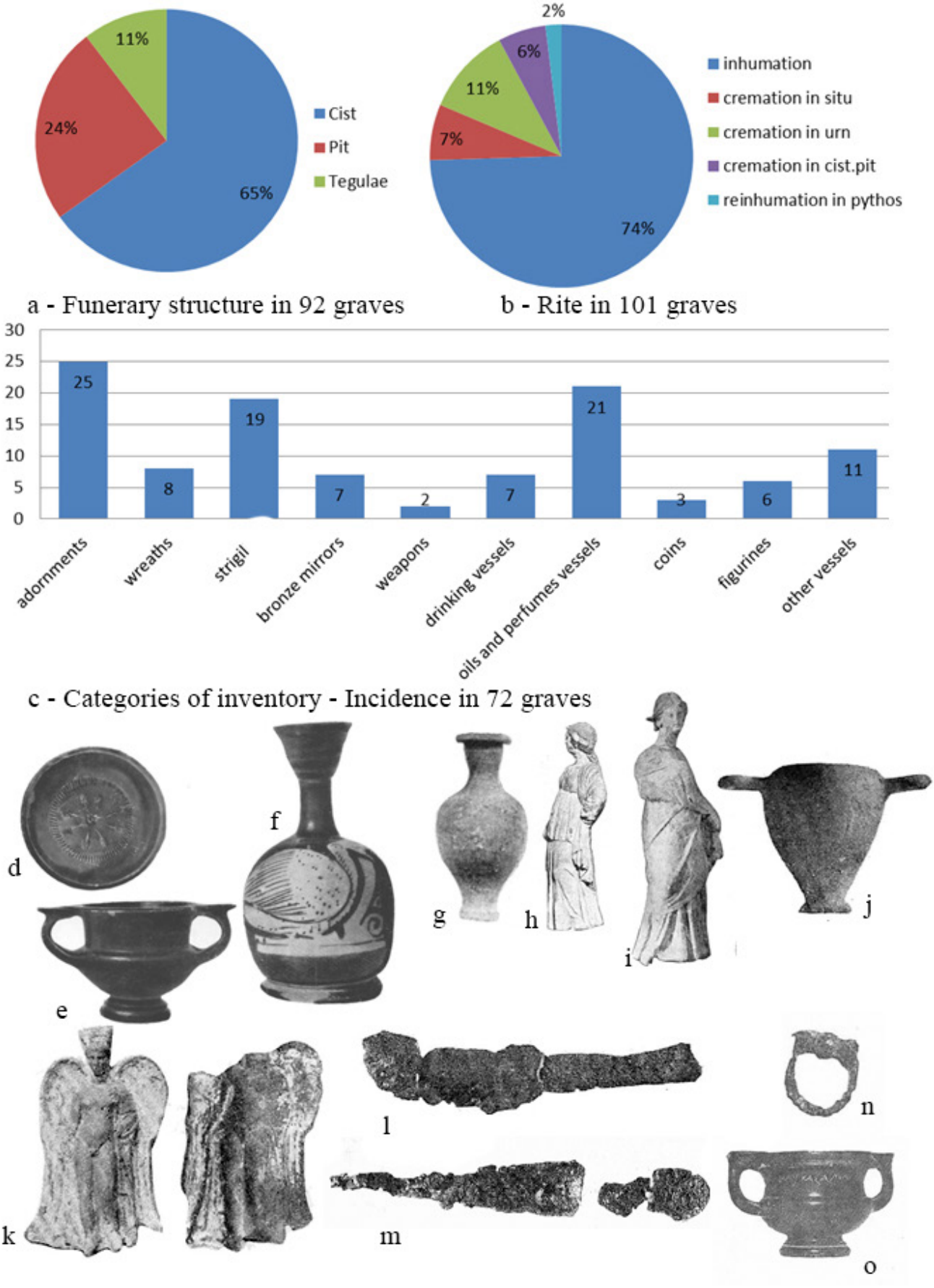

Fig. 4. a-c. quantifiable data coming from graves (flat and tumuli) 4th-3rd cs. BC; **d-o.** funerary inventory, various scales (after PREDA/POPESCU/DIACONU 1962, fig. 7; VULPE 1938, fig. 3, 6, 7; CHELUȚĂ-GEORGESCU 1974, pl. VI-1; IV-1; VIII; PREDA/GEORGESCU 1975, pl. VII-2, VII-8; IX).

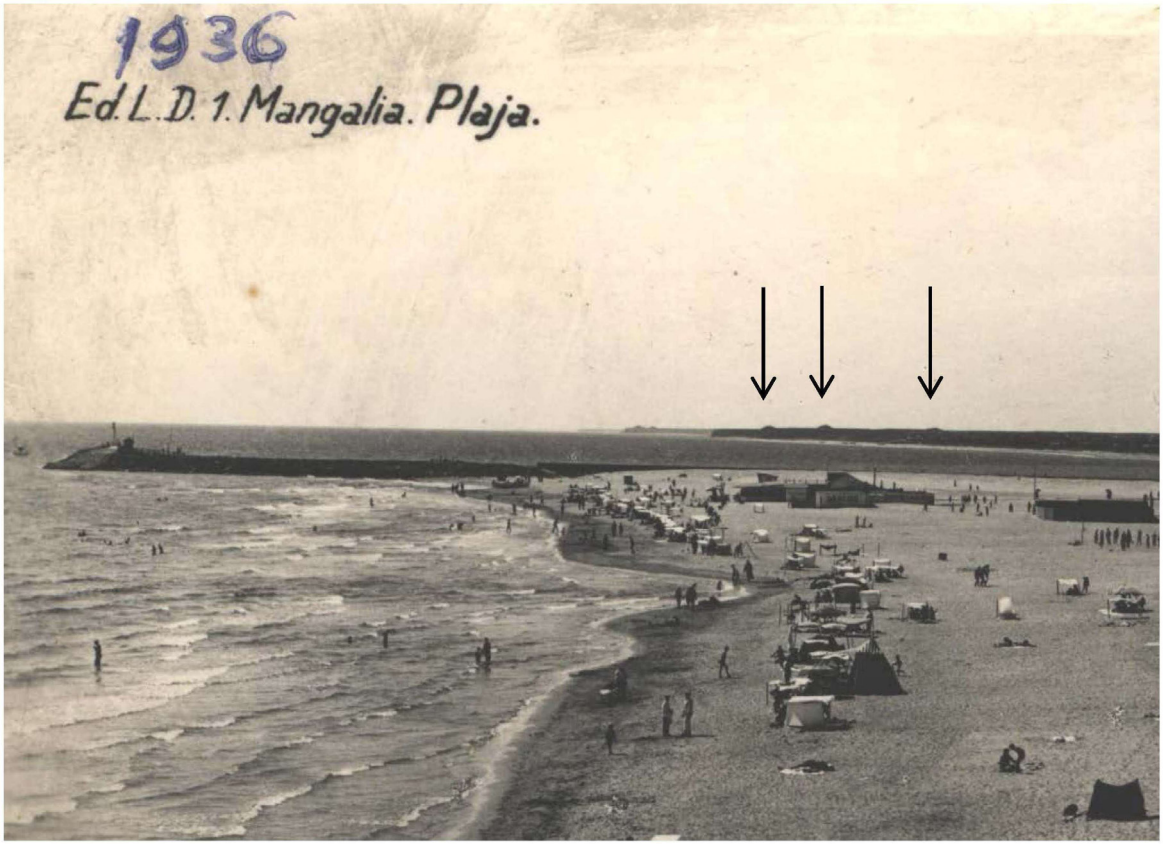

Fig.5. 1936 postcard of Mangalia with tumuli visible on the horizon.

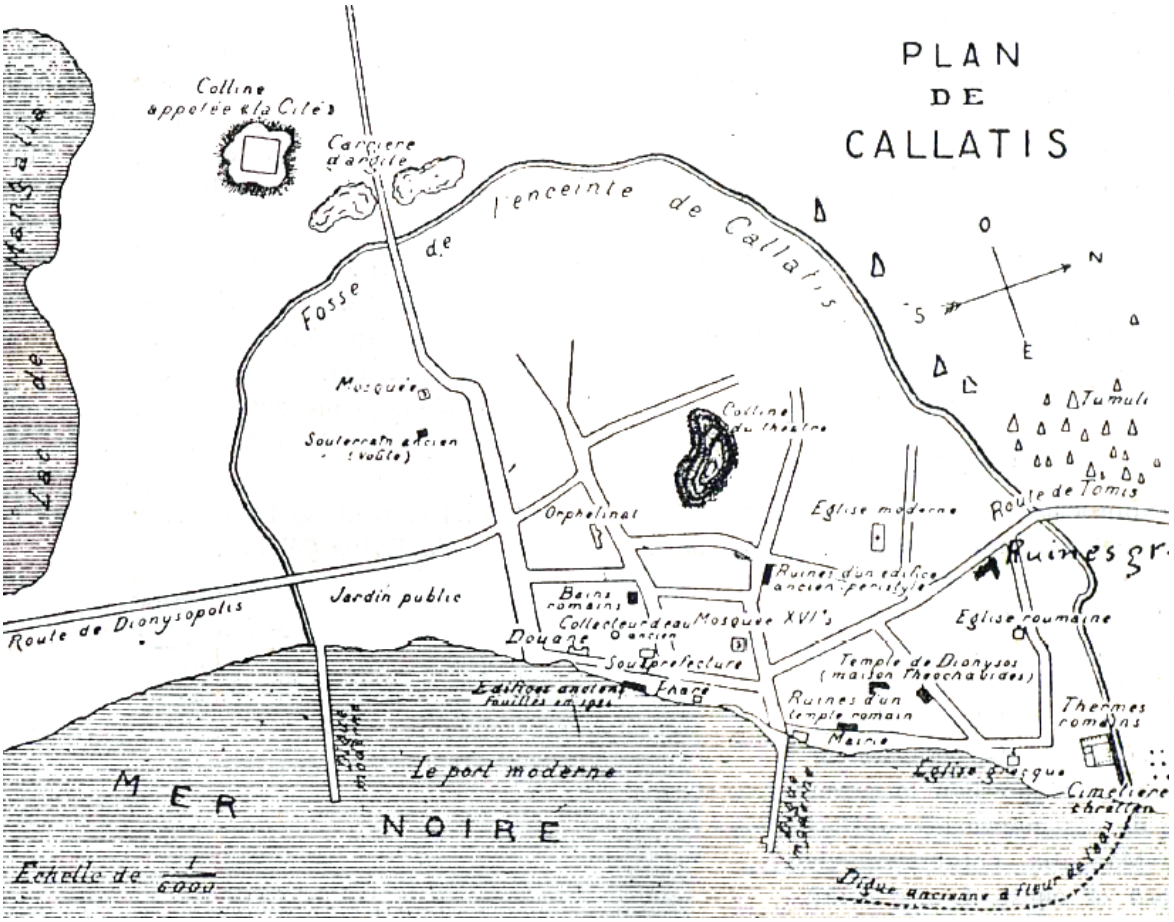

Fig. 6. Plan of Kallatis (after TAFRALI 1927, 17).

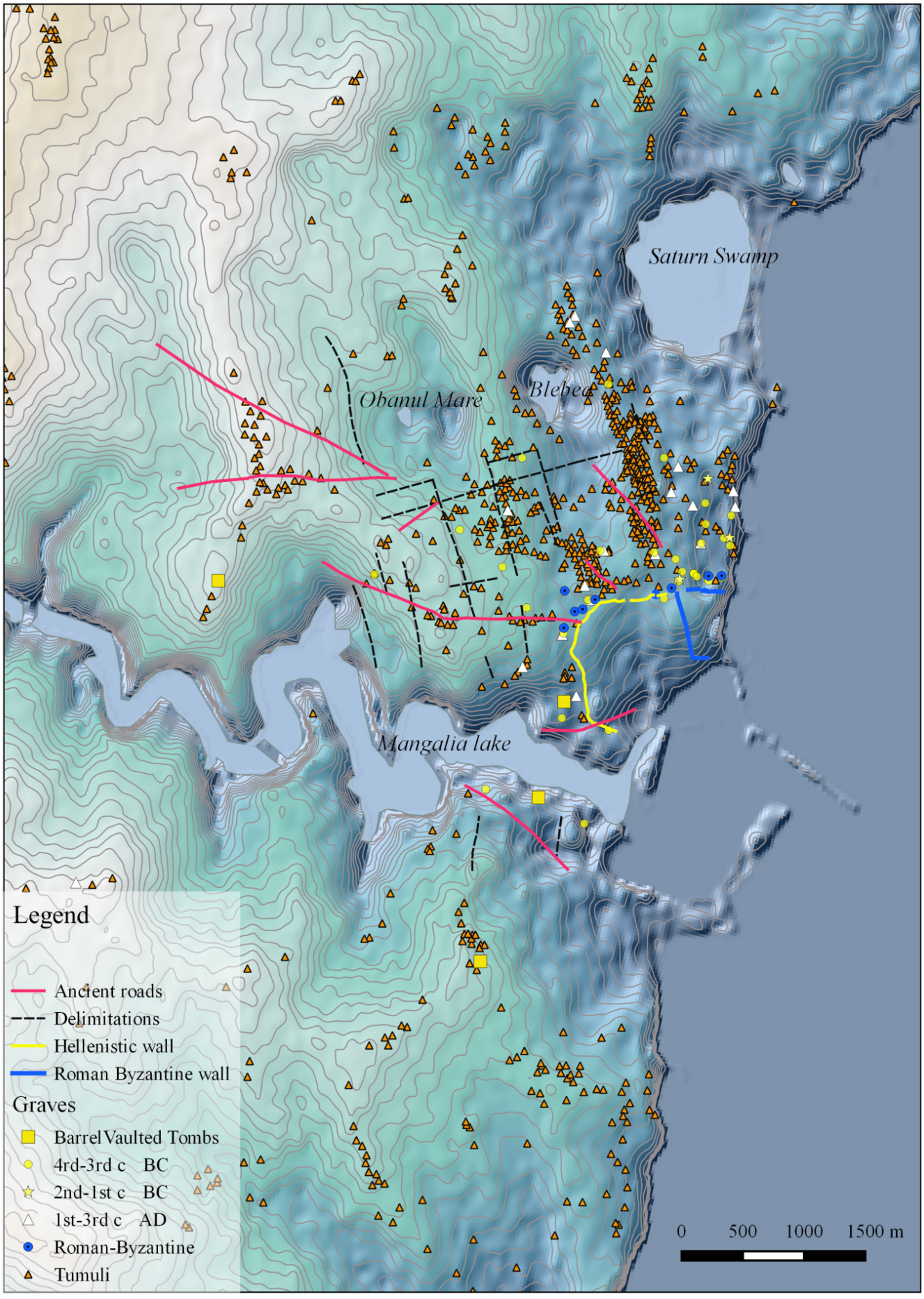

Fig. 7. Kallatis funerary areas. Modern relief (2 m spaced contours) and waters; the location of excavated graves was approximated; linear anomalies are those visible on the WWII aerial image and satellite imagery.

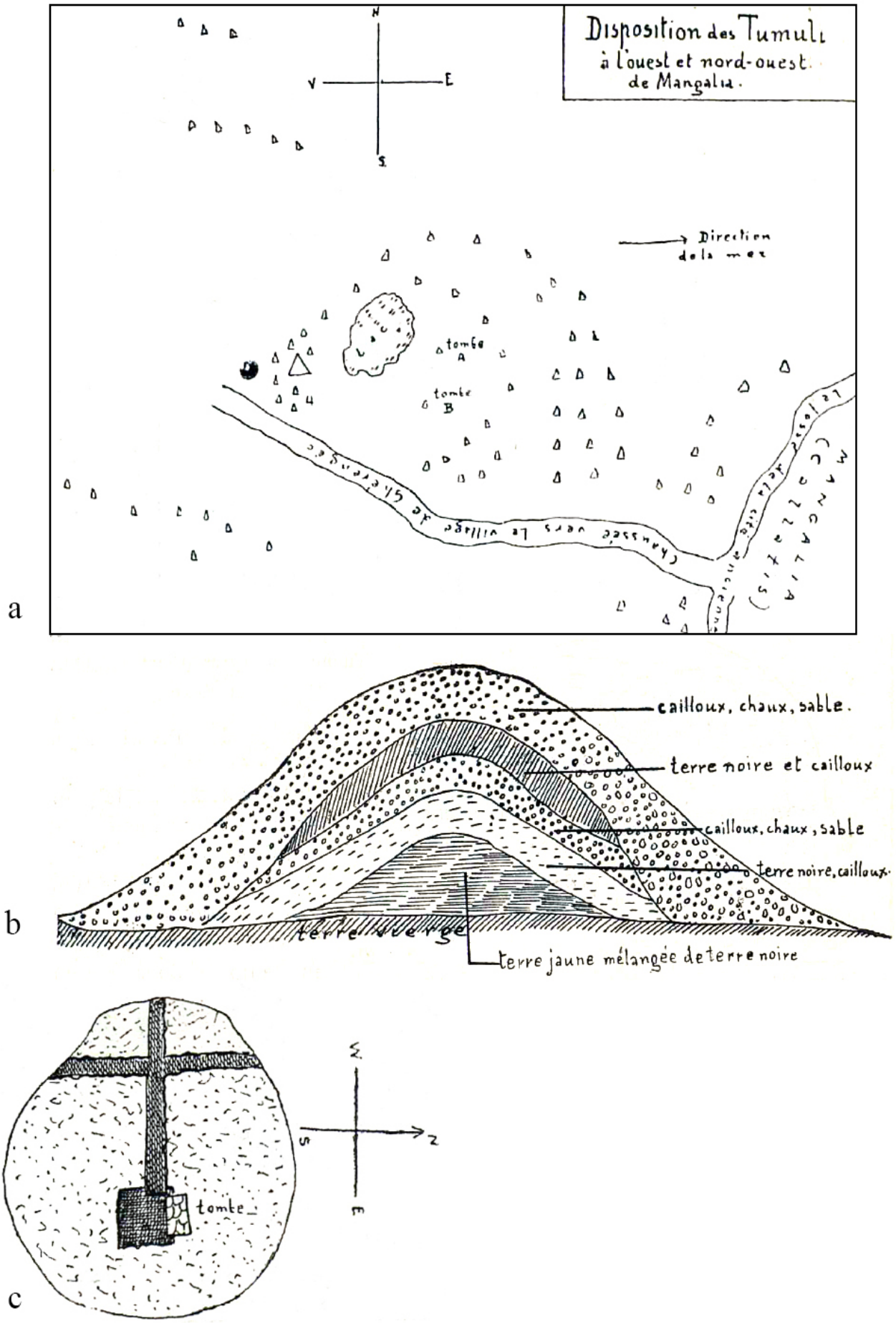

Fig. 8. a. Kallatis tumuli necropolis and Hellenistic fortification; **b**. T11-tombe A; **c**. T11-tombe A - plan of excavations (after TAFRALI 1928, 27, 34, 35).

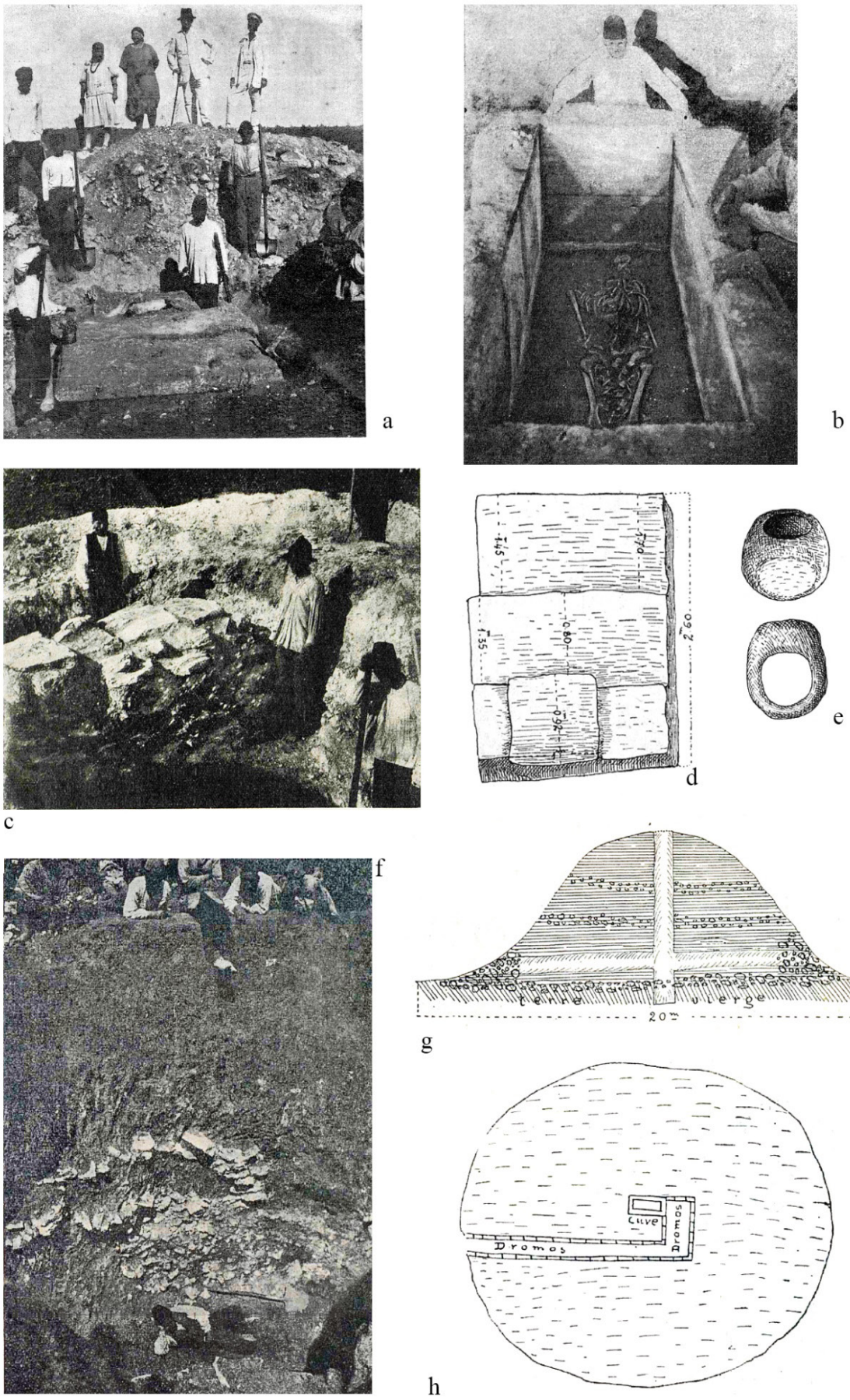

Fig. 9. a, b, d, e. tumulus B (T12/table 1) opened on the occasion Minister of Public Health Ion Constantin Inculeț visited the site on 20th August 1928 (after TAFRALI 1928, 45-48); **c**. tumulus A (T11/table 1) (after TAFRALI 1928: 36); **f, h**. Tumulus (T5/table 1) Hadjilar/ Sarighiol (Tafrali 1928, 29, 33); g. T4/table 1 (after TAFRALI 1928, 27).

Table 1. Synthetic table with mounds excavated by Tafrali in Mangalia and surroundings during 1920s. The numbering of the mounds is our own. If other names were initially given they were included here.

tumulus	Localization	Height (m)	D (m)	Graves/structures	Rite	Inventory
T1	Mangalia N, E from the Cuvette	3	-	Alternative layers of black soil and chipped stones	No graves	No inventory
T1a	Near T1	0.8			No graves	Painted pottery with gilded decoration
T2	400 m W from the sea, In the N side of the city	5	32	Alternative layers of black soil and chipped stones, stone krepis	Cremation in situ	3 bronze arrowheads, black-glazed pottery, earrings, glass, Roman bronze coin
T3	near T2	2	30		No graves	No inventory
T4	600 m W from the sea, Mangalia N gate	4	25	Alternative layers of black soil and chipped stones	No graves	No inventory
T5 Movila cu plantaţii	Hadjilar/Hagieni	5	44	Alternative layers of black soil and chipped stones, stone krepis, small stone cassette, stone structure with façade of 13 rows built from polished block	No graves mentioned	No inventory
T6	Sarighiol/Albeşti	6		'Sarcophagus with dromos'	No graves mentioned	No inventory
T7	On the slopes of the Cuvette	Violated in Antiquity		Remains of a 'brick tomb'	No graves mentioned	No inventory
T8	On the slopes of the Cuvette	Used as hut by a local		Stone cist	inhumation	No inventory
T9	On the slopes of the Cuvette			Several simple pits at shallow depth and a cist at some depth from top	inhumation	rushlight, unguentarium, small mug (Roman)
T10				Stone delimitation of the pyre	In situ crema-tion	amber bead
T11/tumu-lus A	On the slopes of the Cuvette		20	Stone cist	inhumation	
T12/tumu-lus B	On the slopes of the Cuvette		20	Stone cist covered with 3 slabs	inhumation	Strigil?, iron ring, spearhead?
T13	250 m W from the sea, Mangalia Ni				No graves	No inventory
T14	300 m W from the sea				No graves	No inventory
T15	Mangalia W	destroyed		Stone cist with lid	inhumation	

interpreted by Tafrali as an ancient Barbarian fortification[23], and, furthermore, because the mounds were so numerous that they occupied all the space and, therefore, would prevent any cavalry attack charged on this direction against the city's walls. That's why he labelled the tumuli in this part of the necropolis 'defensive mounds'.

His excavation method based on drillings (Fig. 9g), either vertical or horizontal, left little room for detailed or trustful observations. We only note the following generalities: he found both inhumations and *in situ* cremations; the mounds' stratigraphy was described as an alternance of layers of black soil, yellow soil and chipped stones (Fig. 8b); some tumuli had *krepidae* (Fig. 9g) and in several cases he found various types of cists (Fig. 9 a-d). In at least two mounds he encountered more complex stone structures: one (in a tumulus at Sarighiol/Albeşti) was described as a sarcophagus with *dromos* built of dressed stone blocks measuring up to 1 m in length (Fig. 9h); another structure (in a tumulus at Hadjilar/Hagieni) was made of worked blocks arranged in 13 rows forming a 'façade', it was interpreted as an altar. He thought he had found in other two mounds (T11, T12) located in the vicinity of Blebea Pit (Fig. 8a) a series of small stones (10 to 20 cm long) deposited as funerary inventory, engraved with or shaped like various animals, fishes, birds and even men – 'Scythian' figures. The discovery of primitive stone art elements would have suited well his general theory about a Scythian chieftain and his tribe that inhabited the

[23] The site configuration is natural, it is not a fortified enclosure; there are no arguments whatsoever for considering the site as Scythian; archaeological materials are found on surface on the entire allotted territory surrounding Kallatis.

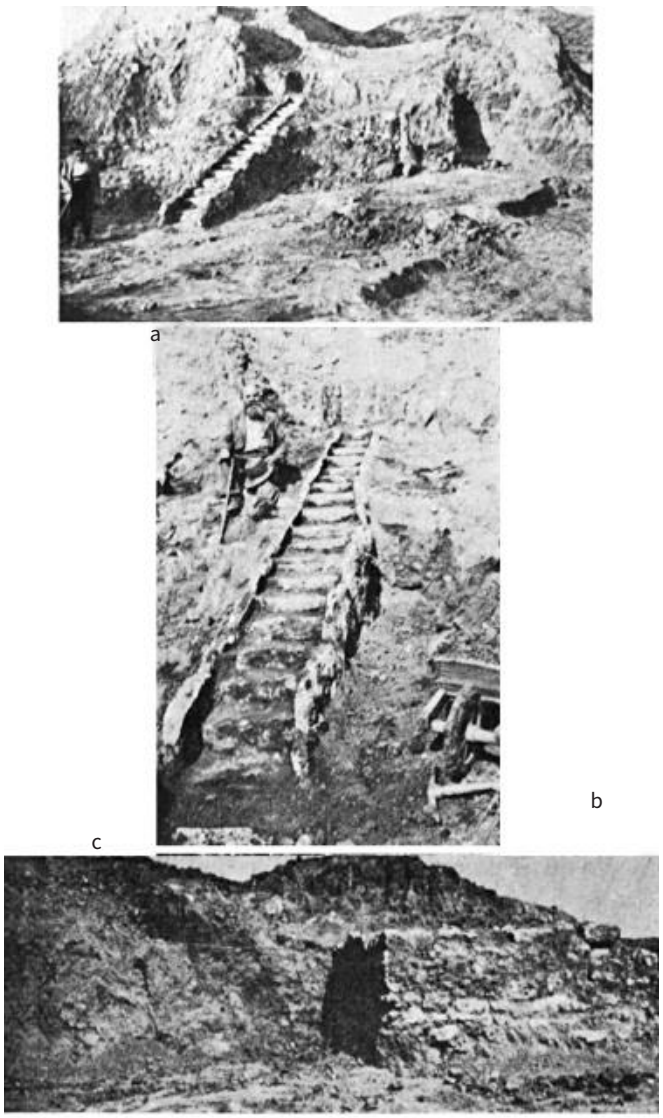

Fig. 10. Tumulus with stair and rectangular construction excavated by Sauciuc-Săveanu (1945, 253, fig. 7) on the occasion of Constanța-Mangalia railway building.

area of the 'fortified' Cuvette, however, the recurrence of this very special kind of discovery, in two aleatory chosen mounds, located at hundreds of meters apart one of another, would have been highly improbable; likewise, if judging the published photos[24], the stones were neither sculptures nor engraved blocks, but natural conglomerates found in clay soils.

At least 8 mounds were excavated in 1938 by Teofil Sauciuc-Săveanu[25], who was then professor of history and epigraphy at the University of Cernăuți, in the northern side of Mangalia, on the occasion of the Constanța railway construction[26]. Two other mounds were investigated in the area named *Teke*, 170 m west from the Turkish cemetery stone wall, along the road that was then leading to the Sulphur Baths, in 1940[27], 1933 and 1931[28]. The published details are far from satisfactory; however they stand proof

[24] TAFRALI 1928, 36-44.

[25] About his life and research activity in Kallatis see NICOLAE/NICULICĂ 2014.

[26] T1-T8 in table 2 published in SĂUCIUC-SĂVEANU 1945, 248-258.

[27] T9 in table 2 published in SĂUCIUC-SĂVEANU 1945, 265-266, fig. 11.

[28] T10 in table 2 published in SĂUCIUC-SĂVEANU 1938, 287-288.

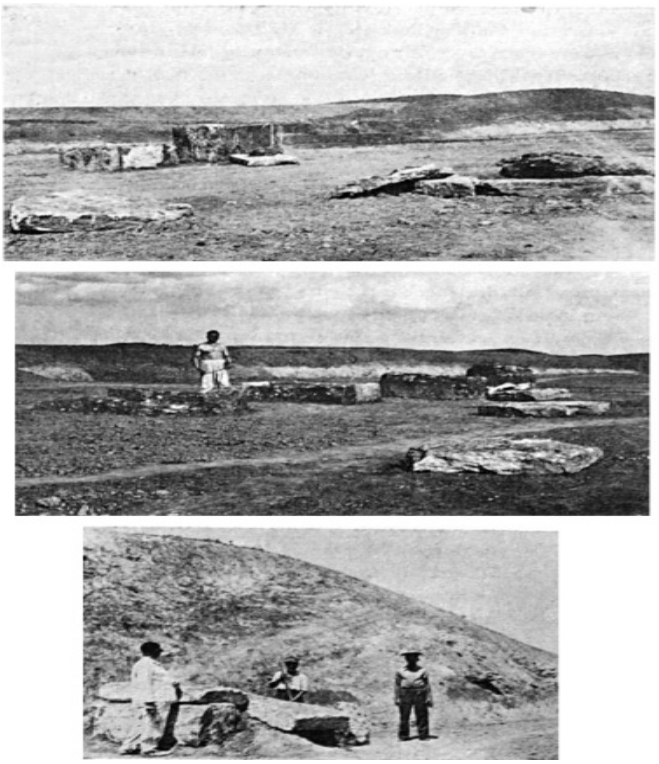

Fig. 11. Tumuli with aligned cists excavated by Sauciuc-Săveanu (1945, 249, fig. 6) on the occasion of Constanța-Mangalia railway building.

for the existence of consistent alignments of mounds in the northern sector of the ancient city, the same which were observed by Tafrali a decade earlier. Some of the published photos show clear alignments of cists (Fig. 11) uncovered during tumuli excavation. Inhumation in stone cist with few objects of inventory (pottery and rarely adornments) or inhumations covered with tiles represented the main types of graves excavated by Sauciuc-Săveanu in tumuli. Only few special structures were identifies under the mounds: a paved pathway, a well, a monumental stone stair with 17 steps associated with a rectangular construction of unworked stones (Fig. 10) - a possible pediment for a monumental statue (?) The mounds usually covered several graves.

The north side of the ancient city did not encompass only the most crowded and organized sector of the mound cemetery; it was also one of the main funerary areas of the city, used intensely even later, including during the Early Byzantine period. The graves, either flat or tumuli, filled the space between the main road to Tomis and the shoreline. Radu Vulpe excavated in this sector[29], during 1930 - 1931, a group of graves with finds from the 4th century BC and early Roman age, from which two were tumuli. These small mounds did not contain graves or stone agglomerations, only some fragments of pottery: in one's embankment an agglomeration of sherds of amphorae and glass vessels was found and in the other mound - a 4th century BC *aryballos*. Other two tumuli with finds from the second half of the 4th century BC were excavated by Constantin Preda[30] during 1959, not very far from the northern city gate. They remain still the best documented mounds of Kallatis, even if the

[29] In the vicinity of the villas Cormoran and Siesta built before WWII (VULPE 1938, 329, fig. 1).

[30] PREDA/POPESCU/DIACONU 1962.

Table 2. Synthetic table with mounds excavated by T. Sauciuc-Săveanu in Mangalia during 1930s. The numbering of the mounds is our own

tumulus	Localization	Height (m)	D (m)	Graves/structures	Rite	Inventory
T1	Railway Mangalia N	4.3		2 stone cists, many graves covered with tiles	Inhumation	No inventory
T2	Railway Mangalia N			5 cists from which 3 were grouped; a stone well	Inhumation	
T3	Railway Mangalia N			2 stone cists orientated N-S	inhumation	Rushlight, lekythoi and plates – near a cist and amphorae near the other cist
T4	Railway Mangalia N	large		2 cists; a pit 3.10 m deep filled with fragments of amphorae		Gold diadem and gold earrings in the smallest cist; near the other cist there was a terracotta figurine (3rd c. BC)
T5	Railway Mangalia N	3.5		2 large stone polished blocks		2 pythoi, 2 amphorae - fragmentary
T6	Railway Mangalia N	6		Stone star with 17 steps, at its base a cist orientated N-S inside with a wooden coffin; rectangular construction of unworked stone – base for a statue?	inhumation	strigil
T7	Railway Mangalia N	4		2 cists from stone blocks, 1 child	inhumation	Amphorae fragments in the embankment
T8	Railway Mangalia N			Cremated bones from two individuals covered with tiles	cremation	3 ceramic plates
T9	Teke area, 40 m south from T10	2.5	34	Scattered bones near a stone pile measuring 65 x 78 cm.	inhumation	Fragments of glass vessels, nails with remains of wood, rushlight
T10-Teke	175 m W from the Turkish cemetery enclosure	2.5	19	No anthropic structure. A layer of limestone sand.	No graves	2 rushlights, black glazed pottery fragments on top
T11	2 Mai, 1937			Sone walls, researched with tunnels, unclear		

excavation did not deal with their embankments, these being previously levelled during urbanistic works. The two tumuli were located not very far from the main road linking the railway-station with the city centre, fact that means they could have belong to one of the northern alignments of mounds. A mound had an exterior *krepis* – an oval ring of polished stone blocks, placed on one or two rows (Fig. 13b), measuring 14.20 m (E-W) x 13.55 m (N-S) with an opening in its northern sector. A rectangular funerary pit (3.90 m x 2.55 m) was excavated in the centre (Fig. 13b) inside which, at a depth of 2 m, a cist was placed (M1). The cist was built from stone blocks built on two rows. It had no floor and was covered as lid with three stone slabs on top of which egg shell fragments and a gilded wreath (made from bronze and ceramic) were found. Inside the pit 4 entire black-glazed vessels were deposited (*kantharos*, *patera* and plates)[31]; they could be dated during the second half of the 4th century BC. The inhumed body inside the cist had the head towards east, a papyrus[32] in its hand and a gilded laurel diadem on the skull. Coins from Philip II and Alexander the Great were found in the vicinity of the mound. In the western side of the mound a small stone altar was found, probably used during commemorative rites performed at the grave. At only 9.5 m south from this mound another one (M2) was excavated on the same occasion, in 1959. It covered a stone *peribolos* (12 m x 6 m) built on top of three funerary pyres (Fig. 13d). Skull fragments indicated that the dead were burnt with their heads towards east. Fragments of burnt pottery, gilded diadems and also burnt remains of two iron *strigilis* were found mixed with the remains of the pyres. The complex was dated in the second half of the 4th century BC.

In 2004, Mihai Ionescu, Robert Constantin and Nicolae Alexandru conducted some investigations in the tumular cemetery of Kallatis, at 2 km north from the city, towards north-east from Blebea Pit[33]. They studied a group

[31] PREDA/POPESCU/DIACONU 1962, 447, fig. 7a-b.

[32] For the papyrus see COLESNIUC 2014.

[33] IONESCU/CONSTANTIN/ALEXANDRU 2005.

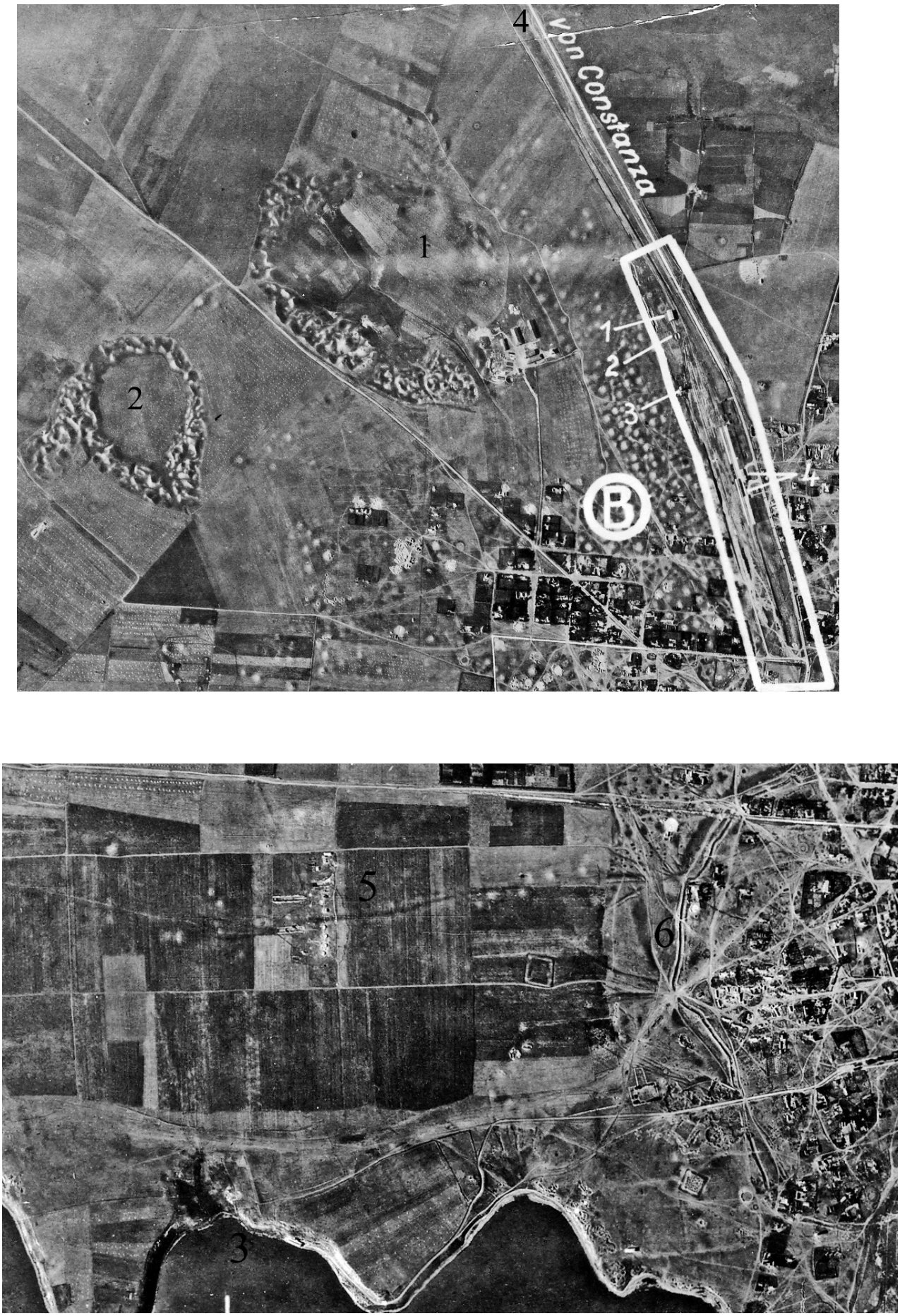

Fig. 12. Aerial image - details. 1 – Blebea Pit; 2 – Obanul Mare; 3 - Mangalia Lake; 4 – road to Constanța; 5 - ancient road to Albești (aerial anomaly); 6 – Hellenistic fortification. B in a white circle – original marking for aerial bombardment target (railway).

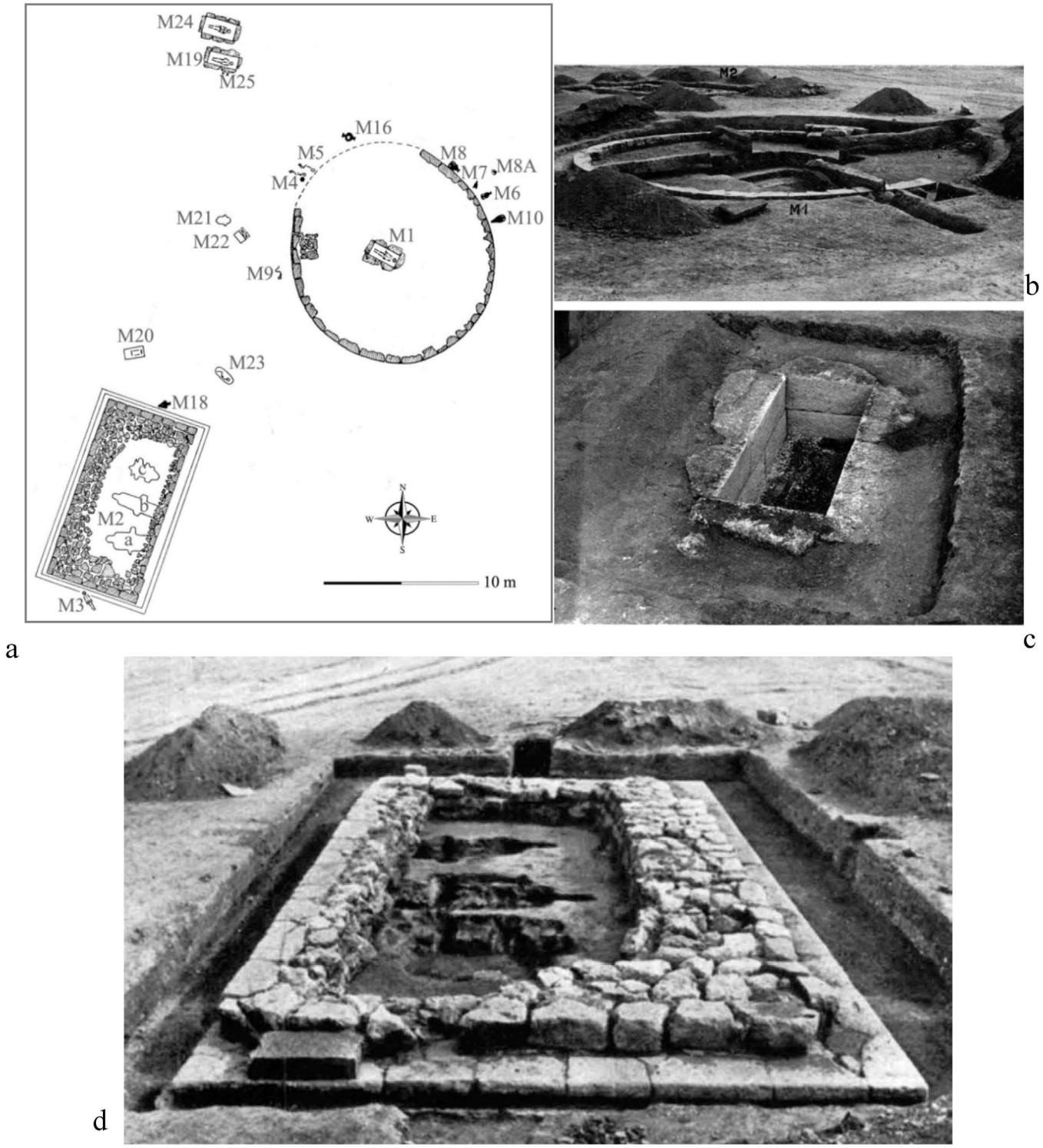

Fig. 13. Tumulus with papyrus and krepis M1 (**b, c**) and tumulus with pyres M2 (**d**) (after PREDA/POPESCU/DIACONU 1962, 446, 448, fig.6, 8); **a**. excavation plan (after PREDA 1961, 277, fig. 1).

of 7 mounds with heights ranging between 2 and 5 m, two of which were trial-trenched. No graves were identified. Their brief investigation established that the two mounds were built during the 1st-2nd centuries AD, from alternate layers of soil (brown and yellow) assembled in multiple nuclei. Both tumuli were affected by central modern interventions pits – possible unrecorded excavations from the period between the World Wars.

A 6.5 m high mound, measuring 45 m in diameter, was briefly investigated in late 1989[34]. The mound was built around a core of limestone chippings mixed with earth, overlaid by three soil layers. Seven inhumations graves were dug in the base soil: two double and two simple stone slab cists with lids, head to south with variations; one grave contained terracotta painted figurines; another – bronze *strigil*, iron ring and *unguentarium*; two others had no

[34] BOUNEGRU/BÂRLĂDEANU-ZAVATIN 1990.

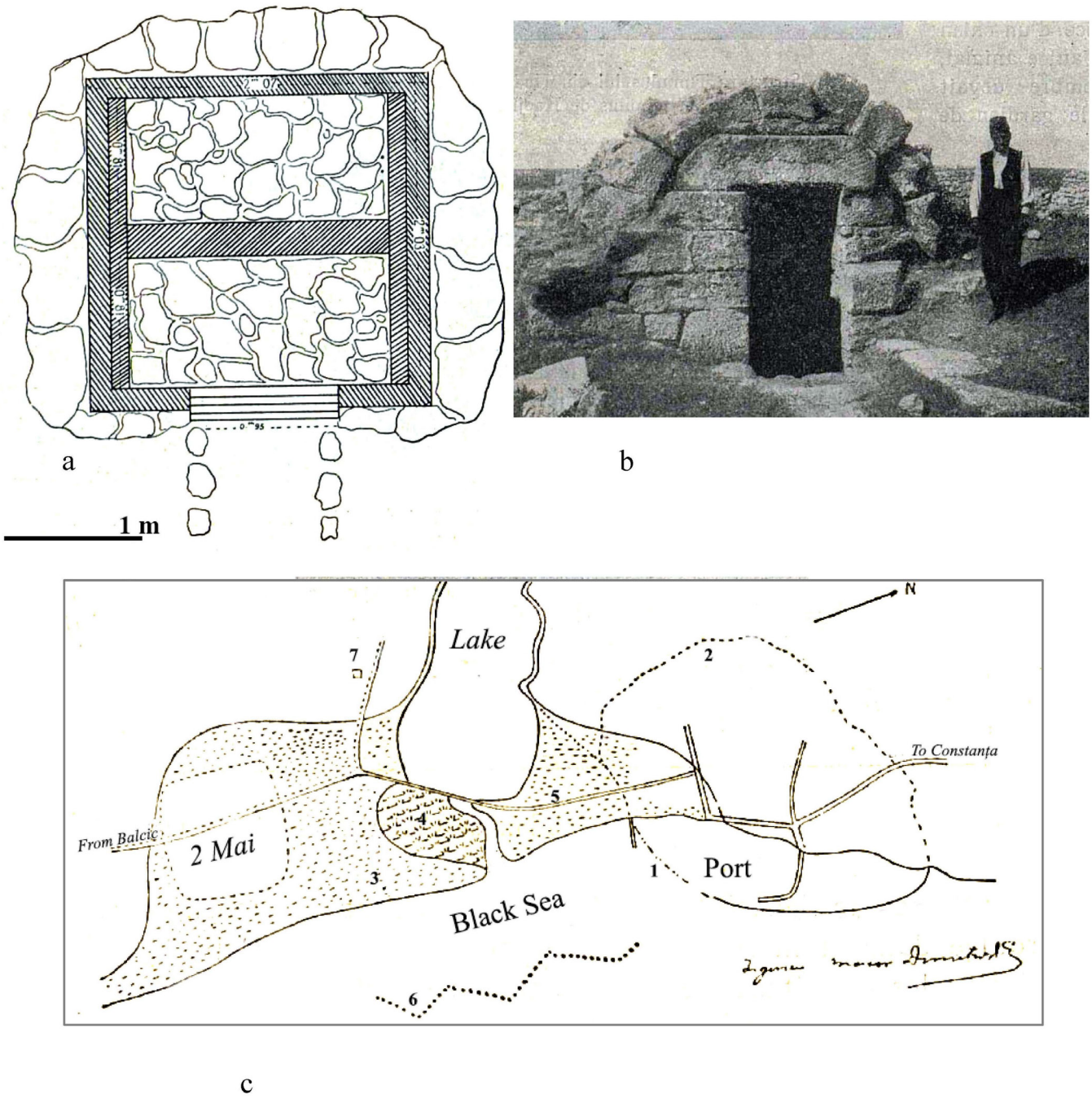

Fig. 14 a-b. Barrel-vaulted tomb on the southern shore of Mangalia Lake (after TAFRALI 1928: 32, 30); **c**. Mangalia by M. Dimitrievici (after TAFRALI 1927: 18): 1 – ditch and ruined wall; 2 – supposed layout of the ancient fortification wall; 3 - sansd; 4 - swamps ; 5 – dyke in 1920s ; 6 – ancient dyke; 7 – ancient tomb, very probably Tomb at a.

inventories; three other graves were simple pits covered with a stone slab, head towards east with variations, among these only one grave had as inventory - *unguentaria*. The items found in this mound, can be dated at the end of the 4th c. BC-beginning of the 3rd c. BC.

TUMULI AND POLITICAL CONFLICT

As both published recordings and study of cartographic data attest, large tumuli with heights of 5 m or more were common in Kallatis. In the northern and north-western sectors of the necropolis their density and organized spatial configuration was certainly visually impressive, infusing the landscape with a sentiment of monumentality. However, even if some elaborate structures were surely built (*periboloi*, *krepidae* of polished blocks, altars and others which we cannot fully comprehend, like the 17 steps stairway photographed by Sauciuc-Săveau in 1938), the majority of funerary arrangements inside tumuli were simple and standardized (cists, pits), the tumuli being in many cases family tombs used for generations. On this background, a series of 5 tumuli with underground chamber tombs implementing elaborate elements of architectural and painted decoration stand out as a distinct group characterized by complex funerary constructions, peripheral localisation in relation with the main organized burial grounds of the ancient city and consistent chronology (end

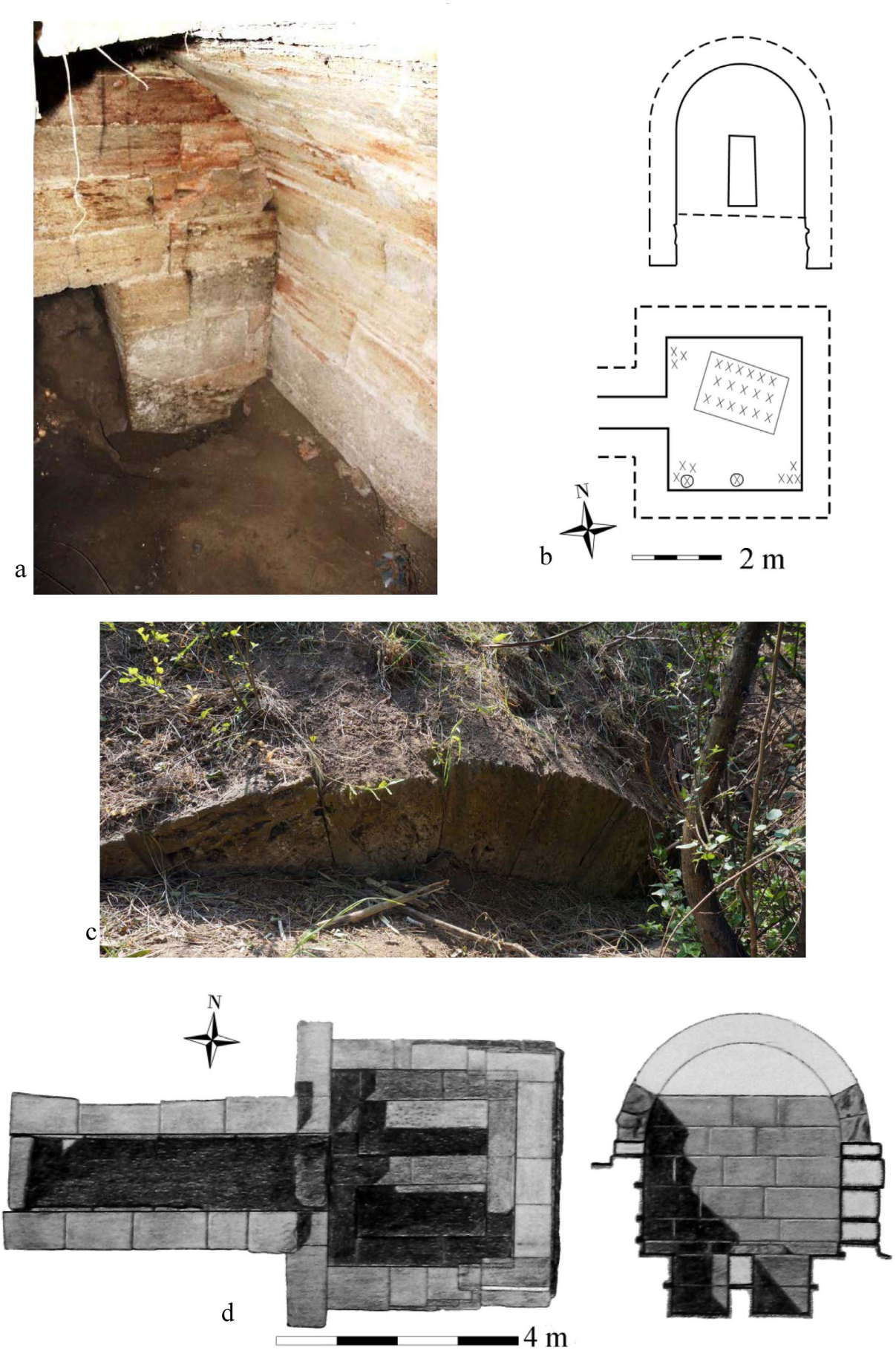

Fig. 15. Tumulus tomb from Neptun (T4 in ȘTEFAN/SÎRBU 2016): **a**. photo through a hole in the roof, **c**. the vault visible on the tumulus surface (2015; **b**. plan (after IRIMIA 1983, 87, fig. 1) where X represent ash and bones; c. barrel-vaulted tomb under a tumulus from 2 Mai (after PREDA 1962, 160, fig. 3).

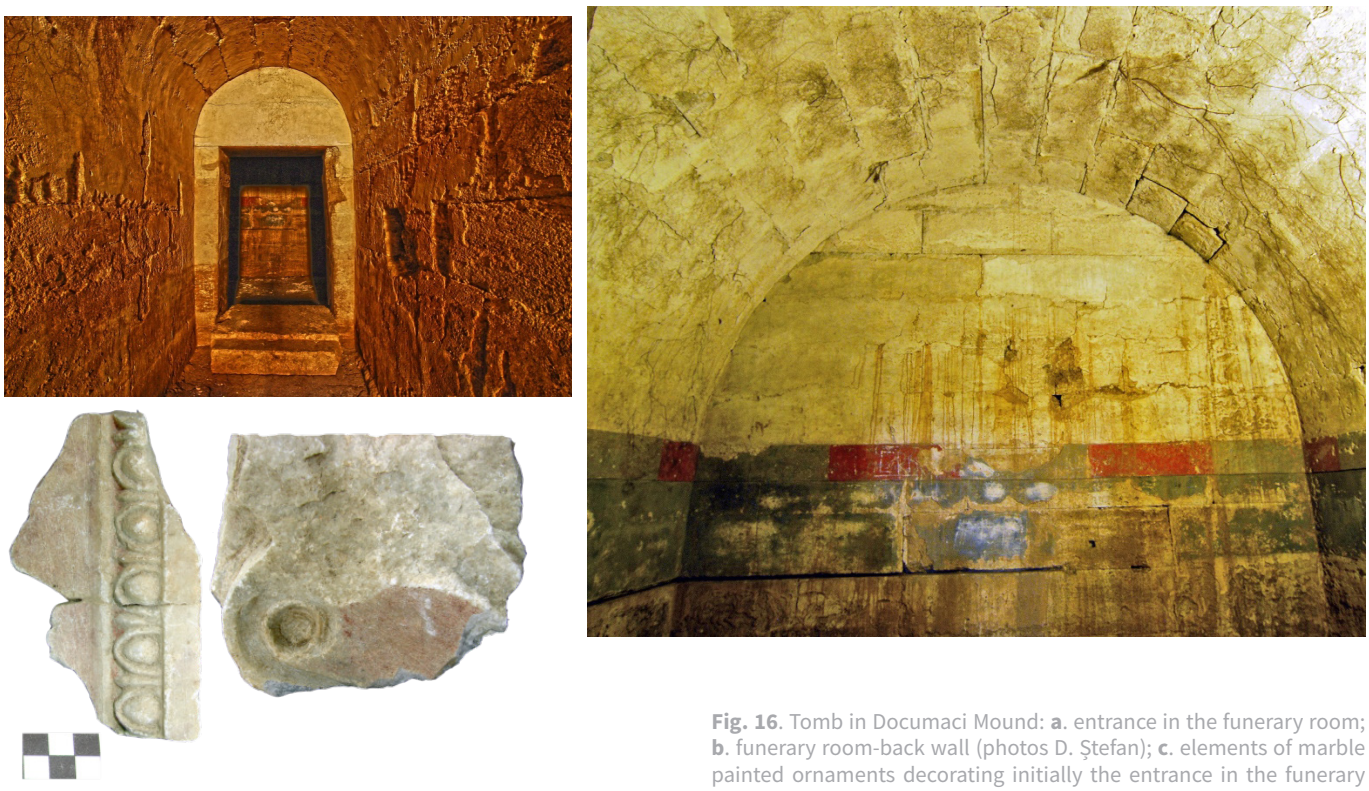

Fig. 16. Tomb in Documaci Mound: **a**. entrance in the funerary room; **b**. funerary room-back wall (photos D. Ștefan); **c**. elements of marble painted ornaments decorating initially the entrance in the funerary chamber photographed by Mihai Ionescu, inventory, Museum of Mangalia.

Fig. 17. Documaci Mound
a. rectangular pedestal base built of barely worked blocks of local porous limestone as exterior walls, with an interior made of crushed stones and earth (photo D. Ștefan).
b. top aerial view of the excavated mound with integrated plan of tomb (cyan) and statue base (red); large yellow circle has 60 m diameter and represents the alleged layout of the krepis identified through lateral mapping electrical resistivity.
c. archive image of the tomb during excavations in 1993.

of 4th-beginning of 3rd century BC). Their distinctiveness and involved expenditure were traditionally interpreted as proof for a different ethnicity of their commissioners, either North-Thracian[35] or Scythian chieftains[36], because such constructions would have been unsuitable for a Greek democratic regime like the one attested in Kallatis[37].

The series is very consistent in terms of technological implements and funerary model as a whole, without precursors in the necropolis. No other types of earlier or contemporaneous chamber tombs were found in the area. We discussed in detail the topic elsewhere[38] arguing that the architectonic and structural details of the tombs and tumuli fitted very well the model of the Macedonian type tombs built in Northern Greece and less the other tombs built in Thrace styled in Macedonian fashion[39]. Not only were the tombs in Kallatis covered with semi-cylindrical vaults, but the constructions of *quadrae* were underground not above the building level of the mound, which is an essential difference between the Macedonian and the Thracian model; the dry masonry, stepping *dromoi*, entrances blocked with large stones, the semi-cylindrical vaults built with *voussoirs* and the mural paintings with panels were other typical original constructive elements. Thracian tombs, even if built in Macedonian style, like the ones in Sboryanovo[40], still associated specific elements of ritual – fireplaces, horses' burials and manipulation of the deceased's remains. In addition they were exclusively built near settlements functioning as Thracian power centres, while the graves from Kallatis belong to the ancient city cemetery, even if not as part of the main organized burial grounds, but still in the city's visibility range. Chamber tombs built around North-Pontic Greek cities, in Scythian environment, were of many types, barrel-vaulted ones being the latest in a tradition and not the commonest[41]. The chamber tombs in Kallatis involved consistent expenditure and connections in Upper Macedonia (for masons and painters) assignable to elite members of Kallatis. Ancient sources mention Scythians as war allies of Kallatis, or, later as inhabitants of rural settlements, but their eventual authority over the Greek colony, as early as at the end of 4th c. BC, in a competition with the Macedonians whom we know had established in Kallatis a military garrison[42] still remains difficult to prove. Some numismatic evidence concerning relations of Scythian kings with Kallatis exists, but only for the 2nd c. BC[43]. In fact, Macedonian type graves were built in the necropoleis of other Greek poleis which weren't subjected to neither Scythians nor Thracians, but to Macedonian garrisons, like Eretria[44]. It is more grounded to interpret the Macedonian type tombs in Kallatis, similar to those in neighbouring Odessos[45], as belonging to Macedonian military elites or to the political party that supported the Macedonian military control over Kallatis. Of special note, in this group of little researched tombs under tumuli implementing barrel vaults in Kallatis, is Documaci Mound. The assemble consists out of the following: 1. a mound built in several stages, measuring initially over 8 m in height and 60 m in diameter, 2. a chamber tomb with *dromos,* built with regular masonry in two phases, marble door and mural paintings, 3. a base for a monumental statue topping the tumulus (only the base measured at least 8 m in height), 4. other stone constructions, lateral walls adjacent to the tomb. The monument was accidently discovered during illegal excavations for soil in the mound in 1993 and was then archaeologically investigated for three years[46], however only partially and with noticeable problems of the documentation. The authors of the current study together with some of the initial investigators (archaeologist Mihai Ionescu, architect Anișoara Sion) have been involved in the last years in the revaluation of the existent documentation. In fact, their concern with the mound cemetery of Kallatis has emerged as an attempt to better understand the significance of Documaci mound in a larger context. At 3 m behind the funerary chamber in Documaci Mound, a pit was dug in the embankment, until it reached the virgin soil, sometime later than the tomb, and inside it, a monumental pedestal for a statue or other type of exterior funerary structure (altar, mausoleum) was built. This basement measuring 4.9 m x 5.90 m was aligned with the funerary chamber sides, establishing thus a symbolic connection with the deceased and the values it represented. The massive pedestal had lateral walls built from large limestone blocks, only superficially worked, but with perfectly aligned corners. Its core was made of crushed stones and soil. The pedestal was afterwards covered with a new enlarged embankment. It is very possible that the addition of the second phase of the *dromos* to had had happened on this occasion (or at another moment the tumulus was enlarged). A visibility analysis shows that the Documaci Mound was the *single* most far located point on the western city horizon, still visible from the city acropolis - a very good spot to be used for a statue publicly commemorating a social group, a certain family or an individual linked with that particular tomb. Documaci Mound was at the periphery of the citizens' funerary lots, but exploited a position of special visibility. The obvious reference of the pedestal to the construction design of the Macedonian type tomb, for which we accept a political agenda, places in a different light the tomb commissioners, who used the monumentality and visibility of the funerary landscape as means to affirm social and political claims in times of conflict. Kallatis had been controlled at the end of the 4th c. BC by a military Macedonian garrison and revolted against it by leading a coalition of Greek Pontic cities, Scythians and Thracians (Diodorus 19.73-78). The king Lysimachus actually besieged the city as retaliation.

LAND DIVISION AND TERRITORIAL PLANNING

In the last two years, low-altitude aerial investigations by UAV have been used to document the several surviving sectors of Kallatis tumuli necropolis. While analysing the

[35] FLORESCU/DAICOVICIU/ROȘU 1980, 214.
[36] IRIMIA 1983, 76, 54; CONDURACHI 1951; TAFRALI 1927.
[37] AVRAM 2006.
[38] ȘTEFAN/SÎRBU 2016.
[39] See a similar discussion in STOYANOVA 2007.
[40] GERGOVA 1996; 2016.
[41] MACHOWSKI 2011.
[42] Kallatis was controlled by a Macedonian garrison, stationed perhaps from 323 BC, maybe even earlier, since Philip II defeated Ateas and established relations with Odessos (Iordanes Getica 65; Iustinus IX, 2, 10).
[43] PREDA 1998, 126.
[44] KOUREOUNIOTIS 1899, 222-234, fig. 1-5, pl 11-12.
[45] DAMYANOV 2010.
[46] IONESCU/GEORGESCU 1997, 164.

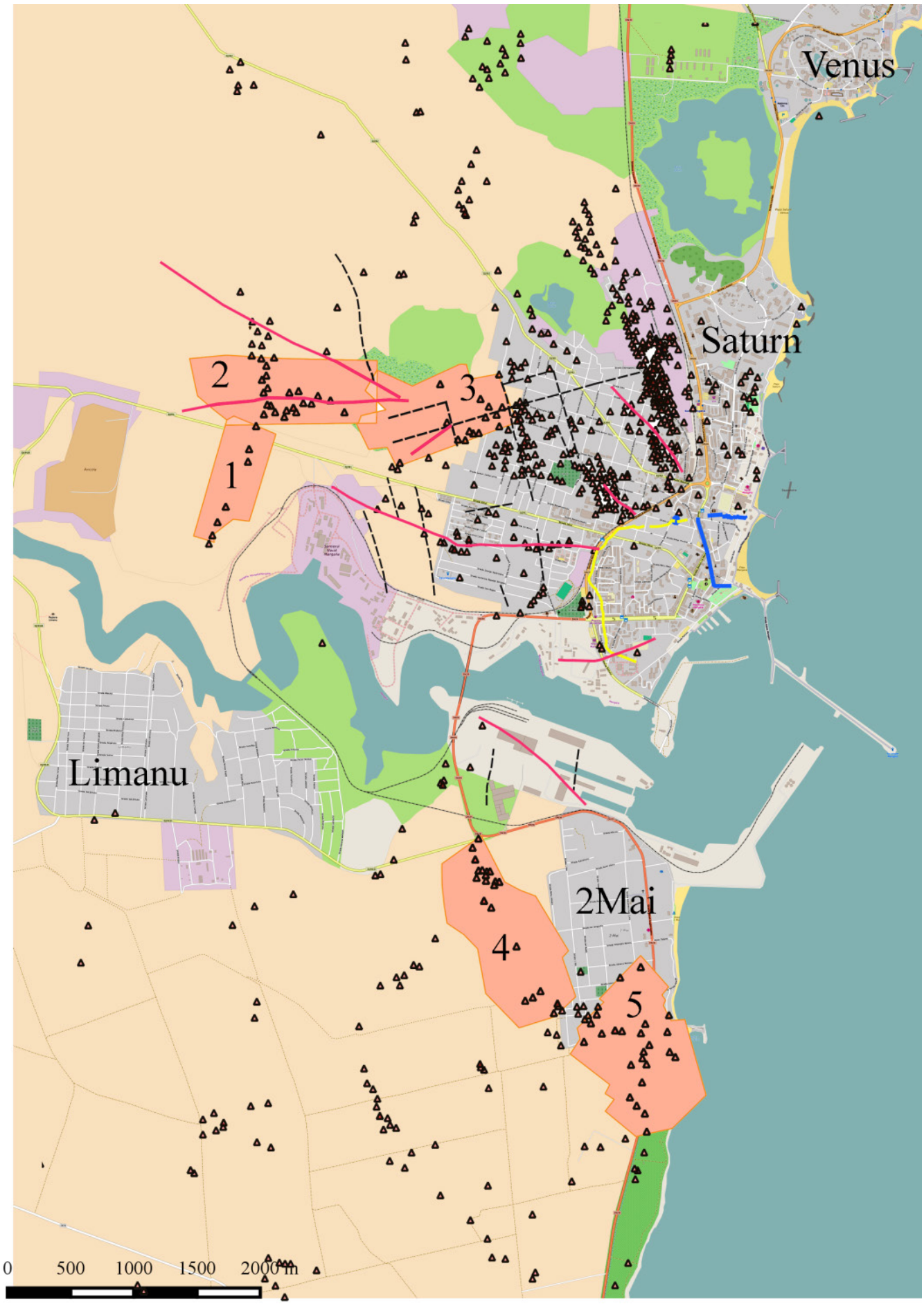

Fig. 18. Pink filled polygons represent the 5 areas documented by UAV at Kallatis necropolis in 2014-2016. See also the legend in fig. 7.

resulting high-resolution aerial imagery and 3D terrain models assembled through photogrammetric techniques, we have been identifying the surviving mounds, some almost completely flattened, establish their spatial distribution in relation to the general relief and asses their morphological features: shape, diameter and elevation profile. Other anomalies like ancient roads and various gridded alignments which we interpret in part as ancient land allotments (*kleroi*) could also be better observed and documented, detailing thus the outlines initially suggested by the study of the WWII photograph and other satellite imagery. The advantage of the involved method is the doubling of aerial imagery with 3D models of the terrain (25 cm/pixel resolution in our case) which helped revealing a variety of small relief anomalies - quite useful in the case of observing flattened tumuli, and clarified the elevation profile of others, detected on images (either medium or high altitude taken), establishing, for example, that some alignments may be considered anthropic structures (delimitations/walls) being elevated, but other alignments, similar in aspect on the satellite image with the previous, were, nonetheless, only drainage channels (lowered terrain, slightly winding aspect), unconnected with the cemetery layout.

In the western periphery of Mangalia we surveyed three adjacent zones (1 to 3) totalizing 168 hectares. In area 1 (Fig. 19), the focus was on Documaci Mound and its surroundings, respectively on the best preserved sector of the 'ring-road' which encircled Kallatis on a hilly ridge, at 5 km distance from the shoreline. Both the orthophotos and digital model of the terrain reveal the crowded nature of this road as a funerary alignment of mounds, arranged in at least two parallel lines, and maybe other structures[47], corresponding mainly to the nowadays pathway used for agricultural access between crops. The road heads south towards Mangalia Lake, to what could have been a former access component of the/an ancient harbour complex. The tumulus located in the northern extremity of zone 1 (labelled here 12)[48] measures 6.5 m in height and has a diameter of 67 m. Between it and Documaci mound (preserved now only in a small part) at least 5 more circular terrain anomalies follow the same alignment (tumuli labelled 6 to 9 and 11 in fig. 24). They measure now only 30 to 60 cm height and diameters between 45 to 55 m. They are spaced at distances ranging from 22 to only 5 m. Of course, the land was heavily altered by levelling activities and their embankments not only levelled but probably scattered, too. In the area corresponding to tumulus 9 the cultivated terrain is covered in dense manner in small fragments of stones; pottery is also visible, mainly Roman Age. An interesting feature of the relief west from Documaci is a clearly marked terrain semi-circular depression, measuring 4160 $m^{2,}$ in surface, with a medium depth of 4 m, aligned with the road and long axis of former Documaci mound. The depression opens immediately near the western periphery of the mound, preserved as the current access pathway, which is probably covering the tumulus *krepis*[49]. An estimation of the 'missing' volume of soil results in little more over 3700 cubic meters, fitting well enough an approximated volume of Documaci mound in its final building stage, at a height of 8 meters and 60 m diameter[50]. Rather odd would seem the extracting of building soil from only one side of the mound, as a full circle ditch was a more common approach. Nevertheless, even if the relief in the eastern side of Documaci was completely altered by the construction of the neighbouring military dyke and, thus, non-available for throughout analyse, the remaining unaffected zones - to the north and south of the mound, do not reveal any traces of lowered land.

In area 2 (Fig. 20) we investigated a neighbouring group of large tumuli mapped on the majority of older cartographic data[51] as having 3 to 6 m above the surrounding land, occupying an elevated hilly crest in continuation of the Documaci plateau, but on the other side (northern) of the road to Albești. These two plateaus represent, in fact, the highest relief west from Kallatis, elevated with more than 40 m above the shoreline, which is still visible from the city, and from where the land drops and visibility vanishes - a kind of natural border of an amphitheatre which could have been exploited as primary territory by the Kallatians. Today in the field, only two mounds (25 and 29) from this group can be still recognized with ease amidst the crops. They still measure 2 m, respectively 4.30 m in height and 28 m, respectively 31 m in diameter. The military map scaled 1/25000, from the 1970s, recorded their height as +6 and +3 m, difference which should be interpreted as the landscape alteration happened since. The construction of a military base right on top of this group of tumuli and of a road leading to it, affected the northern part of the mounds agglomeration. The DSM reveals the fingerprint of more flattened mounds in the group, some unrecorded even by the Military Map (1970s). They measure now only 30 to 40 cm in height, with diameters ranging from 20 to 30 m. The group appears to be consistently organized in parallel alignments (on DSM in fig. 27c being visible at least 4 lines) on a general orientation mainly related to the gridded system of land allotments identified in area 3 (Fig. 23, 29). This spatial organisation suggest that these tumuli are a component part of the initial planning of the necropolis and surrounding agrarian territory of Kallatis, even if they can be related also with the existence of two roads: the north-south ring-road

[47] During the excavation of Documaci Mound, stone walls were identified in its northern periphery, aligned with this road (according to archive data available to us).

[48] We decided to label all the remaining and documented by any means tumuli around Kallatis and 2 Mai in a unitary system, arbitrary started with Documaci Mound as tumulus 1.

[49] Some large aligned stones can be seen at the surface; the current pathway uses them as solid ground. The employment of a stone krepis was proved by electrical resistivity measurements (lateral mapping) undertaken by the authors in the northern periphery of the former Documaci's embankment – to be published.

[50] Obviously, it is not a direct and simple calculation. First of all we do not know exactly how Documaci mound looked like before its modern destruction (on the occasion of building the neighbouring military dyke, extraction of soil or even of the archaeological excavations). We know from older cartographic sources that it measured 8 m in height and we suppose it had 60 m in diameter based on the general relief and identification of *krepis* fragments, by electrical resistivity measurements, in the northern part of its embankment. The soil used in the construction was during the erection process intensely compacted for stability, so the volume of used soil could have been even larger. However, considering the known archaeological facts, it is very likely that Documaci Mound final shape was the result of at least two different construction stages, therefore the final embankment would have had already incorporated part of an initial mound covering only the tomb with the first half of the *dromos* (the one with barrel-vaulted roofing) before the erection of the statue base.

[51] For example PDT (*Plan Director de Tragere*) mapped there 15 mounds.

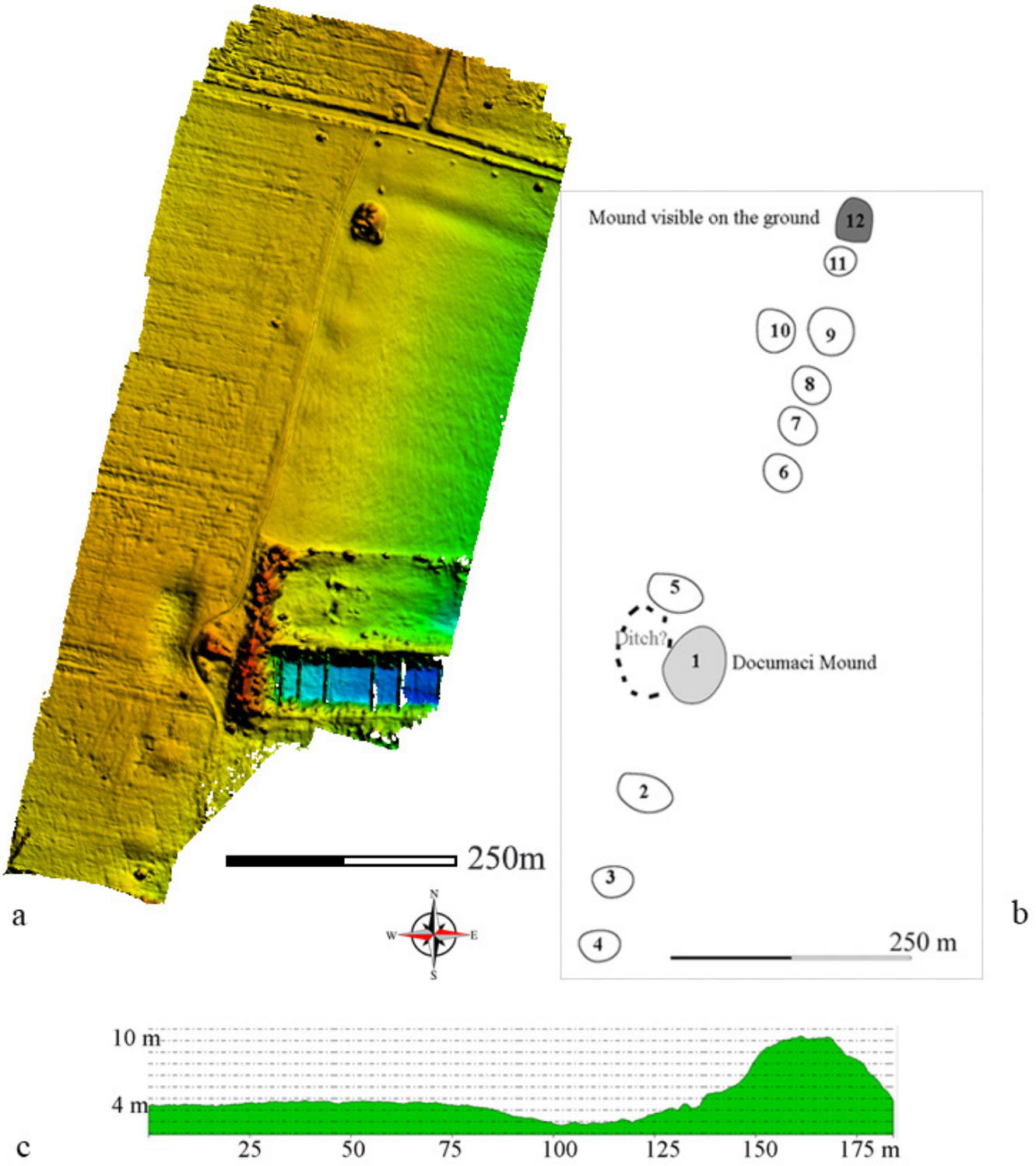

Fig. 19. Area 1 in fig. 18: a. digital surface model; b. mounds visible on DSM – the empty shapes represent flattened tumuli; c. elevation profile (west-east) on DSM along what was left from Documaci Mound and its western periphery (ditch?). East from Documaci Mound a military dyke was built (with red in DSM).

and an east-west one. This west-east road is clearly visible on all types of aerial imagery as a dark coloured slightly curved anomaly, stretching between mounds. The analysis of the digital model of the terrain gives us its profile, as a 40 cm relief depression of approximately 23 m wide. The continuation of this road towards east was identified, even if less clear, also on remote-sensing data collected for area 3 (Fig. 29) and probably corresponds with the tumuli agglomeration mapped according to the WWII image in the area of nowadays streets: *11 Iunie, General Vârtejan, Matei Basarab* and *Griviței*, where the road entered an ancient city gate.

In area 3 we investigated a complex layout of features, both mounds and various linear aerial anomalies, located right at the present interface between the developing city of Mangalia and its agricultural lands, where the last

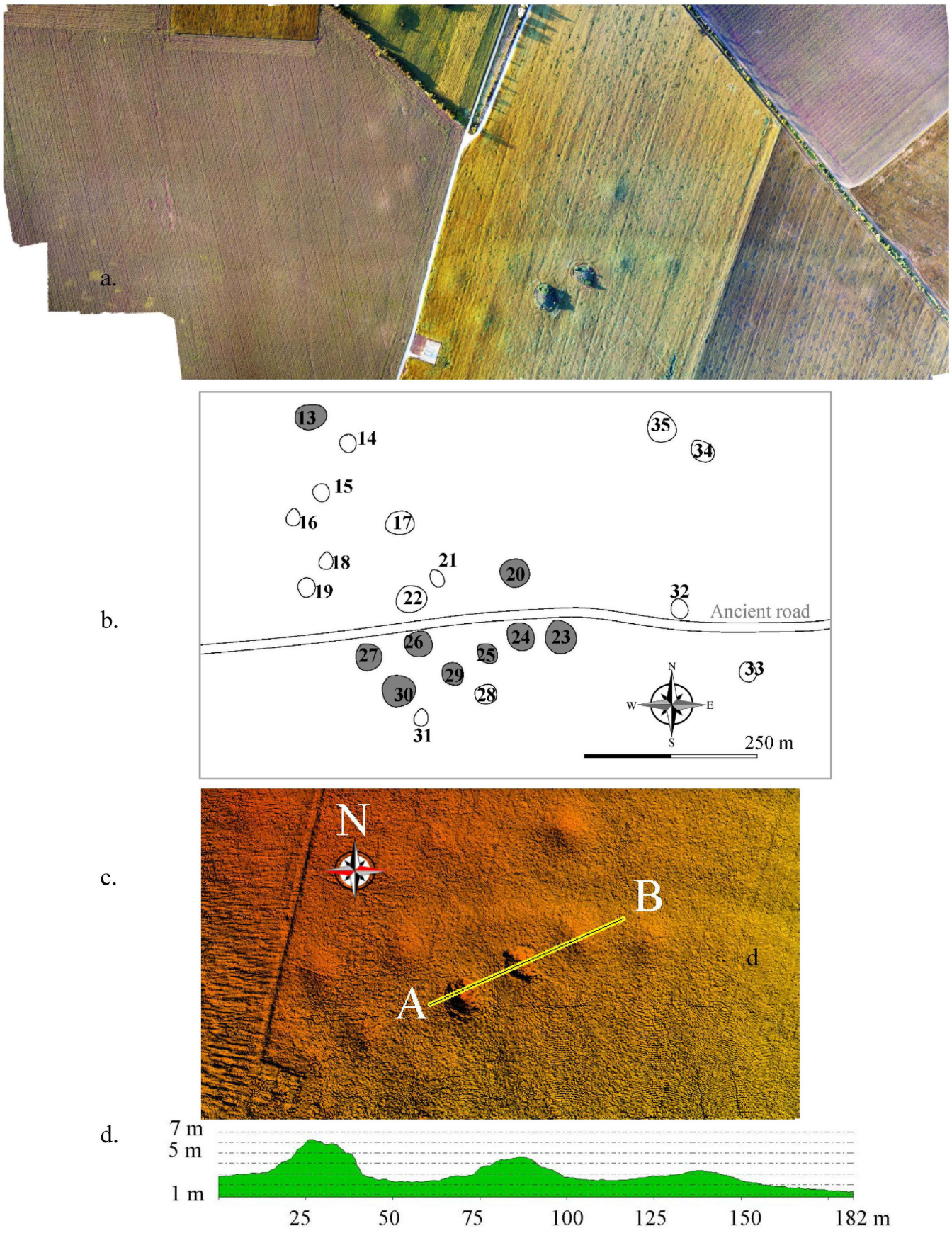

Fig. 20. Area 2 in fig. 18: **a**. orthophotography – north up; **b**. mapped mounds and ancient road; empty shapes = flattened tumuli; **c**. detail of DSM with elevation profile; **d**. A-B elevation profile.

surviving elements of the ancient necropolis can be still seen *in situ* (Fig. 21a, 22). By integrating the UAV products - like orthophotography (Fig. 22a), oblique low-altitude images (Fig. 21a) and digital models of the terrain (Fig. 24a) with

Fig. 21. Aerial views of Mangalia: **a**. from west (UAV area 2); **b**. from south (UAV area 4).

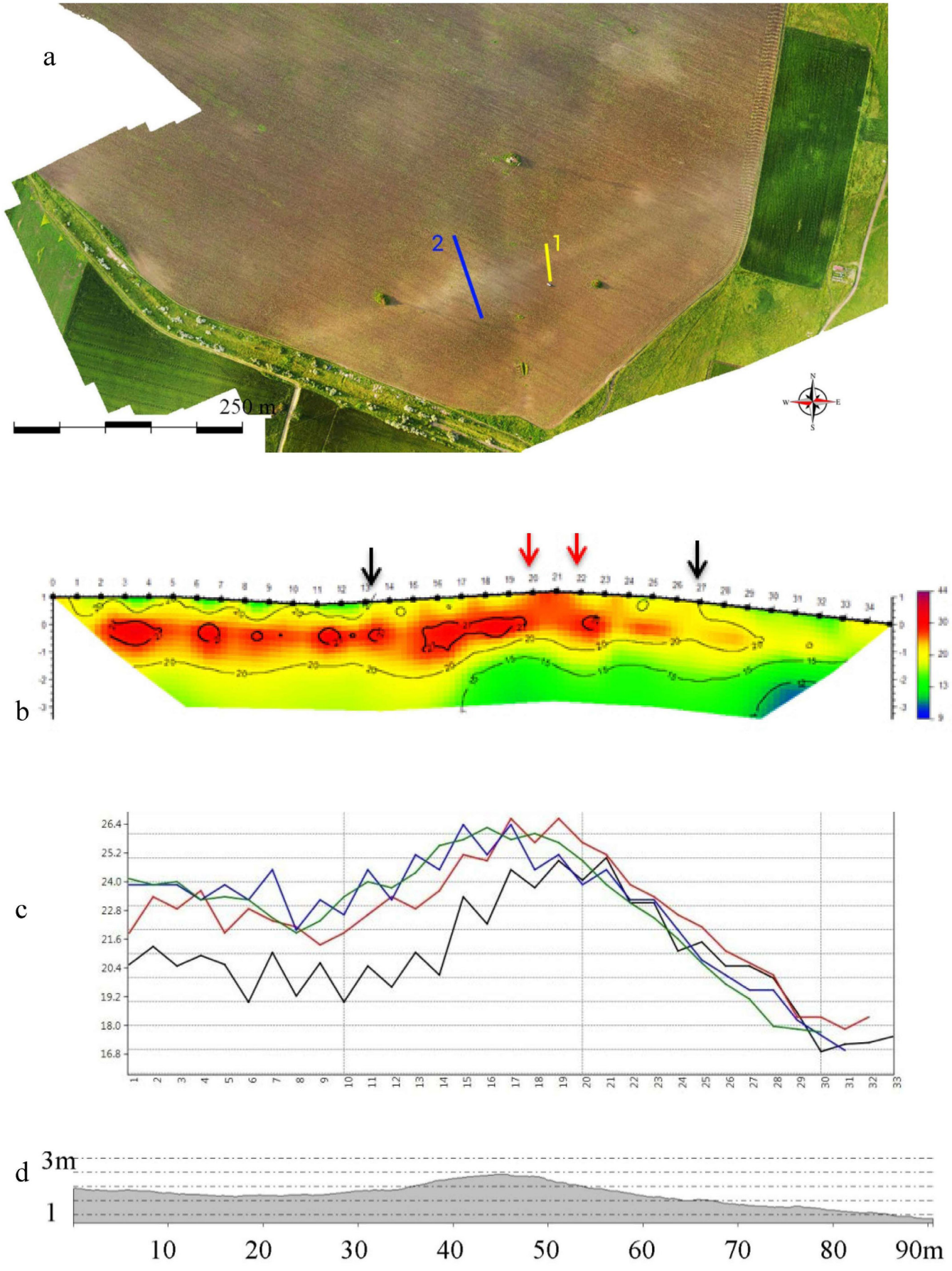

Fig. 22. UAV area 3: **a**. orthophotography: 1- ERT, 2 – elevation profile; **b** and **c**. ERT profile over the wall marked with yellow line on the orthophotography (S-N); **d**. elevation profile (S-N) marked with blue line on the orthophotography.

a

b

Fig. 23. a. UAV area 3 – oblique image from east; **b**. situation in situ with delimitation stone wall scattered on the ground (location of elevation profile in figure 22a – blue line).

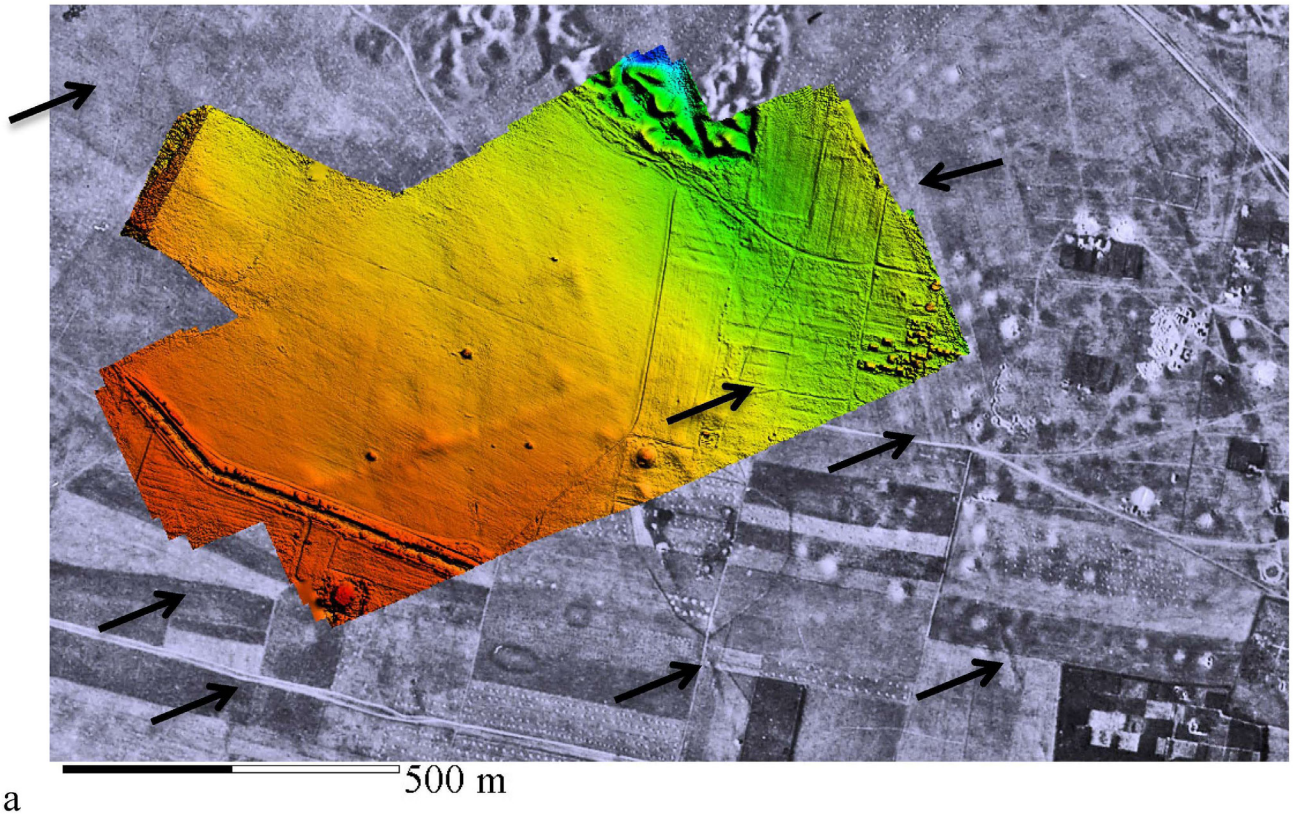

Fig. 24. UAV area 3: **a**. digital surface model of the terrain integrated with the WWII image; black arrows point to linear anomalies corresponding to DSM; **b**. interpretation (with blue – data extracted from DSM, with red – data from WWII image).

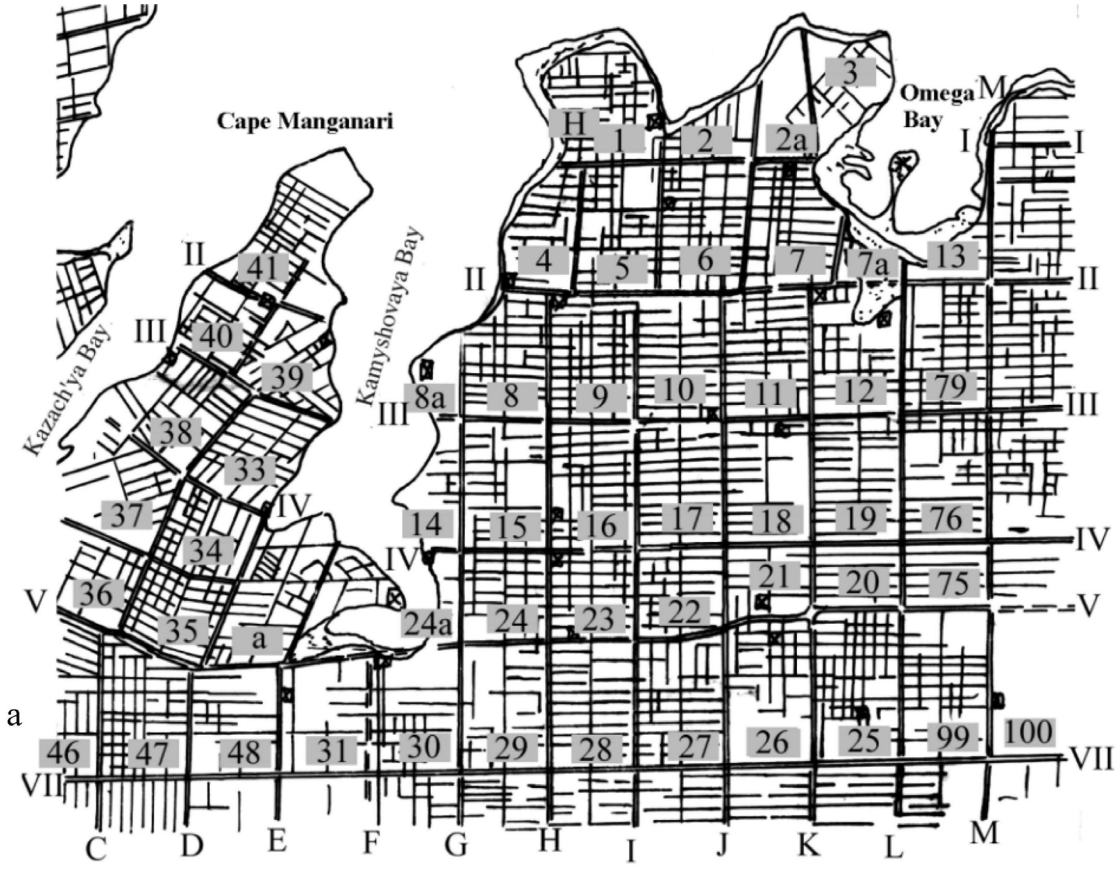

Fig. 25. Chersonesean chora (after NIKOLAENKO 2003). Results of the Herakleian Expedition 1976-2001.

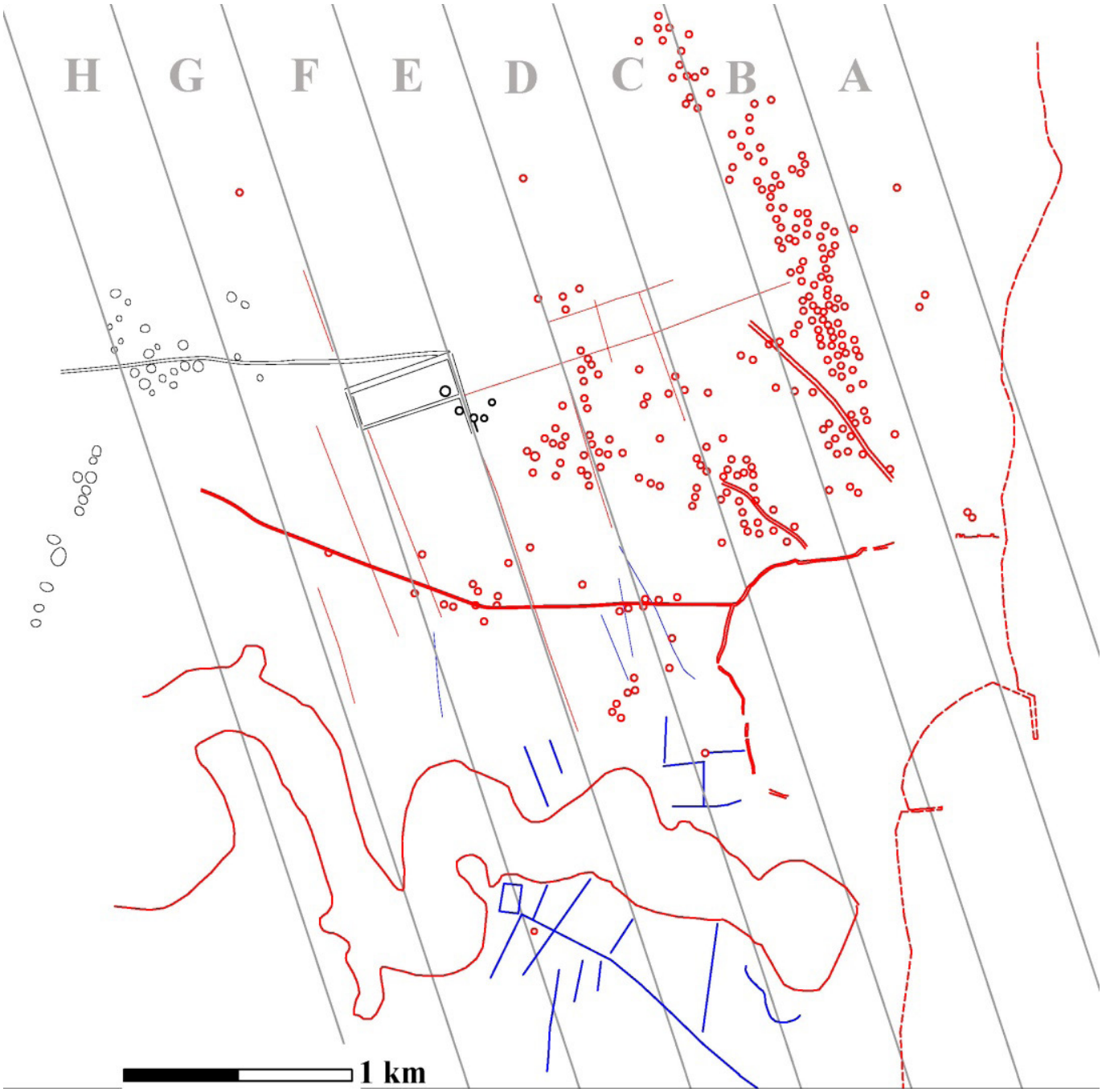

Fig. 26. The representation of an ideal grid (only the NNW-SSE axes), spaced at 460 m (according to measurements in F corridor), in comparison with other anomalies visible on various remote-sensing data: with red and blue – observations based on WWII image (1944) including shoreline, ancient fortifications, roads, tumuli and linear delimitations; with black – features mapped based on UAV flights (2014-2016); blue was used for lines visible on WWII image which are more difficult to interpret – either modern or ancient.

the WWII image (Fig. 12) and satellite data, we focussed on detecting and understanding the ancient gridded system of land allotments (Fig. 22-24, 26). The most obvious is a series of 4 oblique linear crop-patterns, orientated NNW to SSE. While their orientation is generally consistent, they are neither perfectly straight nor perfectly parallel, difference which is caused by both the current poorly preservation state of the delimitations (scattered on surrounding lands on great widths - up to 40 m, see fig. 22d) and intentional differences in the initial planning system, because we might not necessarily have detected only the delimitation of the base-lots, but maybe, in cases, their inner divisions too/just.

The great extent on which these delimitations were scattered makes the measuring of their interval difficult. In sector E (Fig. 26), a measurement between the lines visible on WWII (which was manually georeferenced by the authors) is 420 m, while in column F when measuring loosely between the destroyed walls mapped in 3D with UAV, is 450/460 m. The 'vertical' lines reach Mangalia Lake, exhibiting a certain curvature south from the road to Albești, following the terrain.

The SE-NW ('horizontal') lines are less preserved. Only two alignments were evidenced with more clarity, with a hypothetical third one, located further away, towards south

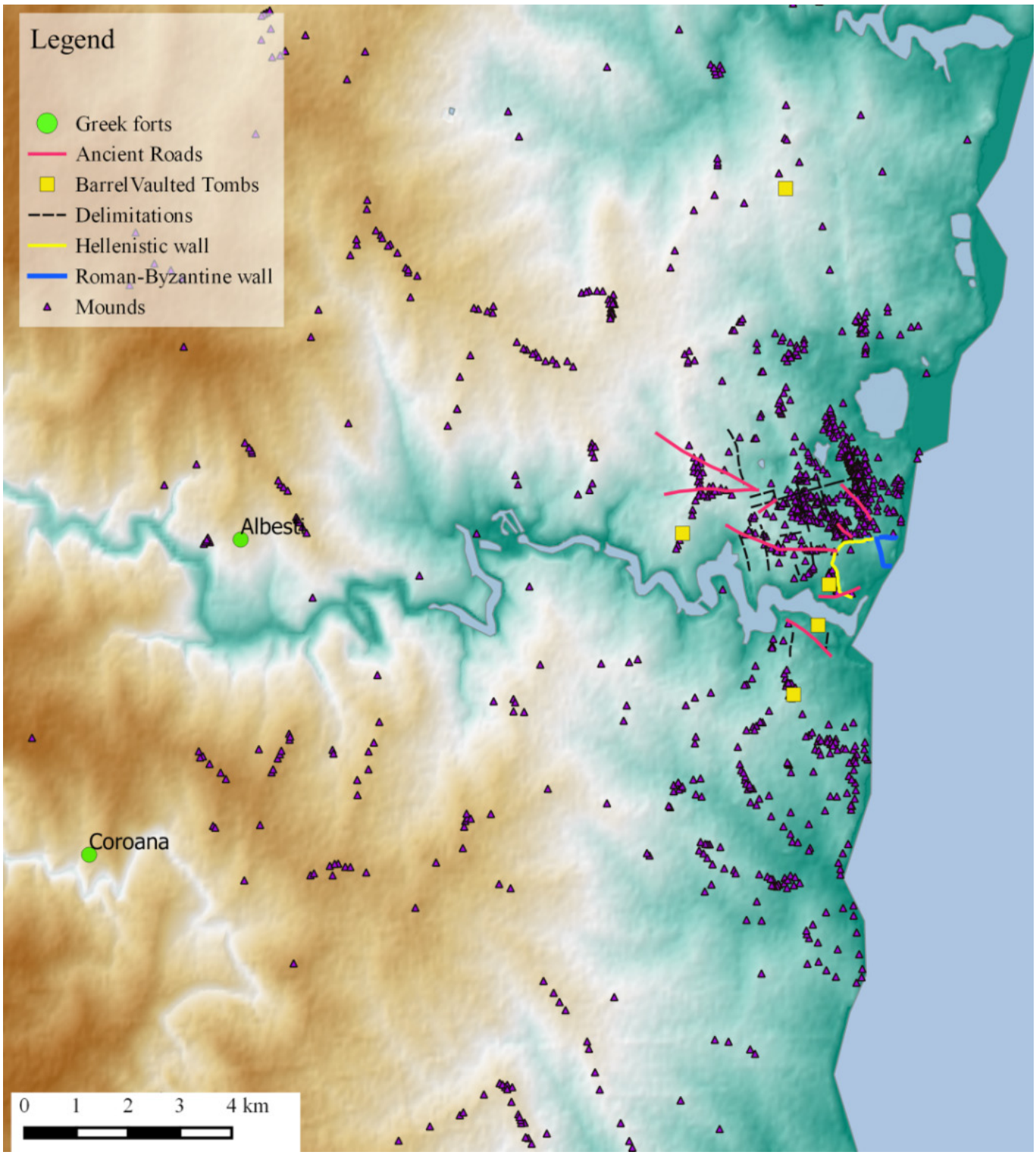

Fig. 27. Tumuli in the territory of Kallatis. Even if the mounds identified on various maps and satellite imagery around 2 Mai village do not fit the organized pattern of funerary lots existent in the northern part of Kallatis, their spatial distribution is mirroring the intensity of land use in the neighbouring territory of Kallatis on the northern shore, suggesting that the ancient harbour in Mangalia Lake which in Antiquity was communicating directly with the sea, had facilities, perhaps a satellite settlement, located on the southern shore, in the area occupied today by Mangalia industrial harbour and 2 Mai village.

in sectors D-F. That makes the establishment of the base width of the allotments even more difficult. In F is 170 m, while in D is 190 m. In D, the WWII image recorded several inner divisions NNW-SSE orientated at various intervals.

The delimitations were initially walls of dry masonry of unworked or partially worked local limestone blocks, currently preserved in the field as elevated linear saddles, 30 to 1 m high, 14 m to 40 m width[52]. The composing stones can be observed scattered in the ground, in some places in impressive heaps of material, together with numerous

[52] 14 m as seen on the ERT profile (fig. 22b) – the extent of the walls scattered vestiges is marked by black arrows. For location on the general plan of ERT profile see fig. 22 yellow line; 40 m as calculated on the elevation profile (fig. 22d); for its location see Fig. 22 – the blue line.

fragments of pottery, mostly amphorae (Fig. 23b). However, initially they measured just 2 m in width, as the profile of electrical resistivity tomography indicates (Fig. 22 b-c).

BURIAL GROUNDS AND SOCIAL ORDER

The spatial configuration and density of mounds retrieved based on various types of sources (older maps and plans, WWII aerial image, high resolution digital surface models) suggest that the cemeteries directly associated with the ancient city or with the habitation/farms located in its immediate surrounding territory occupied an approximately 5 km ranged semicircle around the Hellenistic wall, on a 12 km north-south extent, between Saturn Lake and Vama Veche. This semicircle corresponds to a natural relief amphitheatre which was in the direct visibility coverage from the ancient city.

Outside the amphitheatre edge and outside the visibility coverage, the density of tumuli drops considerably. The remains of the stone walls that divided the lots can be still observed also just inside this area, on the northern side of Mangalia Lake. Several linear anomalies appear on the WWII image on the southern shore of Mangalia Lake too, but they had a different orientation than the grid on the opposite side of the lake; unfortunately, the site is compromised for future investigations due to the industrial harbour construction. The 4th-3rd centuries funerary discoveries (both flat and mounds) occupied the land and roads practically on all directions (Fig. 7), suggesting that, during this early period, the funerary areas were numerous and extended, in contrast with the early Roman period or the 5th-6th centuries AD when cemeteries were fewer, more compact, even if crowded. Inside this huge multi-phased funerary space, several sectors can be identified. The most crowded are the two corridors heading towards north and north-west, on both sides of Blebea Pit.

The northern corridor, measuring approximately 2.7 km in length from the enclosure wall, appears as the clearest spatially organized. Tafrali recorded in the 1930s three alignments of mounds so densely structured that he interpreted them as fortification elements. The WWII image reveals there were at least seven north-south rows. Tumuli were built here, respecting the same spatial layout from the 4th century BC until the first centuries AD. The orientation of the northern corridor corresponds with the general system of allotted land, an orientation which was very probably derived from the main road exiting the ancient city towards Tomis, between two swampy lands (Blebea Pit and Saturn Lake). According to the WWII image, the grid column labelled B was the most crowded, however the image illustrates the situation existent 5 years after the construction of the railway to Constanța, occasion on which numerous tumuli were systematically levelled; so it could be that the alleged alignment A, was occupied in a similar densely fashion (Fig. 13). The space in column B was completely filled with mounds, built one right near the other, without overlays, at least not any observable on this kind of sources. The two mounds excavated by Preda in 1959, in the southern end of this corridor, were separated by less than 10 m between them. Based on the regular spatial organisation and long use of this cemetery sector without spatial disruptions we suppose that this was the main funerary area reserved for the initial body of citizens and their descendants.

The spatial layout of the north-western **sector** is a mixture between an organized group of tumuli, aligned to the allotted grid, and other mounds which followed the route of the north-western road, crossing aleatory trough the plots. This might mean that the land was used here as cemetery by different social groups, with the road and associated tumuli as a later configurator of the landscape. Except the northern road, all the other roads exiting the city towards west crossed over the plots' delimitations without any reference to the general grid alignment.

As previously stated, the mounds configuration suggests that a ring road encircled the limit of the main territory, including the agricultural lots of the ancient city. This road was a periphery but still in the visibility coverage from the city. Documaci Mound exploited a strategically visible site along this road. Between this road and the main burial grounds in the north and north-west the space was less densely occupied by mounds, suggesting that this could have been a space used for agricultural activities. In study-area 3, in the spot where we measured the elevation profile (Fig. 22a), some recent preliminary magnetic investigations gave us clues about the existence of a large stone structure with several rooms, aligned with the plot division wall, perhaps a farm/villa located in the territory. Further research here is needed.

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Witnessing the rapid destruction of Mangalia ancient remains during the last years, especially of the tumuli cemetery, which once stood so monumental, the authors wish to draw attention about the scientific significance of this archaeological ensemble and about the gravity of its actual state of preservation. Tumular landscapes have embodied long-durée memory and have given sense of place, even to people interacting with them centuries later. It is very disturbing to see how the rapid change of the urban configuration of Mangalia is producing a community without any place memory and with little respect for Antiquity.

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