NOTION ARCHAEOLOGICAL SURVEY 2017-2018

Christopher Ratté¹
Felipe Rojas²
Angela Commito³

Notion is an ancient Ionian city on the Aegean coast of Turkey, 50 km south of Izmir. The site is approximately 35 ha in area, surrounded by 3 km long fortifications (see fig. 1). It occupies a ridge running east-west and parallel with the coast, framed by two promontories projecting southward into the Aegean Sea. It is clear from the visible remains and from satellite imagery that Notion is a grid-planned city, oriented according to the cardinal directions. The promontories and the north and south slopes of the site are occupied by residential areas. The central ridge is dominated by a chain of public and sacred building complexes, set on terraces largely carved out of the native rock. These include, from west to east, the Temple of Athena, the “Heroon” (or possibly the “Temple of Apollo”), the Agora, the Bouleuterion, the Theater, and the “Gymnasium”. The highest point on the site is the hill east of the Theater, which rises to an elevation of 85 m asl.

One of the main results of earlier seasons of research at Notion (2014-2016) has been to show that intensive occupation of the site was relatively short-lived, extending only from the third century BC to the first century AD.⁴ This was an initially surprising discovery, since textual sources attest the existence of the community of Notion from at least ca. 500 BC onward (FrGrHist 1A, 1. F fr. 233). Episodes of radical expansion or relocation are frequent in Greek urban history, however, and perhaps the original settlement occupied only a small part of the site, or was located closer to the seaside and is now buried beneath river-borne silt. The textual sources also tell us that Notion was closely related with the nearby city of Colophon, situated 15 km to the north (Thucydides 3.34; Aristotle, Politics, 1303b). Colophon was destroyed by the Hellenistic warlord Lysimachus in the early third century BC (Pausanias 1.9.7; 7.3.4), and it is possible that the development of Notion as the monumental city preserved today was associated with the aftermath of this event. Indeed, in the later Hellenistic and Roman periods, Notion was known as "Colophon-by-the-sea” or simply as Colophon.⁵ The site was largely abandoned after the first century AD, perhaps because the population was lured away by the burgeoning metropolis of Ephesus.

Work in 2017-2018 had the following major emphases:

1) Geophysical prospection of select locations on the north, east, and southwest parts of the city
2) Documentation of civic and religious architecture
3) Documentation of quarries and local geology

¹ Professor of Classical Archaeology, University of Michigan, ratte@umich.edu
² Associate Professor of Archaeology, Brown University, felipe_rojas@brown.edu
³ Lecturer in Classical Archaeology, Union College, commitoa@union.edu
⁵ Étienne – Migeotte 1998.
4) Collection and study of surface finds, as well as study of objects found in 1994 by Mustafa Büyükkolancı, now in the Efes Museum
5) Site management and conservation

GEOPHYSICAL PROSPECTION

Two forms of geophysical survey were carried out in 2017-2018: magnetic survey in the southwest part of the city (continuing the program begun in 2014), and ground penetrating radar (GPR) survey in the north and east parts of the city. As in previous seasons, the magnetic survey was based on a grid of 30 X 30 m squares, laid out with a differential GPS system. A total of 30 full and 8 partial 30 X 30 m grid squares were surveyed with a Bartington Grad 601-2 fluxgate gradiometer. The magnetic survey has now covered all the easily accessible areas within the city walls (most of the city with the exception of the densely overgrown north slopes), serving to elucidate the street system as well as to record valuable information about the plans of individual buildings, especially the houses, as seen in fig. 1.

The GPR survey examined more limited and targeted transects. A total area of approximately 8.25 ha was surveyed with a combination of GSSI 200 and 400 MHz antennas. Data were processed with Reflexw software by Sandmeier Geophysical Research. The results are shown in figs. 2-3. Of special interest are the structures revealed both on the east side of the large open area tentatively identified as the “Gymnasium,” and on the terraces to the west of the “Gymnasium.”

Very little is visible on the surface in the area east of the “Gymnasium,” but the GPR survey revealed numerous buried features which are consistent with the identification of this area as a major public building complex (see fig. 3; the clearest feature lies at the southeast corner of the “Gymnasium”; it appears to be the northwest corner of a large courtyard structure). The identification of this building complex is by no means certain, but since it is clear that the Agora is situated in the center of the city, the possibility that this large open area belonged to the Gymnasium of Notion is attractive. The area west of the “Gymnasium” is similarly devoid of surface features, but here the buried structures seem to resemble peristyle houses similar to those at Delos rather than public buildings. Both areas would be promising locales for future excavation, since the depth of burial, estimated at 0.5 – 1.0 m, will ensure better than usual preservation.

DOCUMENTATION OF CIVIC AND RELIGIOUS ARCHITECTURE

Architectural documentation focused on the Fortifications (F. Rojas and A. Marko), the Temple of Athena and the “Heroon” (or “Temple of Apollo”) (C. Ratté), the Theater (F. Rojas and A. Marko), and the city’s hydraulic infrastructure, mainly its cisterns (A. Comnito and C. Kürtze). The Agora and the Bouleuterion are briefly discussed in an earlier report.7

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6 The magnetic survey was directed by G. Tucker, a doctoral student in archaeology at the University of Michigan; the GPR survey was carried out by Fırat Yiğit, with the assistance of G. Tucker.
7 Ratté et al. 2016, 621.
FORTIFICATIONS

Work on the Fortifications in 2017-2018 concentrated on documentation of masonry types and the configuration of the towers. A particularly interesting and well-preserved stretch of the walls in the northern part of the Fortifications was cleaned and recorded (see fig. 4). This stretch exhibits several different masonry types and possibly different construction phases.

The size of the towers at Notion suggests that they were not designed to accommodate heavy artillery. In the only stretch of wall with gates, on the north side of the city, towers are configured in such a way as to ensure that access to the city is always tangential to the walls. In other words, there is no extant gate offering axial access (i.e., access perpendicular to the line of the walls).

A few general observations may be offered regarding the immediate regional context of the Fortifications (particularly in relation to the walls of Colophon). As suggested above, the monumental development of Notion, including the construction of the Fortifications, probably followed soon after the destruction of Colophon in the early third century BC. A well-known inscription shows that Colophon itself had been refortified in late fourth or very early third century, shortly before it was attacked. Thus if the walls of Notion are to be dated to the first half of the third century, the people living in the Hales River valley would have built two sets of urban fortifications (e.g., first those of Colophon, then those of Notion) in the span of less than half a century. Not surprisingly, there are obvious technical similarities between the walls of Notion and those of Colophon: for instance, the use of the emplecton technique and “zipper” trace. The latter economizes towers while still offering good points of attack against besiegers.

Nevertheless, the walls of Colophon also differ in several key respects from those of Notion. For one thing, the walls of Colophon are more heterogeneous than those of Notion. The former, for instance, include a semicircular tower, whereas all the towers of Notion are rectangular. Furthermore, the topographical situation of Colophon (which is spread over several hills with streams running between them) posed serious challenges for military engineers. How exactly those challenges were met is not clear, but in Colophon there are stretches of non-encircled high ground that provide good vantage points for attacks against the city. The terrain at Notion, by contrast, lends itself more easily than that of Colophon to efficient fortification; perhaps the defensibility of the site (in addition to the suitability of the harbor) was one of the reasons why the promontories of Notion were selected for the expansion or relocation of the city. At any rate, at Notion steps were evidently taken to optimize interaction between the fortification and two key topographic features: the harbor at the mouth of the Hales River on the west, and the high ground northeast of the Theater. A salient to the northwest ensured protected access to the harbor, and the high ground northeast of the Theater was included within the enceinte to enable control over the road to Ephesus and a commanding view over the bay of Ephesus. The fact that the towers of Notion are not large enough to support artillery raises the question of the role played by kings and regional warlords.

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8 Merrit 1935, 358-76; Maier 1959, 24-31; SEG 19-698. For recent work at Colophon, see Gassner et al., 2107; for the fortifications in particular, see Bruns-Özgan et al., 2011, 203-13, with references.
in determining the technical specifications of urban fortifications in the Hellenistic East. It seems likely, for example, that when a community decided to build new fortifications, it was first necessary to secure the open or tacit permission of greater regional and transregional powers, and then to come to an agreement on the appropriate strength of the walls. Thus perhaps Notion was able to gain approval – presumably from the Seleucid authorities – to build new fortifications but was discouraged from including artillery-ready towers. In any case, it is worth noting that in 190 BC, the walls of Notion were strong enough to resist a siege by none other than Antiochus III (Livy 37.26.8).

TEMPLE OF ATHENA

The Temple of Athena was excavated by the French archaeologists R. Demangel and A. Laumonier in 1921.9 The identification of the building is based on an inscription documenting repairs by a priestess of Athena. In addition to uncovering the in-situ remains of the temple, Demangel and Laumonier dismantled a “Byzantine tower” just southwest of the temple, into which many blocks of the temple had been incorporated, and they arranged the surviving blocks of the temple around the foundations of the building.

The main effort of our work was to make a state plan and section of the temple (see fig. 5), and to record and catalogue a total of 133 blocks (see fig. 6).10 The dimensions of the temple are 9.39 X 16.04 m at the level of the euthynteria; the superstructure was built entirely of marble. As shown by Demangel and Laumonier, the façade of the temple was Corinthian distyle in antis. The column capitals are lost, but two fragments of one of the anta capitals were recovered (see fig. 7). They are similar in style to Corinthian capitals of the Augustan period at Ephesus, with prominent fluted cauliculi. The most diagnostic element of the entablature is the bucranium frieze, especially the division of the garland into individual sections hanging from the bucrania, rather than a single garland draped over the bucrania (see fig. 8). This and other details are also consistent with a date in the Augustan period, rather than the Hadrianic date suggested by Demangel and Laumonier.11

In addition to these architectural pieces, several fragments of the cult image of Athena were also identified (see fig. 9), and all of the well-preserved sculptural and architectural fragments were transferred for safekeeping to the Efes Museum in Selçuk.

The Temple of Athena is the only major building at Notion not aligned with the city grid. Thus while it appears to be one of the later buildings on the site, its orientation may reflect that of an earlier predecessor, shedding valuable light on the history of the city before the Hellenistic period. Indeed, the prominence of the local cult of Athena may be related to the establishment of an Athenian cleruchy at Notion in the late fifth century BC (Thuc. 3.34). This is also the only building at Notion of which a substantial portion of the superstructure is preserved, most

9 Demangel – Laumonier 1923, 362-73.
10 These plan and section were drawn at a scale of 1:25 by K. Toomasian, a graduate of the University of Michigan School of Architecture.
11 Demangel and Laumonier, 372-73; our thanks are due to Hilke Thür for a very informative discussion of the stylistic parallels for the bucranium frieze. For a useful summary of the stylistic chronology of both garland friezes and Corinthian capitals in the early imperial period, see Köster 2014, 17-21 (garlands and bucrania), 78 (Corinthian capitals).
likely because it was built into the “Byzantine tower” dismantled by Demangel and Laumonier. Presumably the other buildings of the city were extensively quarried for building remains some time after the construction of the “Byzantine tower,” but the dates of both undertakings remain uncertain – possibly late Roman, but possibly also much later, perhaps, in the case of the former, as late as the 19th century modernization of the harbor of İzmir.12

“HEROON” (OR POSSIBLY “TEMPLE OF APOLLO”)

The “Heroon” or “Temple of Apollo” was excavated by M. Büyükkolancı in 1994.13 It resembles the Temple of Athena both in size (9.89 × 14.93 at euthynteria level) and in construction materials (marble on conglomerate foundations), but the superstructure of the building is almost completely lost. In plan, the temple is divided by a crosswall into front and rear chambers; its most interesting feature is a subfloor space or crypt in the rear chamber, 1.98 (N–S) × 2.15 (E–W) m in dimensions and at least 1.6 m deep.14

During the excavation of the “Heroon,” several fragments were recovered of what appear to be honorific monuments or altars set up in the surrounding precinct. These include two inscribed orthostat slabs erected up-side-down on the east side of the building, perhaps in connection with a later reuse, together with two fragmentary moldings found in the excavation of the crypt. The latter are a base molding carved with a Lesbian cymation (see fig. 10), and a crowning molding carved with an Ionic cymation. They are similar in scale, and probably belonged to the same monument, perhaps a freestanding pedestal or an altar. The style of the exceptionally fine carving is of the second century BC.

Büyükkolancı identified the building as a temple or, on the evidence of the crypt, a Heroon. If the latter, it could have been a sanctuary of one of the legendary founders of Colophon, asserting a material claim to the regional preeminence of Notion after the third-century expansion or relocation of the city.15 The crypt might also be appropriate to Apollo, as in the nearby temple at Claros.16

THEATER

The Theater was partially excavated in 1985 and 1986.17 After cleaning in June and July of 2018, a laser scan of the building was made, which provides the most complete record to date of this important and well-preserved monument (see fig. 11). The building is 70 m in diameter, with an estimated seating capacity of 3500-4000.

The cavea is slightly greater than semicircular in plan and is divided into an upper and a lower portion by a single diazoma. The upper cavea has 12 cunei framed by 13 staircases and at least 13 rows of seats. The lower cavea has 7 cunei framed by 8 staircases. The exact number of

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12 Our thanks are due to S. Ladstätter for this suggestion.
14 A new plan and section of the building were published in Ratté et al. 2017, 633, Drawing 1.
15 Pausanias 7.3. Pausanias even mentions one such Heroon at Colophon, interestingly called “Polytechides,” or “Much fortified.”
17 Atalay 1986, 71, Resim 3-4; Atalay 1987, 147, Resim 1-3.
rows of seats in the lower cavea is uncertain, because it remains partially buried, but we estimate 13 rows, equal in number to that of the upper cavea. Both the seats and the analemmata are built of conglomerate blocks, extensively clamped and doweled, founded on bedrock. The slope of the cavea is 30%. The orchestra had an estimated diameter of 27 m. The seats are built entirely out of conglomerate rock; the estimated volume of stone employed is 3,260 cubic m. The rectangular stage building behind the orchestra had dimensions of 12 by 32 m. A restored plan is shown in Fig. 12.

The date of the Theater is uncertain, but it could be as early as the second century BC, and it has no obviously Roman features, such a vaulted parodoi.

It is interesting to speculate on what percentage of the total population of the city the seating capacity of the Theater would represent. We know from documentary evidence that Hellenistic Notion had at least 2,000 citizens, which would give a total population of upwards of 10,000 (estimating at least 5 persons per citizen-household); this may, however, have included people living in the territory of Notion outside the city walls. Estimates of the urban population of Notion based on the area of the city range from 3,500 (at 100 persons/hectare) to 8,750 (at 250 persons/hectare); estimates based on the number of houses yield a number of 4,000+ (800 houses at 5 persons/house). The Theater could thus accommodate at least one third and perhaps a much larger portion of the total population of the city.

HYDRAULIC INFRASTRUCTURE

Laser scans were made of previously undocumented cisterns (see Fig. 13). Like other cisterns recorded in earlier seasons, they are flask-shaped cavities, hollowed out of the bedrock, with estimated capacities of 30-50 cubic m.

DOCUMENTATION OF QUARRIES AND LOCAL GEOLOGY

Geologist P. Knoop (IT specialist, University of Michigan) and Brown University doctoral student C. Steidl were responsible for the study of quarrying activity at Notion. The terrain on which the ruins of Notion now stand was extensively modified for the construction of the city. In a way, that terrain was in itself a “quarry.” This much is evident from the many rock outcroppings throughout the city that were leveled in antiquity. Presumably, stone was extracted in the process of leveling areas such as the Agora.

Knoop and Steidl estimate that a total volume of 100,000 cubic meters of the local marble was removed from the site of Notion during the construction of the city. To put this in context, the total volume of stone used in the fortifications was approximately 55,000 cubic meters. But since at least 70% of stone removed from a quarry is discarded as waste, the stone quarries on site could only have provided approximately one-half of the material required for the fortifications. Most of the remaining stone required was probably quarried for sources northeast of the city (just across the modern coastal road and outside our survey region).

18 Gauthier 2003, 84.
**COLLECTION AND STUDY OF SURFACE FINDS; STUDY OF OBJECTS FROM NOTION IN EFES MUSEUM**

Collection and study of surface finds, begun in 2015, was continued in 2017 and 2018 under the supervision of A. Commito. The identification and classification of ceramics was directed by A. Berlin (Professor of Archaeology and Religion at Boston University).

In 2015 we carried out systematic collection in 10 × 10 m grid squares subdivided from the 30 × 30 m grids laid out for the geophysical survey, and in 2016 and 2017 we experimented with a program that targeted areas of high visibility. In 2018, collection was conducted using a new method: we overlaid a grid of 30 × 30 m squares across the site and sampled them in a checkerboard pattern, selecting in each a 6 × 6 m area for collection corresponding to the area of highest visibility. On fig. 14, the red dots mark the corners of the 30 × 30 m squares; the green dots mark the locations of the 189 6 × 6 m collection units. Our goal was to optimize sampling efficiency but also increase the areal extent and uniformity of coverage across the site.

In total, in 2017 we targeted areas of high visibility, covering an area of 4244 sq m and recovering 11,727 sherds, of which 1,802 or 15.4% were diagnostic. In 2018, using the new method, we covered 6732 sq m and recovered 24,449 sherds, of which 2,537 or 10.4% were diagnostic. Our decision to focus on surface collection in 2018 meant that in that season, the collection of pottery required efforts of the equivalent of 5 persons working for 2.5 weeks, and the washing, sorting, study, and documentation of the material a comparable amount of time. Thus approximately half the team was working full-time on this project. This flexible program allowed us to collect in varied locations distributed widely and uniformly across the site, including both inside and outside the fortification walls. The finds collected in 2017-2018 are consistent with those collected in earlier seasons, corroborating our hypothesis that intensive occupation of the site was limited to the period extending from the third century BC to the first century AD.

Finds of particular interest included the figural handles of two terracotta braziers of a type manufactured in Knidos and other sites during the Hellenistic period (third-first centuries BC) and widely exported around the Mediterranean world (see fig. 15). In 2017, we also collected ceramics from looters’ trenches. These ceramics were not included in calculations of the results of our systematic surface collection. One such illegal excavation lies just north of the northeast corner of the Agora, and was dug into the fill of the terrace running along the north side of the square. It contains a higher preponderance of recognizably earlier pottery than is true of the surface assemblage, presumably originating from habitation levels cleared away during the massive leveling operations required for the creation of the Agora (see fig. 16).

In addition to collection and study of surface finds, we also studied and documented all the inventoried finds from Notion in the Efes Museum in Selçuk. It is worth noting that these objects were of the same types as those collected in the course of our survey (including Hellenistic mold-made bowls, Ephesus-type lamps, terracotta loomweights, marble grave finds). Museum research was carried out by A. Commito, C. DiFabio, and C. Ratté.
stelae, and fragments of several terracotta braziers), further corroborating our interpretation of the results of the survey.

**SITE MANAGEMENT PLAN AND CONSERVATION**

Work in 2017-2018 on site management and conservation had three components:

*Interviews with local residents and other stakeholders.* The purpose of conducting interviews was to learn from local residents, business owners, students, colleagues, and museum personnel about their perspectives on Notion, its natural landscape, and archaeological remains, so as to plan for the future use and preservation of the site in cooperation with a variety of different stakeholder communities. An important component of such planning will be the implementation of a system of circulation (i.e., tourist path) through the site, designed both to elucidate the archaeology of ancient Notion and to capitalize on the natural beauty of the location.

*Testing of a possible tourist path.* We envision a path that will bring visitors into Notion from the northeast, and take them through the site along the lines of ancient streets in such a way as to draw their attention to the city plan and to major residential, civic, and religious buildings, concluding with the Temple of Athena. The path also provides lookout points across the water toward Ephesus and Samos, and toward the harbors of Notion, (as well as to the inland Sanctuary of Apollo at Claros). Many of the cities of ancient Ionia owed their prosperity to the sea, but in few cases is that relationship so strikingly present. We undertook to visualize and test the effectiveness of this path in 2018 by staking it out on the ground, mowing the grass in the area of the path, documenting it through still and video photography (see figs. 17-18), and showing it to visitors from the various stakeholder communities discussed above.

*Conservation planning.* A detailed survey of the condition of the major monuments of Notion conducted by Suzanne Davis of the University of Michigan.

**CONCLUSIONS**

The most important results of our research have been 1) to make a detailed map of the visible remains of the city, augmented by geophysical prospection, clarifying the street plan, the layout of the fortifications, and the architecture of civic, sacred, and residential buildings, and 2) to carry out an extensive program of collection of surface finds, showing that the city was only extensively occupied from the third century BC to the first century AD. The archaeology of Notion provides a dramatic illustration of the way one coastal community in western Asia Minor responded to and was affected by the turbulent developments of the Hellenistic and early imperial periods. And in the case of Notion, the archaeological evidence is complemented by an unusually detailed literary and documentary record. The fieldwork for the survey is now finished, and work is underway on the final publication of the results.
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