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# **Geomorphology Intern Final Report, 2000**

Eastern Korinthia Archaeological Survey

Carrie Bruno, Stella Kortekaas, and Sarah King

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## **Part One. Team 1 Field Team**

### **Carrie Bruno**

#### **Kromna:**

During the first week and a half, Team One, along with Team Two, surveyed the Kromna area. Kromna consisted of relatively undisturbed flat fields, small hills and quarries. The extensive quarries were, by far, the most challenging aspect of the first field area. Drastic changes in slope and topography caused many of the geomorphic units in the quarry to be small, complex, and difficult to digitize.

One of the most interesting archaeological features in Kromna consisted of five to six shaft tombs constructed in a fault scarp running roughly east-west. All of the tombs were cut into a thick K4 horizon at approximately the same orientation. Fractures throughout this horizon also followed the same strike and dip as the tomb cuts. Is it possible for a K4 horizon to contain a series of joints?

Stella and I mapped several geomorphic units together in Kromna. It was helpful to map with another GI, early in the survey, to make sure our mapping techniques were consistent.

#### **Kenchreai - Part One:**

Team One surveyed Kenchreai, (north of the harbor) during the second and third weeks of the survey. This area was premapped by the extensive team of Sarah and Bill. Kenchreai's terrain was more difficult to map and survey compared to Kromna because of the significant changes in topography and vegetation. The extensive team gave us a tour of the units they had mapped, to familiarize ourselves with the new field area. David Pettegrew and I discovered several pros and cons to premapped areas. The most obvious pro is that Kenchreai had already been mapped, which in turn saved us time in the afternoon, when David and I would normally take our daily mapping excursions, to do other tasks besides mapping. Also, Sarah had collected most of the data, which allowed me to join the LOCA team for a day and help them with geologic questions concerning Kromna. However, we also found some disadvantages with premapped areas. We did not feel as comfortable with Kenchreai as we did with Kromna, since we did not map it and therefore we had difficulties discerning GU boundaries.

Suggestion on how to reconcile this problem: 1) We could have asked the extensive team to come out into the field in the afternoon to review GU boundaries, after the initial tour. 2) Dave and I could have spent more afternoons in the field inspecting the next day's GU's,

instead of digitizing or doing other jobs. 3) We could have asked Sarah to be Team One's geomorph while the area was surveyed.

### **Kenchreai - Part Two:**

The next field area was south - west of the first Kenchreai field area and was not previously mapped by the extensive team. The majority of Kenchreai-2 was heavily terraced and scraped. David decided not to survey much of the area because of the disturbances. The team surveyed to the north, moving up a ridge onto a large plateau. Richard and Lee anticipated that there were at one time roads crossing the ridge from Kenchreai to Isthmia. Several linear features were discovered on top of the ridge, but were determined to be recent.

### **Kyras Vrysi:**

Kyras Vrysi was our final field area and was extremely easy to map. Team one's area was to the North of the Kyras Vrysi/ Hexamilia road. The area along the road was flat, with few changes in slope and few disturbances. One of the interesting features in Kyras Vrysi was a scarp (recently cut) containing a localized abundance of pottery. Pottery was concentrated 15 cm beneath the soil surface and reached a depth of approximately one meter. The contact between the soil and bedrock was planar with roughly right angled steps in the bedrock. I concluded the pottery pile was not the result of a drainage because of the right angle contact planes between the soil and bedrock. Another interesting feature in Kyras Vrysi was a linear exposed strip of bedrock/ K4 perpendicular to the Kyras Vrysi/ Hexamilia road. The strip of bedrock was 1 m to 2 meters in width and trended north/ south up a gradual slope for over 100 m. Parallel grooves (10 cm wide) in the bedrock were one meter apart.

## **Part Two: Team 2 Field Team**

### **Stella Kortekaas**

In the first week both teams were working in Kromna/Kesimia. The area surveyed by Team 2 (Team Frappe) was wedge shaped and bounded in the south by the road and in the north by a fault which forms a ridge in the landscape. The morphostratigraphy consisted of colluvial deposits. Along the ridge and at the rock outcrop in the NW, quarries were found. Very little modern human disturbance has been taken place in this area, except for some cut and fills. At the end of the week, Carrie and I went into the field together to map the saddle between the quarries where the boundary was between the survey areas of Teams 1 and 2. It seemed that we were quite consistent in identifying GUs and in the way we filled out the GU forms.

The second week we went north of the ridge and surveyed the area between the ridge and the road. This area consists of colluvial and alluvial deposits and is very flat, hence some larger GUs were mapped. Just north of the ridge there are some terraced fields of which the terrace steps are very small (about 30-40cm high). After consultation with Sarah and Carrie it was decided to take terraces like that together into one GU. At the far east of the Kromna/Kesimia area two NW-SE running faults were found in a grain field. Therefore, the field was divided into multiple small DUs, that due to their size and low visibility yielded very low artifact counts. In this area as well, very little modern human disturbance was found.

The first day of the third week we helped team Rondo to finish the Kromna/Boulberi area (the land of the wild dogs). The morphostratigraphy in this area is colluvium and because it is situated on the slopes of a hill, more modern human disturbance of the surface has been taken place by creating agricultural terraces. Several interconnected caves were found and in the NW, but this area was surveyed by team Rondo. Close to the roads a long rectangular quarry was found.

On Tuesday of the third week we moved to the area of Yiriza, Gonia and Agios Athanasios (saddle between Yiriza and Gonia), where we spent two weeks of the survey. East of Yiriza there are chamber tombs which are cut into the marls. These marls contain many fossil corals, oysters, other bivalves and gastropods. Almost the whole area consists of fields cut or dozed into the marls and colluvial and alluvial deposits. SE of Yiriza a few fields were found where soil seemed to be imported. This interpretation was made on basis of the difference in soil colour and texture in these fields in comparison with the surrounding fields. Also around Gonia and in the area of Agios Athanasios the modern human disturbance is very high and most fields are dozed or cut.

The last four days we surveyed the area of Kyras Vrisi and Agios Kosmas. This area is very flat and the GUs very large. In contrast to the Gonia and Yiriza area, hardly any modern human disturbance has been taken place here. A few gullies were found eroding the colluvial and alluvial deposits. At the west side of the surveyed area we found a linear depression which was taken as a separate GU because it seemed to be the continuation of the road feature found by team Rondo in the field south.

### **Part Three: The Extensive Team**

#### **Sarah King**

The role of the extensive team was different in nature from that of the intensive survey teams; this inherent difference lead to vastly differing opinions of what the day to day schedule and goals of this team should have been. The end result of this, in a nutshell, was that the goals and priorities of the team varies greatly from day to day, depending on who the active team director was. Filling the position of geomorphologist on this team meant that I got to apply not only my knowledge of geomorphology, but also many other facets of geology, outdoor training, and team psychology throughout the summer.

One of the motivations behind the extensive team was that, not having field walkers and actual survey procedures to deal with, we would be able to lay out units for the other teams in pre-selected areas, so as to lighten the load on the other teams and keep things running smoothly. To this end, units were laid out in the area of Kenchreai North of the ancient harbor and including both the Cummer tomb and an early Christian church. Investigations in the area Northwest of the coast by R. Rothaus and by T. Gregory, W. Caraher, and myself identified several other areas of interest, including a potential tower area and two quarries. For this reason, and in hopes of identifying any evidence of a road-like feature, a transect of GUs was laid out from the coastal area up to the tower area. These GUs were then walked by Team 1 as Kenchreai 1. There was some difficulty in surveying this area in a number of ways. The units initially laid out were intended to be rough, more general

units, aimed at understanding the area and determining if it should be surveyed, and were laid out in one morning over a large area of land. Thus, the geomorph working with the team still had some field work to do, and this was made more difficult because the new team's geomorph had not been given a chance to become very familiar with the area. As Carrie pointed out in her report, this could have been rectified by switching the two of us for a day, or by spending an afternoon together in the field concentrating on this area.

A second area selected for the extensive team was the potential pass through Oneion that would avoid the coastal area and the area controlled by Korinth. The pass was explored thoroughly and several exciting discoveries were made, including a small Ottoman/ Venetian tower and wall midway up the north face overlooking the northern slopes, and an extensive fortification surrounded by a series of outer walls and spur walls on top of the large rock outcropping on the east side of the drainage. Not surprisingly, there was very little artifact concentration on the slopes or near the paths, which were used as modern goat paths, but there was some evidence of late Classical/ Hellenistic coarseware and tiles on top of the outcrop in and around the fortification. This area was surveyed as a LOCA, and the walls and fortifications were surveyed and mapped on the topographic map by W. Caraher and myself.

Another advantage of having such a small team was that we would be able to move quickly across the landscape, conducting extensive survey to pinpoint areas of interest that should be included in the survey in the future. To this end, innumerable areas were walked and investigated, out of which came some modern areas of interest to L. Diakopolos, some exciting tomb areas of interest to Joe Rife, and several areas holding potential for the future of the survey. The later included and extension of the southern reaches of the survey from last year up onto the slopes of Oneion just south of the slaughterhouse area and west of the pass, where GUs were laid out for next season. Artifact density was extremely low here, and the area was cut by a series of migrating rills and gullies, making not the most promising of sites.

A more exciting area identified by the extensive team was an area near Ryto on the south side of the Oneion, where a recent 'excavation' by a farmer had created a new road cut and exposed a Mycenaean tomb area. There were possibly four tombs in this area, including a larger chamber tomb, identified at different times by D. Pullen, J. Rife, and T. Tartaron; these tombs were, however, already known. Further informal examinations of this area revealed fairly heavy artifact density to the east, with an agricultural area to the southeast and a possible fortress overlooking it in the northeast. The 'fortress' area is bounded to the north by a deeply incised, active drainage, while the agricultural area (still in use today) had several smaller, broader drainages. The area surrounding the tombs was laid out in GUs for survey next season, while the areas to the east were walked and identified in terms of general geomorphology and artifact density, but not laid out into GUs yet. This region is regarded as one of potentially dense habitation over a considerable period of time, based on the presence of sherds from Prehistoric, Classical, Hellenistic, and Roman periods. A thorough report on the prospects of surveying the vicinity of Ryto and the Mycenaean tombs is in T. Tartaron's, "Brief Prospectus on Archaeological Work in the Vicinity of Ryto for 2001."

A final role that this team seemed to fill was what we affectionately referred to as the 'kitchen sink' work, or the little tidbits here and there left over from other teams or areas. This included discussing geologic anomalies versus very eroded tombs with J. Rife, final assessment of wheel ruts and so-called wheel ruts, ecclesiastic topography with W. Caraher, and the ever-present search for roads.

One of the most geologically focused tidbits that came our way was the investigation of marine terraces in the area. Using four topographic maps (63577, 63578, 63671, & 63672),

nine potential terrace surfaces were identified. A day of field work trimmed this number down to five distinct terraces, with stops and numbers correlating to my field notebook:

behind militray base and village of Kenchreai, faces NE

Hadrianic Aqueduct, N of Athinios, faces E

box canyon near village of Kenchreai and tower area in Kenchreai transect, faces S

Mary's Ridge, Ag Dimitrios, faces NE

Rachi Bosca, faces NE

The numbers do not necessarily indicate relative ages of these terraces, nor should they imply that every terrace in the survey area has been included in this subset. The area around Kromna was also identified as a possible area of interest but not necessarily a terrace, although this was much debated. The outcrops here run NE, facing the SE, and increase in elevation to the SW. It was hypothesized that this could be the remains of a series of terraces over time instead of a single unit. Also, terrace number 1, which faces south, might simply be an outcrop of another terrace facing southward instead of its own distinct terrace.

This part of the extensive team's work was very interesting and promising both in its conception and in the day to day; however, the methodology and time allotted to this particular aspect of the project were not substantial enough to produce any final conclusions. A few of the terraces had already been surveyed either this season or last, and another was surveyed with T. Tartaron. GUs were laid out in the area by the Rachi Settlement and EDUs were walked, generating rough artifact density estimates.

Overall the season went really well on the geomorphologic aspects; the individual teams seemed to work relatively well together, although geomorph organization was sometimes in question. The two intensive team geomorphs made a real effort to work together to both collaborate and maintain consistency. Because my daily field work varied so much day to day and was so distinct from what the other two were doing, detailed discussions and examination between the intensive and extensive teams became a matter of interest, not every day necessity. The geomorphologic data seems reliable as a whole, and should be able to provide an accurate basis for analysis in the future.