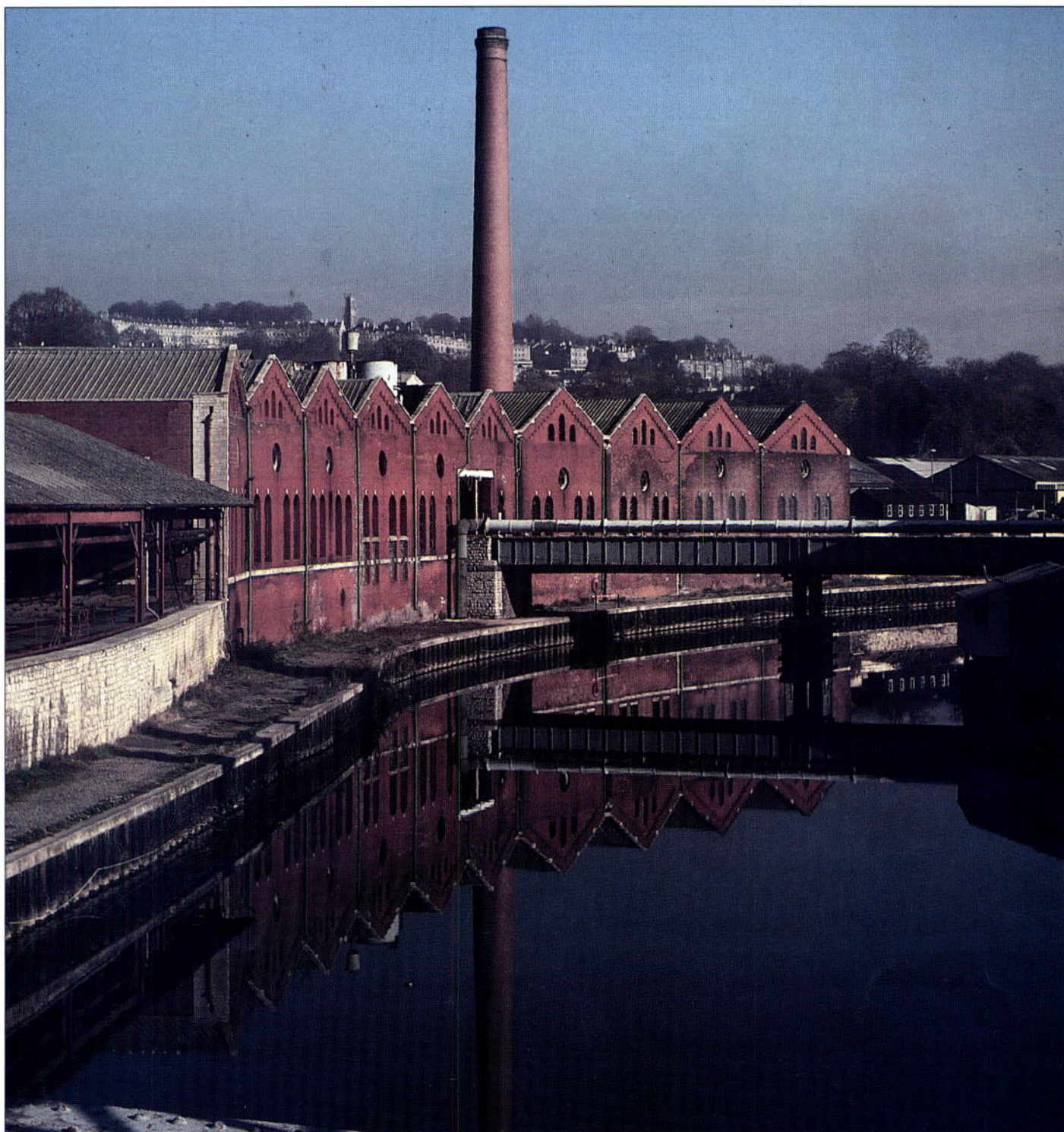


INDUSTRIAL ARCHAEOLOGY NEWS

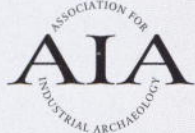
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THE BULLETIN OF THE ASSOCIATION FOR INDUSTRIAL ARCHAEOLOGY

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COVER PICTURE

IA News goes for colour: a nostalgic view of the gas works by the River Avon in Bath, 1975. The Editor invites readers to submit colour images for publication in future issues.

Photo: Peter Stanier

Olive Oil Soap Factory, Kardamyli, Greece

An olive oil soap factory complex at Kardamyli, 20km southeast of Kalamata in the Peloponnese, was surveyed during two brief, productive, and somewhat furtive visits in June 2000 – the total time on site being no more than two hours. The project's time-limited research goals were threefold: to identify and record standing structures and surviving plant; to investigate oral histories provided by local residents; and to produce an initial interpretation of the site.

Paul H Vigor

The Greek village of Kardamyli, with its red tiled, hip-roofed houses, Orthodox churches, shops, tavernas and kafeneons, represents a typical example of contemporary settlement in the Mani Peninsula. Kardamyli is recognised for the quality, and size of its olives. In most Manian villages the tallest structures one is likely to encounter are the region's famous medieval fortified tower houses, but in Kardamyli the loftiest, most visually dominant feature is a substantial, brick industrial chimney of the village's long defunct olive oil soap factory.

The origins and later history of the Kardamyli soap factory site appear somewhat enigmatic – an ability to converse in Greek would have helped! Apparently industrial activity commenced (date unknown) with the establishment of an olive oil mill. The site was substantially redeveloped c1932-33 and equipped to manufacture olive oil soap. Local sources suggest that a significant percentage of the factory's product was dispatched to the British market. Two explanations were proffered accounting for the plant's demise. Firstly, the factory was irreparably damaged by Italian forces during the Second World War, and subsequently abandoned. Secondly, the factory survived the hostilities only to close in the 1950s due to a combination of worn out, obsolete equipment and growing competition from modern plants in Kalamata.

In its heyday, the social and economic effect of the factory upon Kardamyli and environs must have been considerable – as both employer and consumer. It seems likely that many villagers found employment at the plant. Furthermore, the establishment of an olive oil-dependant industry must have boosted demand for the area's olive crop (a parallel between 1930s Greek olive oil soap manufacture, and the development of British sugar beet milling in the same decade?). However, the village's older residents appear to share one abiding memory of the factory – its novel introduction of electric lighting to this part of the Mani. Whilst this power source was probably confined to the factory site, many local people were undoubtedly introduced to the 'electric revolution' within the factory's walls.

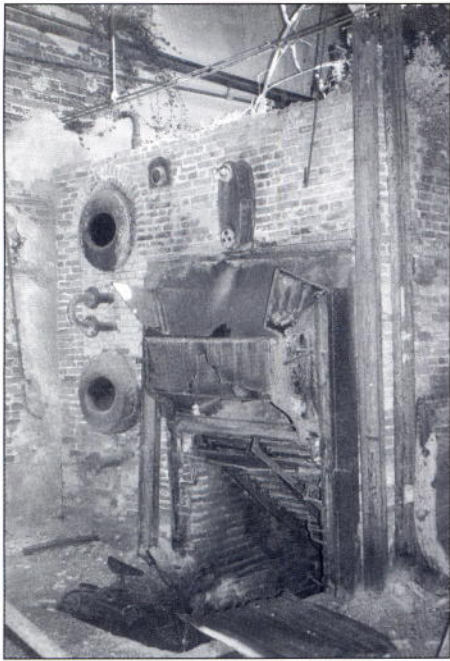
Judged by usual British standards, this twentieth-century industrial archaeological site appeared unique. Although decayed and overgrown, it displayed no obvious signs of gratuitous vandalism: no deliberate, mindless destruction; litter; graffiti; or debris indicating drug/substance abuse. Furthermore, the total absence of footprints in the dust suggested that visitors – human or animal – are few and far between (the author admits to having left one or two footprints during his visit!). The factory's buildings and structures were situated around three sides of an overgrown yard. The northern range comprised bulk storage tanks, bins and/or bunkers; the eastern side accommodated an engine house; and the southern range included a substantial boiler house with associated chimney, and soap production buildings. The western, seaward, side of the yard was undeveloped.

Preliminary investigation suggested that the factory's buildings represented two distinct phases of construction – the first rubble stone-based, the second brick and/or reinforced concrete. Roofing materials comprised either red tiles on timber framework, or corrugated iron supported by lightweight steel trusses. Stone



Kardamyli Soap Factory viewed from the west. The first phase soap preparation building is in the centre, with adjoining reinforced concrete oil fuel tank and pump house. The second phase extension (right) displays possible war damage

Photo: Paul Vigor



The smaller high pressure steam boiler, possibly an inclined tube generator of unknown make. The stoking hole, hopper, step-type grate and ash pit are clearly illustrated
 Photo: Paul Vigor

structures included part of the soap production building, and the engine house. Brick and/or concrete was utilised to construct the boiler house, the chimney, bulk storage facilities, two elevated tanks (one for fuel oil and the larger one holding water for the boilers?), and extensions to the soap production building. However, closer inspection of the buildings' fabric indicated two constructional phases, but three building styles – the use of stone being common to both phases. Whilst one stone building – the engine house – was clearly second phase (being directly related to the second phase boiler house), the stone-built portion of the soap production building appeared to represent earlier, first phase development. Thus, archaeological examination focused upon this particular building – with close attention being paid to building styles and fenestration. Observations made on site, and subsequent photographic analysis supported the two-phase, three style hypothesis.

The partially rendered, first phase portion of the soap production building appeared to predate the soap factory, displaying evidence suggesting adaptive reuse. As originally built, the structure may have featured a hipped roof, replaced (c1932-33?) with a conventional steel framed, corrugated iron clad, pitched roof. The first phase building featured segmented stone window and door arches. Conversion, and second phase extension, for soap manufacture required the blocking of certain windows, with others adapted to accept reinforced steel joists, and steel window frames. Stone-arched door openings were likewise remodelled.

External examination of various occupied, residential buildings adjoining the factory site suggested that – stripped of its industrial additions and corrugated iron roof – the first phase structure, as originally built, may have appeared very similar. A hip-roofed building,

adjoining the southern end of the second phase portion of the soap production building, may have perhaps been a warehouse/packing shed and/or office. It is suggested that this building may indicate how the first phase soap production building might have appeared prior to conversion.

Although suffering the destructive effects of a salt-enriched, marine climate, much of the factory's machinery remains *in situ* and basically intact.

The factory's prime mover was high-pressure steam, conveyed to both the soap production building and the engine house. Steam was generated in two water tube-type boilers of unknown origin, although one may be a product of Babcock & Wilcox (B&W), or represent a pirated copy of one of their designs. Both boilers shared common features including: manual stoking; longitudinal boiler drums; and steel-framed, brick-built combustion chambers. However, internal arrangements – especially the layout/number of tubes etc – appeared to differ. The larger boiler (54 tubes) featured a circular drum head with fittings (including a pressure gauge, and the remains of two gauge glasses), wrought headers, and handhole fittings closely resembling B&W's W.I.F.-Type boiler. The smaller boiler featured an ovoid drum head with remains of a single gauge glass, but no pressure gauge, headers, or handhole fittings. This may prove to be a simplified form of water tube boiler known as an inclined-tube generator. It remains unclear why two differing types of boiler were supplied to the factory.

Both boilers were equipped for manual stoking. Hand-loaded hoppers fed fuel onto inclined, step-type grates placed over ash pits. The use of step grates may suggest the boilers were designed to burn lignite. Supplies of lignite may have been transported by sea from a mine at Pastrova (near Stoupa) 10km south of Kardamyli.



Vertical steam engine, originally built as a pump and here employed to drive a generator
 Photo: Paul Vigor



Pickering Combination steam governor assembly supplied for the Averly horizontal steam engine, seen inside the collapsed engine house
 Photo: Paul Vigor

This mine was managed by one George Zorbas, who was immortalised by Nikos Kazantzakis as the character 'Zorba' in his novel *Zorba the Greek*.

The soap production building was divided into two processing areas, the southern (second phase) portion housing soap mixing, and the northern (first phase) soap condensing. The building hosted three small, single cylinder, flywheel equipped, vertical steam engines (devoid of maker's plates). Inspection suggested that all three engines were built as pumps. The first engine pumped fuel oil to three boilers apparently providing low-pressure steam for condensing mixed soap. The second turned a small electricity generator via a drive belt, whilst retaining its redundant pumping mechanism. The third, its pump removed, appeared to drive two sets of line shafting powering mixing and condensing plant.

These three engines might represent products of two separate manufacturers – two engines apparently sharing common design features. For example, the cylinders of the engines driving machinery were supported on pairs of iron columns appearing to act as slidebars – guiding and supporting triangular crossheads. These crossheads incorporated gudgeon pins and coupling rods transferring drive to the flywheel axles. Rods descending from the crossheads provided drive directly to the pumping mechanisms. The cylinder of the pumping engine was supported on an iron frame. No slidebars or crosshead were provided, the piston rod simply coupled to the connecting rod via a gudgeon pin, thence rotating the end of a crankshaft driving both flywheel and pump. The smaller flywheel, and apparently shorter throw of the piston rod, may confirm the pumping engine as the least powerful vertical engine on site. However, of the three, this engine appeared technologically more