under sail with little heel (5–6 degrees) and leeway (7–8 degrees). Slight weather helm only was needed. Sailing was attempted only on three occasions for a total of 1½ hours.

Speed and endurance potential

It is considered that at least 9 knots will be achievable with:

1 Crews more carefully chosen for size, strength and experience. Crew members must also be carefully arranged in the ship by size, to obtain the longest oar-stroke.
2 Lighter oars.

The people who bore the brunt of the sea trials of the trireme were the men and women of the oarcrew. Their enthusiasm and uncomplaining good temper was perhaps the most rewarding thing about the whole operation. It seems improbable, but they appeared to enjoy every minute of it, with the exception perhaps of the first two hours.

Further trials are planned for 1988. It is hoped then to have a crew practise long enough fully to accustom itself to the special manner of pulling the trireme needs, and to test her endurance on a voyage across the Aegean.

Industrial archaeology: the reality

M. PALMER & P.A. NEAVERSON*

The editors of the Industrial Archaeology Review *reply to Clark's remarks about their subject in the last number.*

The article, 'Trouble at t'mill' by C.M. Clark (1987; July issue, 169–79) is sub-titled 'Industrial archaeology in the 1980s'. As the editors of the journal referred to in the text, *Industrial Archaeology Review*, we are concerned that the readers of your journal should not retain the impression that the scope of industrial archaeology is, or has been, as limited as the article suggests. Clark selects two examples from one issue only of our journal to support her assertion that 'it reflects the dedication to plant rather than context'. The first of these, 'Lime kilns on the Gloucestershire–Herefordshire border' (Bick 1984), she claims refers to kilns without mention of the quarries which supplied them. In fact, the series of kilns are related to the Wenlock limestone and frequent mention is made to the quarries themselves and to the transport systems which brought the limestone to the kilns. Equally, Pamela Moore's article on the water wheel at Brownwich Farm in Hampshire, which powered farm machinery, does include a map which shows the water supply to the wheel and detailed discussions on the leats and culverts to the wheel: this is not 'water wheels without their systems' (Clark 1987: 171). Both these articles were chosen by us for inclusion in the *Review* for similar reasons: in the first place, they indicated the detailed work being done by amateurs and we subscribe wholeheartedly to the importance of industrial archaeology maintaining its grass-roots connections with amateur enthusiasts while at the same time developing a systematic and professional approach. It was said back in 1968 that the relationship between the amateur and the professional will need handling with tact on both sides (Buchanan 1968: 13) and this is very much our editorial policy. Secondly, further careful survey work on limekilns is necessary if a typology and its regional variations is ever to be established, and equally insufficient is known of farm-based water power installations: publication of short accounts like these is intended to stimulate further efforts in the piecing together of past industrial landscapes.

More importantly, we are disturbed by the

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implication in Clark's article that only recently has the context of industry been the subject of study by industrial archaeologists. She suggests that 'such an approach requires the intensive study of a limited area, considering all its aspects, archaeological and architectural, within the framework of a landscape'. In 1974 Michael Lewis and John Denton published an account of Rhosydd Quarry in North Wales, which had been intensively surveyed by a group of adult part-time students from the University of Hull (Lewis & Denton 1974). They recorded the buildings and plant in great detail, certainly, but much industrial archaeology is by necessity rescue archaeology and records must be made in the face of dereliction and destruction. However, they also made intensive use of documentary evidence and related maps to existing field evidence to produce a study not only of plant, but of associated housing, water supply, sources of raw material and transport systems in exactly the same way that the Nuffield Survey is now doing at Ironbridge.

David Crossley produced a study of ironworks in the Bewl Valley (Crossley 1975) utilizing all these techniques combined with archaeological excavation and analysis of finds. Our own work on mining sites in Wales and Cornwall (Palmer 1983; Palmer & Neaverson 1987) has included intensive surveys of plots of land on mining and estate maps as well as OS maps and has made particular use of a series of maps redrawn to the same scale, a technique which is not new to the Nuffield Survey. Finally, a large proportion of the articles in our journal are concerned with the context of industry: two of those actually cited by Clark (Jones 1982; Hayman 1986) are from *Industrial Archaeology Review* and there are many others, for example Joan Day 'The continental origins of Bristol brass' (Day 1984), D.G. Tucker, 'Millstone making in the Peak District of Derbyshire' (Tucker 1985), N. Greatrex 'The Robinson enterprises at Papplewick, Nottinghamshire' (Greatrex 1986; 1987) and J.-Y. Andrieux, 'Industrial archaeology in Brittany' (Andrieux 1987).

The classic definition of industrial archaeology (Buchanan 1972: 20) does, as Clark suggests, relate to industrial monuments rather than landscapes, but the rider was that such monuments should be considered in the context of social and technological history. David Cranstone's excellent report on Moira Furnace in Leicestershire (Cranstone 1985) was awarded the Fieldwork and Recording Award of the Association for Industrial Archaeology because it brought together techniques of mainstream archaeology with the attention to maps, documents and even photographs which make it possible for the industrial archaeologist to relate fieldwork to archaeological evidence.

It is our opinion that the wider perspective to which Clark refers, brought about by the utilization of techniques of traditional and landscape archaeology, has been employed by industrial archaeologists for at least two decades. Nevertheless, we welcome the application of these techniques, at last, to so important an industrial landscape as the Ironbridge Gorge. Their excellent interim surveys (Clark & Alfrey 1986) will serve as guidelines for further work on similar industrial landscapes.

C.M. Clark comments:*

The contention by Palmer & Neaverson that context has always been considered in their journal is very fair. Day's article places the brass industry in its historical context, Jones *et al.* stress social context, Andrieux uses a regional context. But that was not my point. It is the archaeological context which has so often been neglected. The key elements of this are a sense of time and of space. Archaeology provides a perspective through time, and thus the way in which that site (or landscape or piece of equipment) changes and is modified must be central to an archaeological intepretation. And as Lewis & Denton have shown so well, the wider topographical setting provides an understanding of the whole form and operation of an industry. Neither perspective can really be understood from documentary evidence alone.

It may be that the interpretative problems raised by Moore relate to alterations in the whole system, its water supply and the equipment it worked. Bick is reticent about the landscape surrounding his kilns and their chronology, instead concentrating on typology. In both cases a wider understanding of change through time, and the landscape as a whole, might have made two very useful papers seminal.

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Fieldwork such as this is the very basis of industrial archaeology, and there are clearly a variety of important techniques in use. But if we are to call ourselves industrial archaeologists – whether amateur or professional – rather than industrial historians, then we must be prepared to be specific about the methods we use to interpret the physical evidence. And perhaps we need to debate them in a wider forum.

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Postscript to a unique (Roman?) burial in Sardinia

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Some years ago I published in this journal a brief discussion of what was at the time a unique, possibly Roman, burial found in the territory of Villasor, Sardinia (Rowland: 1978). A similar burial, this one unquestionably nuragic, has subsequently been described (Moravetti 1979: 13, 17, 31). It was found by workmen in 1965 (p. 31; the reference to 1975 on p. 13 is a typographical error) in the locality Chiddaroni, about 500 m from the Nuraghe Don Michele, in the territory of Ploaghe, some 140 km N of Villasor; the workers who found the burial stated that the skeletons (of uncertain number) were arranged radially, that is (as Prof. Moravetti confirmed in the summer of 1987) in the same fashion as the Villasor burial. With the skeletons was a nuragic cup (5.7 cm high, 9. cm broad), similar to a vessel found at the nuragic site Orolu-Orgosolo. Thus, either both burials are nuragic (and Diana and Lilliu, incredibly, misidentified the vessel found with the earlier burial) or (what seems most reasonable) the Ploaghe burial is nuragic and the Villasor burial represents an example of continuity into the Roman period of an extremely rare form of burial.

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