

The sands and gravels that compose the 100 ft. (30 m.) terrace of the River Thames in South Essex are well known to promote crop marks in great variety. Such circumstances as the degree of retention of moisture by the sand, which in turn depends on the depth of the water-table, and the character of the deposit, mean that very slight differences in composition and texture of the subsoil may be revealed by differences in growth of cereal crops. Already two examples in this series have been drawn from South Essex, and, at Mucking, rescue excavations designed to retrieve as much information as possible in advance of destruction of the surface by quarrying, have been in progress for some years, largely financed by the Inspectorate of Ancient Monuments.* The principal archaeological features visible on PL. XXXI appear as three somewhat irregularly arranged circuits of dark lines broken by numerous gaps. The resemblance to the so-called interrupted ditch-systems of which a number (St Joseph, 1970) have been identified on river gravels will be immediately apparent. (The most thoroughly studied so far is that near Staines (TQ 02387255) excavated by G. R. Robertson-MacKay.) The precise site (TQ 65158055) lies on almost level ground, between two very slight hollows, each filled with a greater depth of soil which promotes the dark growth seen at the right and left hand margins of the plate (stippled on FIG. 1). At the time the photograph was taken the northern part of the area was in corn, the southern in roots: the contrast in the degree of detail visible in the two crops will be apparent. The plan (FIG. 1) is based upon the evidence of all available photographs: even in those years when the S field is in wheat few crop marks appear there. Indeed, there is a suggestion that delving, or slipping may have occurred anciently on the slope at the edge of the terrace, roughly along the line of the outer circuits of ditch: the marks so caused preserve the present line of the curve of these circuits, but all detail has been lost.

* DoE, *Excavations annual reports, 1966-7, continued as Archaeological excavations, 1968-, passim.*

The inner circuit measures between 80 and 95 m. across, according to the direction in which the measurement is taken: there is an interval of 30 to 40 m. between the inner circuit and the next one, and the third circuit lies some 10 m. further out. It may be noted that there is close correspondence between the two outer circuits, both in their general lay-out, and in their minor irregularities: for example, the flattening of the curve on the N side and the rather sharp turn to the left of that. Such correspondence would imply that the two outer circuits were laid out together, but there is no such conformity with the inner one. There, some 14 individual lengths of ditch may be distinguished: 17 or 18 may have formed the complete circuit. The ditch has evidently been quite irregularly dug: one length is rendered by crop marks which simulate two dots and a dash in the Morse code. The last two visible sectors of ditch on the E side are noticeably staggered. The outer circuits may be traced for not more than half the perimeter with 13 or 14 individual lengths of ditch in the inner of the two. Scrutiny of the photographs shows a very faint line parallel to the inner of these two large circuits and a few metres within it (FIG. 1). Presumably this is a narrow trench or slot, such as might have held some such obstacle as a light fence or palisade, with at least three breaks matching gaps in the ditch outside it. Such a feature does not seem to have been previously noticed in Britain, but a closely corresponding arrangement has been recorded, in France, by M. Jalmain at Noyen-sur-Seine (Jalmain, 1970, 64, FIG. 28).

Within the southern half of the inner circuit, five or six circular ditches appear. These do not look like normal 'ring-ditches' of ploughed out barrows; they appear, for example, to be not more than 10 m. across, considerably smaller than the 30 m. or more which is a common measurement for the diameter of barrow ditches. Nor may it be chance that at the centre of two of these circles small marks (? pits) are visible. These ditches, as also the interrupted ditch-system, are overlain by a

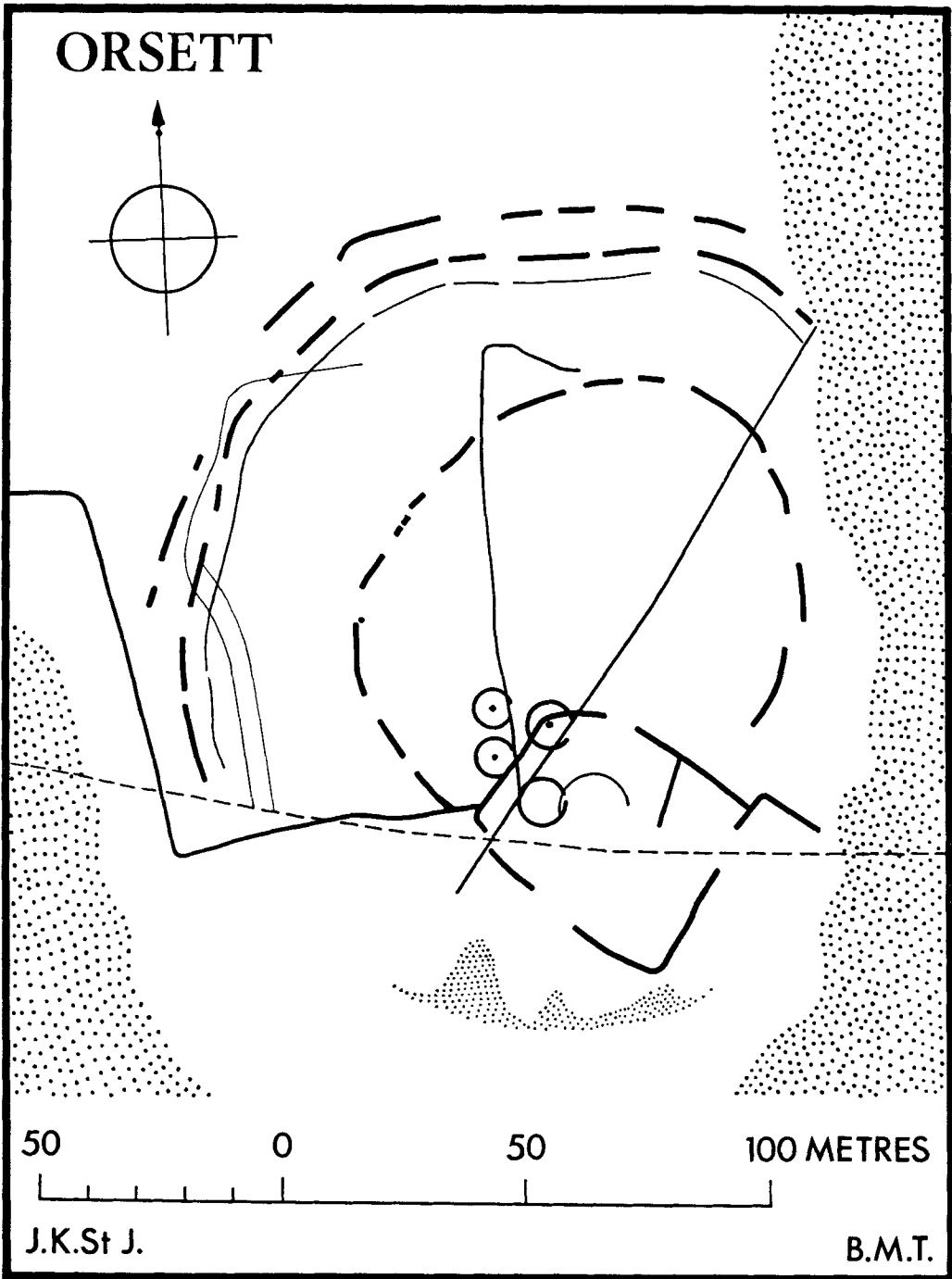


Fig. 1. Plan of crop marks S of Orsett, Essex

sub-rectangular enclosure, so that quite a complicated sequence of structures awaits a future excavator. No doubt most of the irregular marks to be seen all over the field represent tree-root or other incidental disturbances of the subsoil. However, a small number of prominent marks occur within the interrupted ditch-system; it would be interesting, indeed, if

JALMAIN, D. 1970. *Archéologie aérienne en île-de-France*.

excavation here could provide more information than has been available hitherto as to the nature and use of these enclosures. In view of the evident sequence of structures, the site holds out such interesting possibilities that there are strong grounds for ensuring its preservation from destruction by future quarrying.

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ST JOSEPH, J. K. 1970. Air reconnaissance: recent results, 20, *Antiquity*, XLIV, 145-4, pl. XXIII.

Prehistoric rock engravings at Fratel, Portugal

PLATES XXVIII-XXXA

The site of the prehistoric rock engravings of Fratel (Vila Velha do Ródão, Beira Baixa, Portugal) was discovered on 31 October 1971, by a group of university students, Francisco de Saude Lemos, Susana Rodrigues Lopes, Jorge Pinho Monteiro and Maria de los Angeles Querol, who were looking for palaeolithic artifacts on the river terraces of the region, as a result of information given to them by the ethnographer, Dr Paulo Soromenho. Through the kind offices of the Institute of Archaeology of the University of Coimbra, Manuel Farinha dos Santos, President of the Prehistoric Section of the Associação dos Arqueólogos Portugueses, author of the volume (1972) 'Pré-história de Portugal' (in the series 'Biblioteca das Civilizações Primitivas' admirably produced by Verbo, Lisbon), has sent us the following brief account of these engravings. The rock engravings are distributed over an extensive area of a schisty greywacke reef situated along the right bank of the Tagus river, with a maximum width of about 150 m., and extending from the vicinity of Fratel Railway Station to a point about a kilometre upstream. It is an open air site, with a few hundred carvings, some dating possible from the Neolithic and others from the Iron Age (with additional grafiti of recent date!).

The prehistoric rock engravings, produced by pecking with a stone or metal tool, as the case may be, show quite a surprising iconography, with anthropomorphic, zoomorphic, astral and abstract figures, with a marked tendency to semi-schematism, some of them being arranged in compositions whose meaning escapes us, while others are found in isolation.

The engravings of Fratel belong, from the stylistic point of view, to the vast Afro-European area, with evident affinities with the northwest of the Iberian Peninsula, Northern Italy (Monte Bego and Val Camonica) and Northern Africa (The Maghreb and Spanish Sahara). The engravings illustrated here include an astral design similar to those existing in the Pala Pinta shelter, on the Abelhõa (Reguengos de Monsaraz) menhir, and the Antelas (Oliveira de Frades) megalithic monument (PL. XXVIII*a*); male anthropomorphic figures resembling those found in Northern Portugal, with characteristic dark patina (PL. XXVIII*b*); a deer (PL. XXIX*a*), and a caprid in outline like those of the Maghreb (PL. XXIX*b*); finally, a group of animals, apparently including a bear (PL. XXX*a*).

As the site was due to be covered, in 1973, by the waters of a reservoir, the above-mentioned students have been engaged in documenting all the groups and isolated engravings, by photography, drawings and the taking of moulds, and plotting them in the process, under the guidance of Drs Eduardo Cunha Serrão and Vitor Oliveira Jorge.

Recently, although some of the engravings have been inundated, others are constantly coming to light, always on the banks of the river Tagus: there are now many hundreds which have not yet been studied. Meanwhile other discoveries have been made on the Spanish shores of the river. Dra Maria de los Angeles Querol (Madrid: assistant to Professor M. Almagro), who has studied these, as well as working on the Portuguese side, reports that so far they are comparatively disappointing.