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AN AMS RADIOCARBON DATE FROM THE HARAPPAN FLINT QUARRY-PIT 862 IN THE ROHRI HILLS (SINDH-PAKISTAN)

SUMMARY - An AMS radiocarbon date from the Harappan flint Quarry-pit 862 in the Rohri Hills (Sindh-Pakistan). During the excavation of the flint Quarry-pit 862, two small charcoal fragments of *Zizyphus* cf. *nummularia* were collected from the bottom of the structure. One of these fragments has been ^{14}C dated to 3870 ± 70 BP (GrA-3235), which indicates that the flint mine was exploited during a period of time in the development of the Mature Harappan Civilization. The date is particularly important since it helps dating the bullet-core technology for the production of narrow and very narrow bladelets.

PREFACE

The Harappan Site 862 is located on the Rohri Hills, some 3.5 kilometres south of the Shrine of Shadee Shaheed, along the western fringe on the hills themselves (fig. 1). It consists of two flint workshops (BIAGI *et al.*, 1995) and one large quarry-pit, a few square metres of which were excavated in February 1995. The major flint workshop, distributed over a surface of some 15 metres (BIAGI *et al.*, 1996), was characterized by debitage flakes, bullet-cores and narrow bladelets (fig. 2/1-14) as well as by a few potsherds of a flat-based globular pot with light buff surfaces which, according to J.M. KENOYER and R.P. WRIGHT (pers. comm. 1995), belongs to a type which was in use during the Mature Harappan Civilization and is comparable with a few globular vessel types from Mohenjo-daro (DALES and KENOYER, 1986: 251, fig. 7).

During the excavation of Quarry-pit 862, a 2x2.5 metres test-trench was opened inside the deposits (fig. 3). Two charcoal fragments of *Zizyphus* cf. *nummularia* (det. M. Madella) were recovered in square E6 at the depth of 1.30 metres, close to the quarry front. More precisely, the charcoals come from layer 4, rich in decortication flakes obtained during the preliminary chipping of the nodules, which also produced a few almond-shaped pre-cores (fig. 2/15).

THE ^{14}C DATE

One of the charcoal fragments was radiocarbon processed at the Centre for Isotope Research of the University of Groningen (NL). It gave the result of 3870 ± 70 BP (GrA-3235) corresponding

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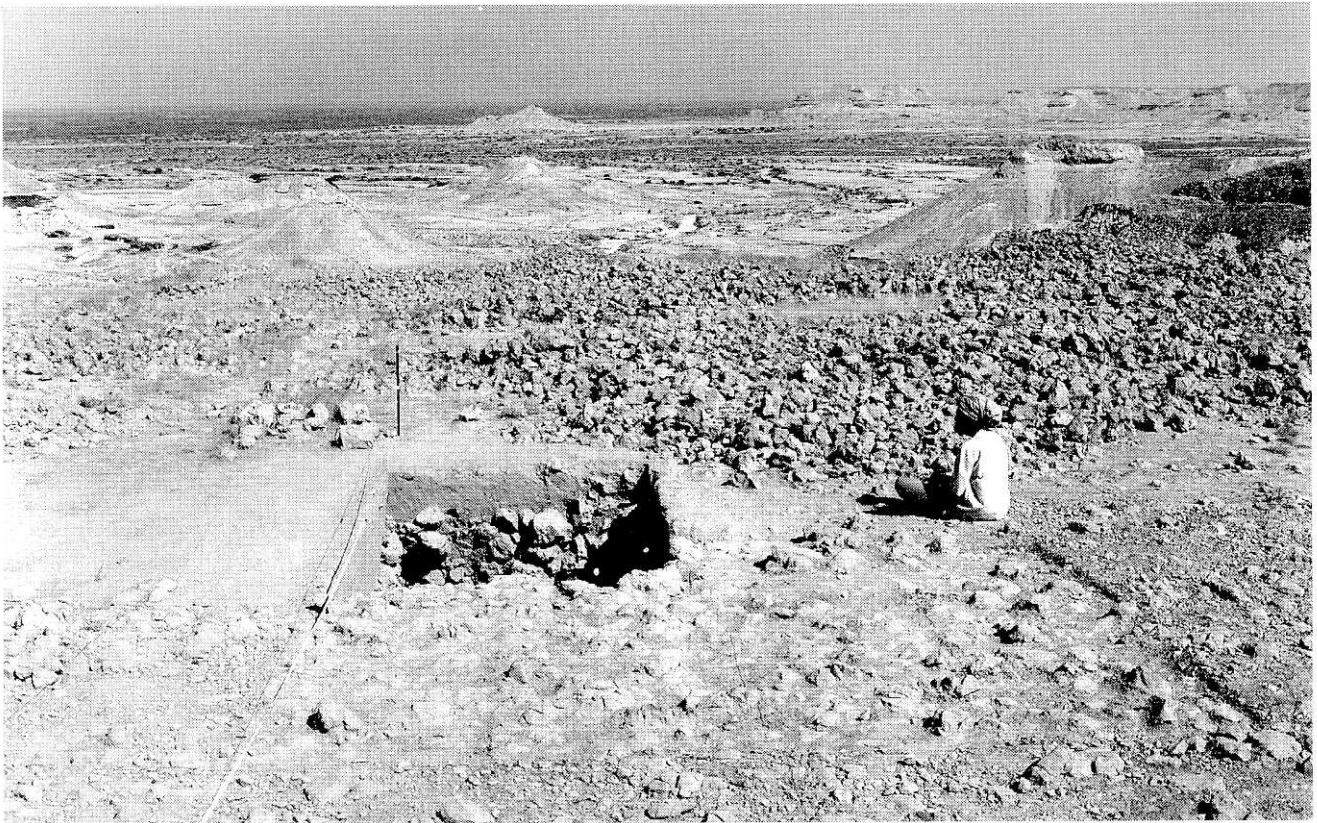


Fig. 1 - Site 862 from the east (photo by P. Biagi).

to 2466-2201 cal. BC years (STUIVER and REIMER, 1993). This date fits well into a period of time in the development of the Mature Harappan Civilization as confirmed by a good set of ^{14}C dates obtained, for instance, from Mohenjo-daro and Allahdino in Sindh (KENOYER, 1991a: 337), from Mound E at Harappa (KENOYER, 1991b: 43), as well as from other towns both in Pakistan and in India (LAL, 1994).

The absolute dating of Quarry-pit 862 is of extreme importance for the understanding of the chronology of the mining activity which took place in the Shadee Shaheed region of the Rohri Hills in Harappan times. The flint assemblage from the workshop excavated at this site, and strictly related to the quarry, is characterized by narrow and very narrow bladelets struck from typical, elongated bullet-cores (fig. 2) (BIAGI *et al.*, 1996). This production is known from a limited number of the extremely numerous flint workshops and quarry-pits so far discovered during the surveys carried out in this territory.

The relevance of date GrA-3235 is even greater if one takes into account the above-mentioned factor of the peculiarity of the chipping activity carried out at Site 862, since, as a consequence, it helps dating the bullet-core technology for the production of narrow and very narrow bladelets. Nevertheless it is obvious that more radiocarbon dates are necessary for a reasonable understanding of the duration and of the period(s) of exploitation of the Shadee Shaheed mining area according to the type of products which characterize the different sites.

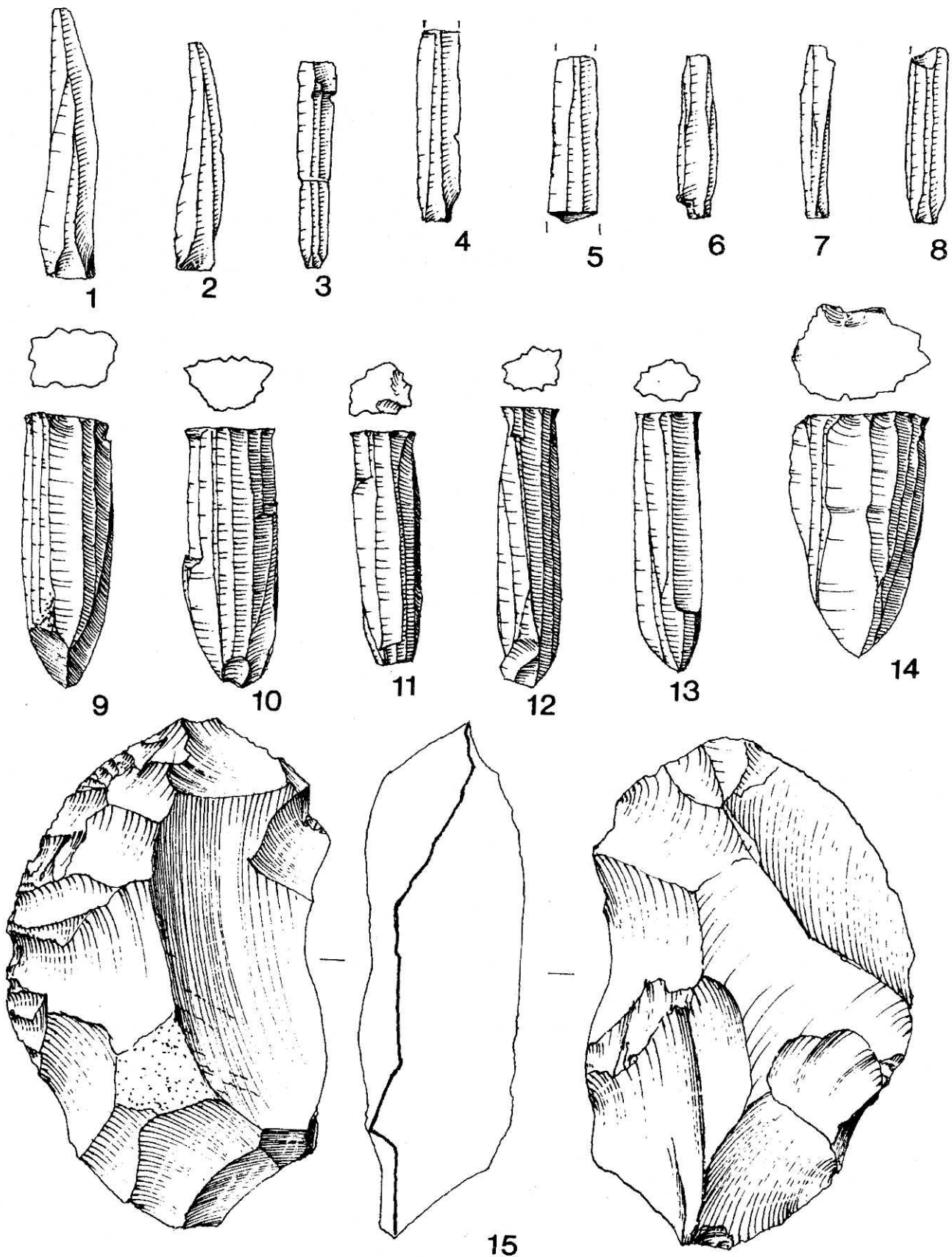


Fig. 2 - Narrow bladelets (1-8) and bullet-cores (9-14) from the excavated workshop and almond-shaped pre-core from layer 4 (15) (drawn by G. Almerigogna).

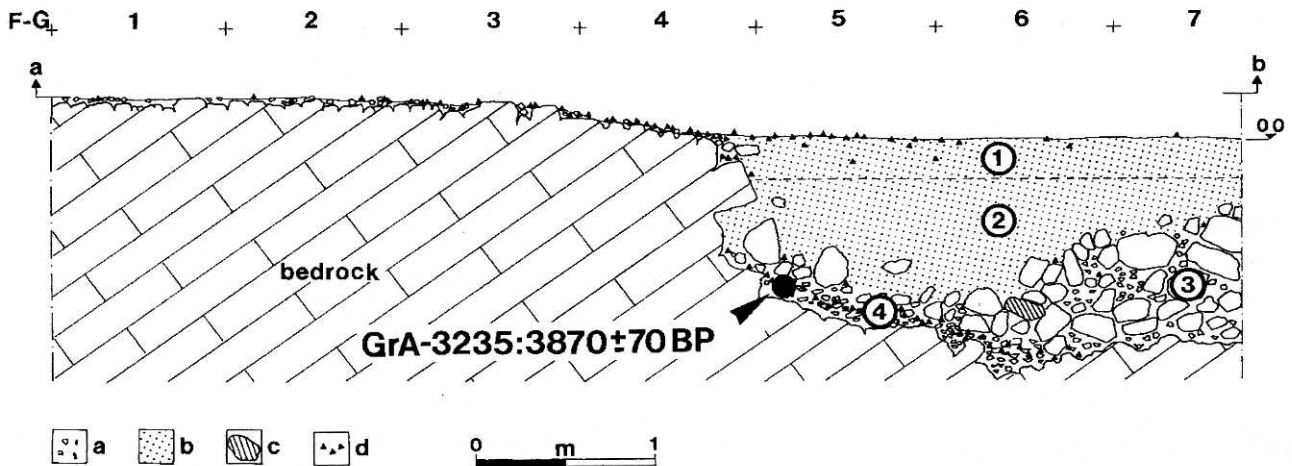


Fig. 3 - Section through the deposits of Quarry-pit 862 with the indication of the provenance of the ^{14}C dated sample (dot): a) reddish sandy-clay soil and stone rubble, b) eolic sand, c) flint nodule, d) flint artefacts (drawn by E. Starnini).

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