NEO-LITHICS 2/07

The Newsletter of Southwest Asian Neolithic Research

Contents

Editorial

It is now almost 15 years since the first PPN chipped lithics workshop in Berlin, when, among other things, the publication of *Neo-Lithics* was established by acclaim among the scholars attending the meeting. Within all the verbiage of the one-page editorial of the first issue (*Neo-Lithics* 1/94), the central theme was the importance of communication among all of the people working on Neolithic and Late Epipaleolithic chipped lithic issues so that timely exchanges of views, criticisms, and agreements could be reached, and in retrospect, it would appear that this fundamental goal has been achieved.

How things have progressed! The initial issue had a total of 5 pages, and the following issue proudly displayed a page 6 (although this included the title page, which was not counted in the first issue). In one sense, bigger was not necessarily better or desirable at the time, for postal costs were high and funds were low; readers might recall trying to cope with 9-pt font we used in order to reduce the number of pages and thus mailing costs. The printing format of the issues was also pretty cheap: merely photocopies on greenish paper.

The first couple of years admittedly faced challenges in terms of obtaining sufficient articles on chipped lithic topics for publication, and there were usually a few weeks

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OSL Dating of Neolithic Kissonerga-Mylouthkia, Cyprus

Tim Kinnaird[1], David C. Sanderson[2], Chris Burbidge[2] and Edgar Peltenburg[3]

[1] School of Geosciences, University of Edinburgh <Tim.Kinnaird@glg.ed.ac.uk>
[2] Scottish Universities Environmental Research Centre (SUERC), East Kilbride <d.sanderson@suerc.gla.ac.uk> and <c.burbidge@suerc.gla.ac.uk>
[3] School of History, Classics, and Archaeology, University of Edinburgh <e.peltenburg@ed.ac.uk>

Abstract

Optically stimulated luminescence ages of quartz extracts in Neolithic pits at Kissonerga-Mylouthkia, south-western Cyprus, correlate with published AMS results (calibrated radiocarbon dates range between 8740 and 6690 BP; OSL dates between 9600 and 7700 BP). The single-aliquot-regenerative-dose protocol proposed by Murray and Wintle (2000) was used to generate equivalent dose (De) distribution histograms for each sample. A consistent set of equivalent doses were obtained from each pit.

Introduction

Recent construction of new tourist facilities in Paphos, southwestern Cyprus, has necessitated the need for rescue excavations at coastal Kissonerga-Mylouthkia. The excavations, carried out by the Lemba Archeological Project (University of Edinburgh) between 1989 and 2000 revealed an extensive array of prehistoric archaeological features including pits, buildings, burials, and a remarkable series of deeply-cut well shafts (Fig. 1a). The wells are believed to be among the earliest in the world, and importantly contain some of the earliest data for domesticates, both animal and plant. Cultural materials, augmented by radiocarbon dates, define two main phases of human activity on the site. Most of the features date to the Early Chalcolithic period, around the mid-4th millennium calibrated B.C. (9 radiocarbon dates; Peltenburg 2003; Fig. 1b; Table 1), but a minority of features, primarily water wells, represent a considerably earlier period, the Cypro-Pre-Pottery Neolithic B (Cypro-PPNB), dating between the early 8th and mid-9th millennium calibrated B.C (5 radiocarbon dates; Peltenburg 2003; Fig. 1b; Table 1).

In this short note we present the results of an integrated optical luminescence dating and archaeological study to date two prehistoric features that potentially extend the range and extent of Cypro-PPNB features at Mylouthkia.

Optical dating provides a means to determine the burial age of sediments that have been exposed to sunlight (bleached) before deposition. The calculated age is the time elapsed since the last bleaching event. Many common minerals, including quartz and most feldspars, are able to store energy (and thus latent dating information) at defects within the crystal structure. Electrons may be evicted from their stable ground state by the addition of

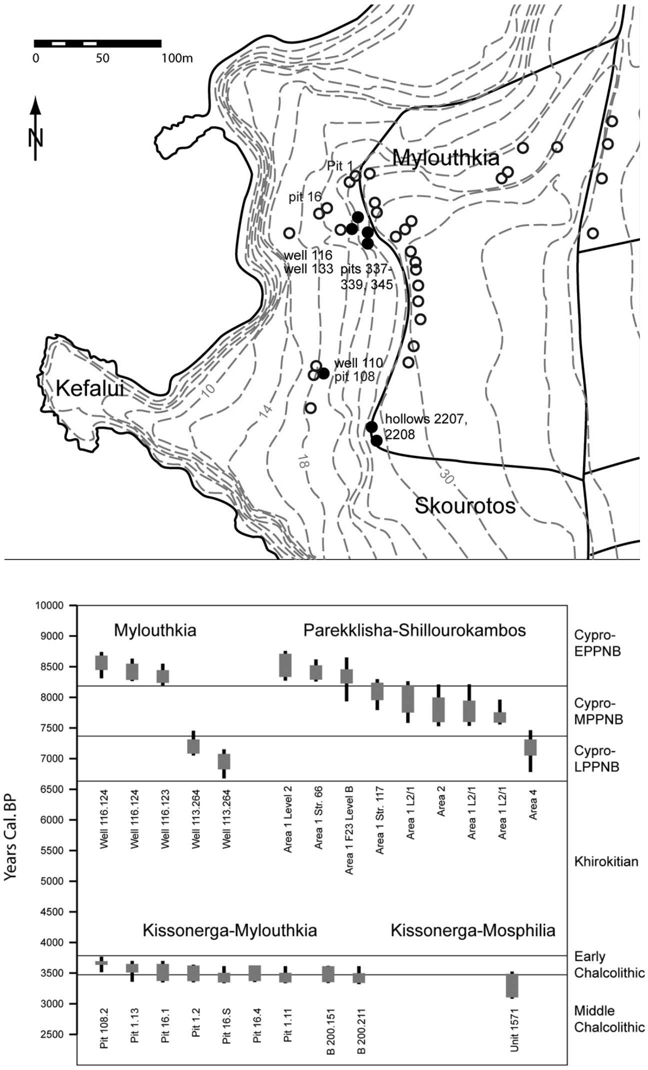

Fig. 1 (a) Site plan with location of surveyed and excavated features; closed circles denote Cypro-PPNB structures; open circles denote Chalcolithic structures. Features described in text are labelled.
(b) Radiocarbon dates (single s.d.) from sites of the Cypro-PPNB period (c. 8700-6500 Cal BC); Mylouthkia and Parekklisha-Shillourokambos (modified from Peltenburg *et al.* 2000; Guilaine and Briois 2000; 2001).

Table 1 AMS results from charred seeds, cereal grains and charcoal from sites at Kissonerga-Mylouthkia and Parekklisha-Shillourokambos (Peltenburg *et al.* 2000).

Context	Sample no.	Material	Years BP	Calibrated BC. from Oxcal (2 Ø)
Period 1A – Mylouthkia				
Well 116.124	Ox A-7460	Barley	9316 ± 60	8740 – 8320
Well 116.123	AA-33128	Grain	9235 ± 70	8630 – 8280
Well 116.124	AA-331129	Grain	9110 ± 70	8540 – 8490 (?) 8490 – 8200
Period 1B – Mylouthkia				
Well 133.264	Ox A-7461	Pistacea sp.	8185 ± 55	7450 – 7430 (?) 7350 – 7060
Well 133.264	AA-33130	Lolium sp.	8025 ± 65	7140 – 6690
Period 2 – Mylouthkia				
Pit 108.2	OxA-7464	R415 charcoal	4885 ± 45	3780 – 3530
Pit 1.13	BM-1475	Charcoal	4815 ± 60	3710 – 3370
Pit 16.1	BM-1539	Charcoal	4790 ± 80	3710 – 3360
Pit 1.2	BM-1473	Charcoal	4765 ± 55	3650 – 3370
Pit 16.4	BM-1540	Charcoal	4740 ± 50	3640 – 3370
Pit 1.11	BM-1474	Charcoal	4665 ± 50	3630 – 3360
Pit 16 face	BM-1476	Charcoal	4650 ± 50	3520 – 3360
Period 3 – Mylouthkia				
B200.151	OxA-7463	C525 Pistacia	4710 ± 50	3640 – 3360
B200.211	OxA-7462	C529 Pistacia	4650 ± 50	3630 – 3340

energy to the system, *e.g.* from exposure to ionizing radiation emitted during radioactive decay. A portion of the electron population may be trapped at a defect site, until a further amount of energy is introduced via thermal (TL) or optical (OSL) excitation. This additional energy overcomes an activation potential and allows electrons to recombine at other sites. If the recombination centre is of the luminescence-type, energy is omitted in the form of a photon. Luminescence emission following thermal stimulation is termed thermo-luminescence (TL). Luminescence emission following optical stimulation is termed optically stimulated luminescence (OSL).

The 'natural' signal – that resulting from the natural radiation during burial – is compared with signals, from the sample, resulting from known doses of radiation, administered by a calibrated radiation source. The 'equivalent dose' is the laboratory dose of nuclear radiation needed to induce luminescence equal to the natural signal. Additionally, an assessment of the radioactivity of the sample and its surroundings using chemical and/or radiometric methods, and the contribution from cosmic radiation is required. This is termed the 'dose rate'. A luminescence age is calculated by dividing the one quantity by the other, *i.e.*

$$\text{Age (ka)} = \frac{\text{Equivalent dose (Gy)}}{\text{Dose rate (Gy/ka)}}$$

OSL and TL measurements are made on small (typically 4-6mg) aliquots of refined quartz or feldspar (of a limited grain size) from the sample to be dated. As each aliquot is apt to contain a mix of grains, some of which are well bleached and others that are poorly bleached and/or not bleached at all, it is necessary to measure several aliquots to estimate a pooled equivalent dose and assess levels of scatter.

Background

Mylouthkia is a severely eroded coastal settlement located at the northern end of the Ktima Lowlands, overlooking a natural harbour, Kefalui (Fig. 1a), in the Paphos District. The site may have overlooked this hospitable anchorage in the Chalcolithic and Neolithic, though it is not known to what degree marine transgression or tectonic instability has altered this configuration. It is comprised of two distinct occupations separated by several millennia, assigned to the Cypro-PPNB and Early Chalcolithic. We have restricted ourselves to the study of the Cypro-PPNB in this report. An authorative account of the excavations at Mylouthkia is provided by Peltenburg (2003).

As of 2000, the Lemba Archaeological Project had identified five wells, a semi-subterranean structure and three pits belonging to the Aceramic Neolithic. Rescue excavations, necessitated by the recent construction of new tourist facilities in Paphos, subsequently identified two hollows that were thought to be Neolithic in age.

The features we refer to are visible in the road cutting serving Queens Bay Hotel, below the village of Kissonerga, *c.* 140 m south of the major Neolithic wells. They are located some 15 m apart and are buried beneath the modern land surface to a depth of about a metre. Sample 'SUTL1581' was taken from the fill of one of these features, a large hollow (designated 'Feature 2208') which measures *c.* 11 m from north to south, and is generally < 1 m deep. In the centre of this hollow, a basal depression exists which is *c.* 60 cm deeper than the adjacent base level. It is filled with a sequence of pale to dark grey ashy layers, silts and gravels. It is from this lower portion of the fill that the OSL sample was taken. The absence of pottery and the presence of a single worked flint suggest that this feature probably dates to the early (Cypro-PPNB) phase at Mylouthkia. Sample 'SUTL1582' was taken from the fill of a second feature of unknown extent (designated 'Feature 2207'). Cursory cleaning and examination of the exposed section yielded two stone vessel fragments and two pieces of worked flint which, combined with the absence of pottery, suggests that the feature should also belong to the earlier (Cypro-PPNB) phase of use of the site. Future excavation may yield material that can be radiocarbon dated, which would provide a powerful cross-check to the results gained from our OSL samples.

Methodology

Samples were collected from cleaned vertical faces by inserting opaque plastic and/or stainless steel tubes into the soil profiles, a depth of *c.* 15 cm. The samples were collected in natural daylight, but were wrapped immediately in opaque black plastic bags. Each bag was sealed individually to retain soil moisture.

All sample handling and preparation was conducted under safelight conditions in the SUERC luminescence dating laboratories. Approximately 300 g of material was collected from the central, light protected core of the tubes, and wet sieved to obtain two fractions: 90-150 microns 'polymineral' for initial tests, and 150-250 microns 'quartz' for dating measurements. Both fractions were treated with 1M HCl for 30 minutes to dissolve carbonates. The coarser fraction was then treated with 15% HF (followed by washing in HCl) and density separated at 2.52, 2.58, 2.62, and 2.74 gcm^{-1}. Quartz was isolated from the 2.62-2.74 gcm^{-1} fraction by etching in 40% HF for 40 minutes (and washed in HCl). The 90-150 micron polymineral and 150-250 micron quartz grains were presented for measurement as mono-layers on 10 mm diameter, 0.25 mm thick stainless steel disks, fixed with silicone oil.

OSL measurements were carried out using a RISO TL/OSL automated machine. Luminescence from the quartz fraction was stimulated using blue diodes (470 Δ 20nm) with detection in the ultraviolet defined by two Hoya U340 filters (Botter-Jensen *et al.* 2000; Spencer and Sanderson 2002). The SAR protocol (Murray and Wintle 2000; Sanderson *et al.* 2001) was used to determine the De on each disc measured. In the SAR method, each natural or regenerated OSL signal is corrected for changes in sensitivity using the luminescence response to a subsequent test dose. Regenerative dose response curves were constructed using doses of 4, 8, 12, 16 and 20 Gy, with a test dose of 1 Gy. A second dose of 4 Gy was applied at the end of the run as a further sensitivity check. To ensure the prepared quartz contained no significant feldspar grains or micro-inclusions, a feldspar contamination test (the IRSL was read out after the sample was subjected to 20 Gy) was carried out at the end

Table 2 Activity and Equivalent concentrations of K, U and Th for samples SUTL 1581-1582 as determined by HRGS. Dose rates determined by TSBC and HRGS.

Sample (SUTL)	Activity Concentrations / Bq kg^{-1}			Equivalent Concentrations[1,2]		
	K	U	Dα (dry)	Dβ (dry)	Dγ (dry)	Dβ (dry)
1581	316.4 ± 21.4	37.8 ± 4.20	1.33 ± 0.24	1.02 ± 0.07	3.06 ± 0.34	0.33 ± 0.06
1582	268.8 ± 20.8	37.38 ± 4.09	2.98 ± 0.27	0.87 ± 0.07	3.03 ± 0.33	0.73 ± 0.07

Sample (SUTL)	Dry Infinite Matrix dose rates[3] by HRGS / $mGya^{-1}$			TSBC / $mGya^{-1}$
	Th	K (%)	U (ppm)	
1581	8.75 ± 0.95	1.31 ± 0.08	0.62 ± 0.04	1.72 ± 0.07
1582	8.95 ± 0.92	1.18 ± 0.07	0.59 ± 0.04	1.71 ± 0.07

1 Conversion factors (based on OECD, 1994): 40K: 309.26 Bq kg^{-1} $\%K^{-1}$; 238U: 12.34787 Bq kg^{-1} $ppmU^{-1}$; 232Th: 4.057174 Bq kg^{-1} $ppmTh^{-1}$.

2 Working values for Shap granite.

3 Based on dose rate conservation factors from Aitken, 1983.

Table 3 Annual dose rates for SUTL 1581 and 1582.

Sample (SUTL)	Water Content			Effective β dose rate[1] / $mGya^{-1}$	Dγ (wet) by HRGS[3] / $mGya^{-1}$	Effective γ dose rate[3] / $mGya^{-1}$	Total dose rate[2] / $mGya^{-1}$
	FW / %	SW / %	Assumed / %				
1581	10.79	24.81	15 ± 5	1.15 ± 0.07	0.53 ± 0.04	0.53 ± 0.04	1.86 ± 0.09
1582	-	-	15 ± 5	1.09 ± 0.07	0.51 ± 0.04	0.51 ± 0.04	1.79 ± 0.08

[1] Effective beta dose rates combine water content corrections with inverse grain size attenuation factors obtained by weighting the 200 micron mean grain size attenuation factors of Mejdahl (1979) for K, U and Th sources by the relative contributions to beta dose rate from each source determined by HRGS.

[2] Obtained from the combination of effective beta and gamma dose rates and an additional 0.185 $mGya^{-1}$ allowance for the dose rate due to cosmic radiation (Prescott and Hutton 1994).

[3] These rates are based on a γ water correction on the Dγ (dry) by HRGS.

of each run. To assess the dependence of De on preheat temperature, four different preheat temperatures were investigated (220, 240, 260 and 280 °C).

Dose rate measurements from the dating samples were undertaken by Thick Source Beta Counting (TSBC; Sanderson 1988) and High Resolution Gamma Spectrometry (HRGS); the results of which are shown in Tables 2 and 3.

Results and Discussions

The effective dose rate, water content (calculated and assumed), mean De and OSL age for each sample are shown in Tables 2, 3 and 4. Polymineral separates were subjected to both infra-red stimulated luminescence (IRSL) and thermoluminescence (TL), no response was received under either stimulation, implying little/or no feldspar contamination.

Dating measurements were carried out on the quartz separates. Due to the limited amount of quartz in the sediment only 14 aliquots could be measured for each sample. Poorly bleached aliquots were rejected from further analysis based on the 4 Gy sensitivity check, the robust mean, feldspar contamination and radial plots. The data derived from the SAR dose determinations were analysed at two scales; individual dose response curves were analysed using the Risø 'Analyst' program; composite data sets were explored using Excel spreadsheets and Jandel Sigmaplot software. There was no evidence of significant differences in normalised OSL ratios (both in natural and regenerated dose points) between subsets of discs pre-heated at temperatures from 220°C to 280°C (Fig. 2).

Accordingly composite dose response curves from selected discs for each sample were constructed and used to estimate equivalent dose values for each individual discs and their combined sets (Fig. 3). The growth curve data were fitted with a single saturating exponential function and the equivalent dose was estimated by interpolation with the net-natural sensitivity-corrected lumi-

Table 4 Summary of SAR results for Mylouthkia pits 1 and 2.

Sample (SUTL)	Mylouthkia – Pit 1 (1581)	Mylouthkia – Pit 2 (1582)
Recycling ratio	1.00 ± 0.01	0.99 ± 0.01
De at 220°C / Gy	16.43 ± 2.24	12.94 ± 1.57
De at 240°C / Gy	16.94 ± 0.52	15.38 ± 1.64
De at 260°C / Gy	17.01 ± 1.56	16.32 ± 3.47
De at 280°C / Gy	17.51 ± 1.81	15.24 ± 0.20
Combined De / Gy	16.97 ± 0.44	14.95 ± 2.30
Robust Mean - De / Gy	17.13 ± 1.21	14.44 ± 1.64
Effective dose rate / $mGya^{-1}$	1.86 ± 0.09	1.79 ± 0.08
Age / ka	9.12 ± 0.49	8.37 ± 0.61
Age / years BP	9118 ± 493.42	8367.8 ± 612.7

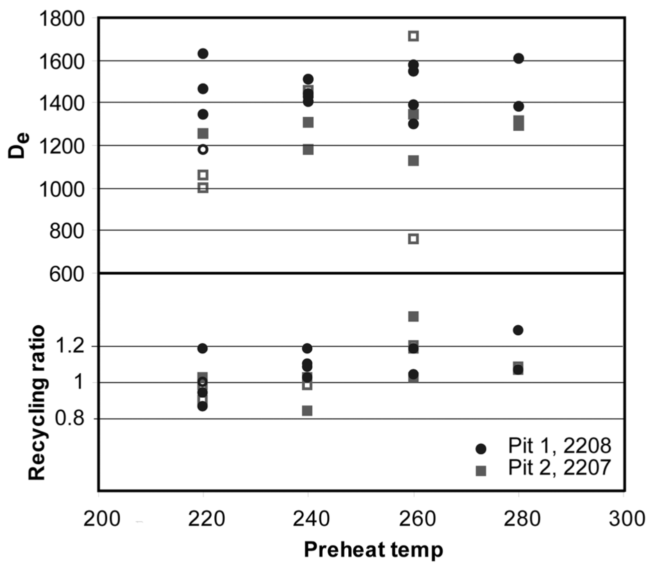

Fig. 2 Preheat Plateaus for quartz extracted from two pits at Mylouthkia. Closed squares/circles indicate concordant data. Open squares/circles indicate disconcordant data (outwith 2 standard deviations).

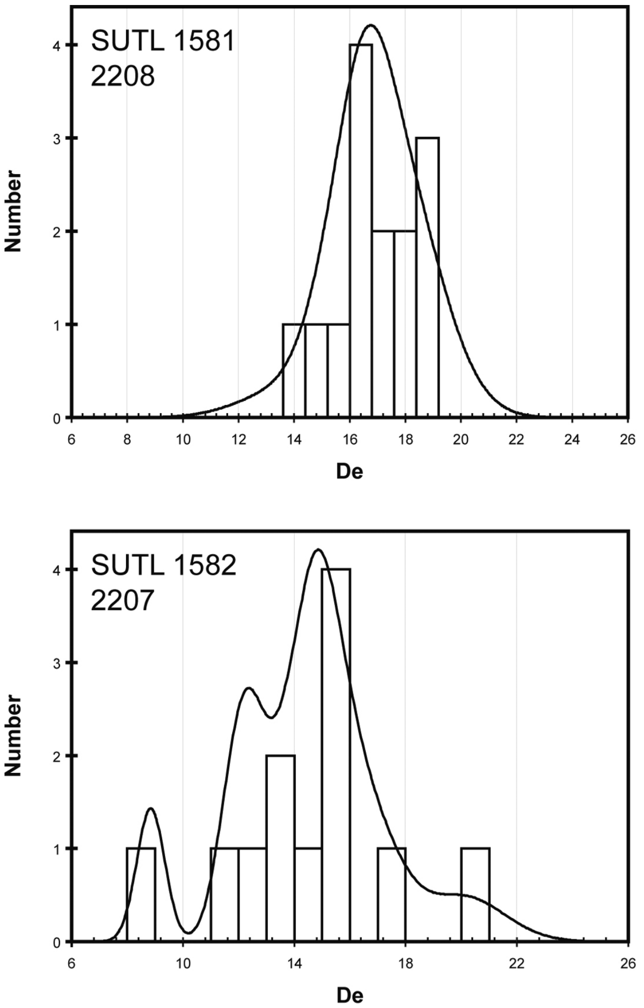

Fig. 3 Weighted histograms of SAR equivalent doses for samples 1581 and 1582.

nescence level. The distribution in equivalent dose values was examined using weighted mean histogram plots (after Spencer and Sanderson 2002). It is clear from these plots (Fig. 4) that both samples have a narrow distribution in equivalent dose values, and this is reflected in the relatively small uncertainity in weighted mean results.

To check for the presence of non-uniformity (sample heterogeneity) in sample radiation dose histories we have compared aliquot intensity and equivalent doses. The distribution in equivalent doses is shown visually in Figures 3 and 4; however we were concerned with how averaging the equivalent doses would affect our calculated age. In Figure 3 the mean, median, robust mean and the logged and non-logged central age modelled mean of Galbraith (1999) are shown. The robust mean was calculated by two methods; by the use of an in-house excel program, which removed any data outwith 2 standard deviations in a continuous loop, so that data excluded from the last calculation was not included in the next; and by an excel add-in 'robust statistics' available from the Chemistry Society of London, which calculates a robust mean using Huber's estimate 2. Figure 3 indicates that similar values of equivalent dose are calculated in all six methods, implying that we can be confident in determining a calculated luminescence age.

The two hollow- or pit-like features 2207 and 2208, at Mylouthkia yielded OSL ages of 8.37 ± 0.61 and 9.12 ± 0.49 ka. AMS results from charred seeds and cereal grains at the same site date to the late 10th and 9th millennium; *i.e.* period 1A well 116 (Fig. 1a) has a coherent set of three later 10th millennium BP AMS dates from barley and over short-lived cereal grains (Fig. 1b); period 1B well 133 (Fig. 1a) has two later 9th millenni-

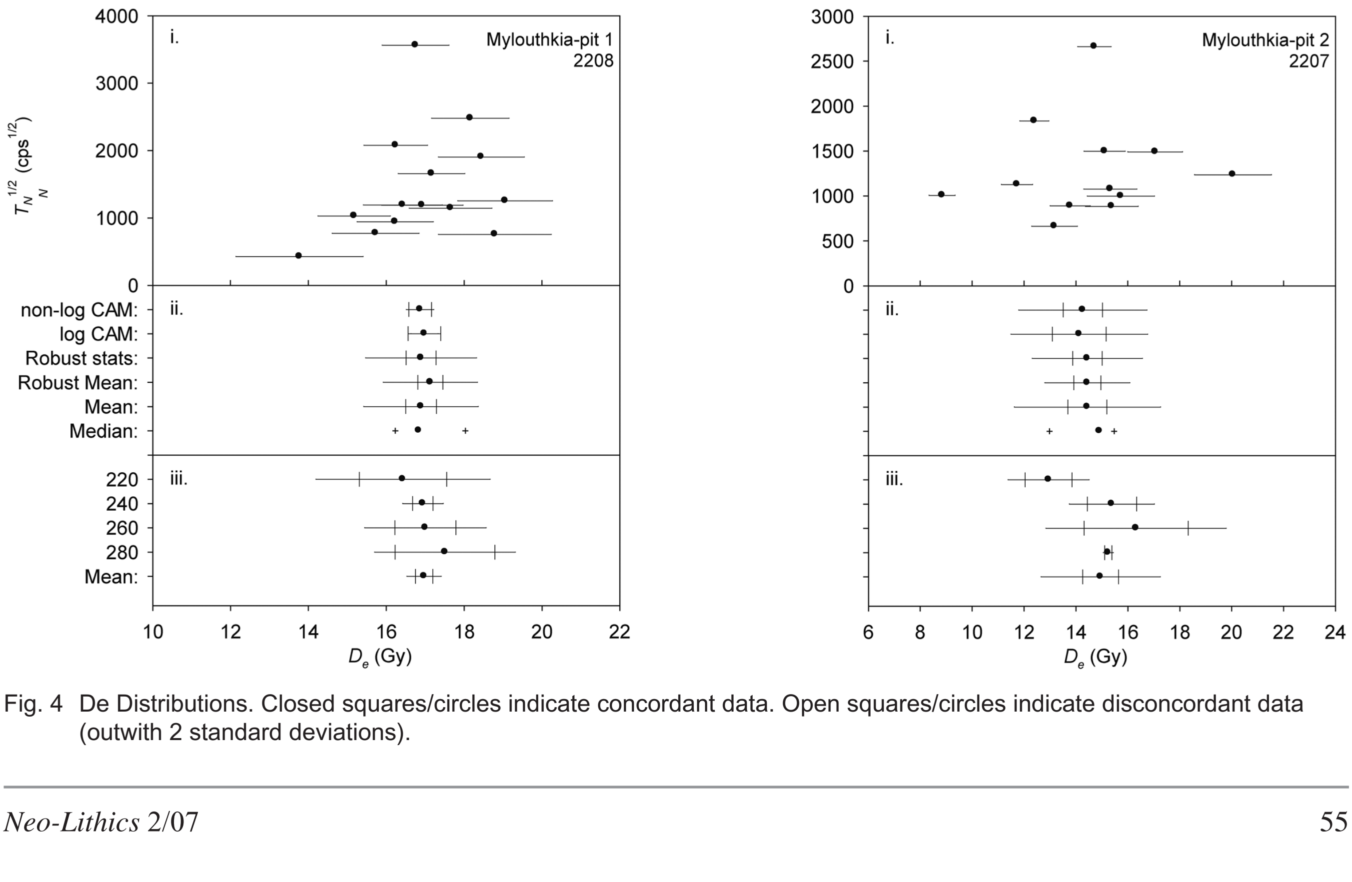

Fig. 4 De Distributions. Closed squares/circles indicate concordant data. Open squares/circles indicate disconcordant data (outwith 2 standard deviations).

um AMS dates from charred seeds (Fig. 1b). In this established chronological framework, hollow/pit 2208 may be designated a Period 1A Cypro-PPNB feature and, hollow/pit 2207 a Period 1B Cypro-PPNB feature.

A comment must be made on the luminescence properties of the quartz extracted from the Mythoukia pits. The bedrock in the area is a carbonate-siliclastic sequence, so the quartz within the pit-fill must therefore be derived from a more distal source. Likely provenances are the Troodos Massif, which forms much of the high ground in the centre of the Island and the Mamonia Complex, in western Cyprus. The quartz must have been transported to the Mylouthkia region by fluvial or aerial processes. A small contribution from loess-type deposits of the Sahara must also be considered. Petrographic examination of the sediment does not provide any clues, as there are several quartz variants and morphologies. A recognised problem in the accurate dating of sediments using a multi-grained approach is an overestimation in equivalent dose due to stimulation of a mixed dose population consisting of bleached, partially bleached or unbleached grains. It was envisaged therefore, that the Mylouthkia sediments would yield a broad distribution in equivalent doses. However, the laboratory work has shown that the quartz was sufficiently zeroed at deposition to allow valid luminescence dates to be calculated. The sediment infilling the pit must have accumulated slowly allowing sufficient bleaching to occur. Therefore the technique of OSL may be used as a valid means of dating sediment of mixed provenance in carbonate-siliclastic sequences, if detailed geomorphological and sedimentological studies are used to identify potential samples/sites.

Conclusions

Traces of some of the earliest successful human colonists of Cyprus can be dated to the late 10th millennium BP at Mylouthkia, in the southwest corner of the island. Our OSL results contribute to an expanding catalogue of data on the Early Aceramic Neolithic occupation of Cyprus, which has allowed scholars to glean a better understanding of the processes of island colonisation, and has led to a fresh appraisal of the role of Cyprus in the narratives of the Eastern Neolithic (begging questions on the early spread of agriculture and trade). They confirm the validity of OSL dating of archaeological features without recourse to costly excavations.

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References

Aitken M.J.
1983 Dose Rate Data in S.I. Units. *PACT* 9: 69-76.

Botter-Jensen L., Bulur E., Duller G.A.T. and Murray A.S.
2000 Advances in Luminescence Instrument Systems. *Radiation Measurements* 32: 523-528.

Guilaine J., Briois F., Vigne J-D. and Carrére I.
2000 New Discovery of an Early Cyprus Preceramic Neolithic (late 9th, early 8th millenia cal. BC), related to the Early/Middle PPNB of the Northern Levant / Découverte d'un Néolithique précéramique ancien chypriote (fin 9e, début 8e millénaires cal. BC), apparenté au PPNB ancien/moyen du Levant nord. *Comptes Rendus de l'Académie des Sciences – Series IIA – Earth and Planetary Science* 330: 75-82.

Guilaine J. and Briois F.
2001 Parekklisha Shillourokambos: An Early Neolithic Site in Cyprus. In S. Swiny (ed.), *The Earliest Prehistory of Cyprus: From Colonization to Exploitation:* 37-53. American Schools of Oriental Research, Arch. Report 5. Boston.

Manning S.W.
1991 Notes: Approximate Calendar Date for the First Human Settlement of Cyprus? *Antiquity* 65: 870-878.

Mejdahl V.
1979 Thermoluminescence Dating: Beta Dose Attenuation in Quartz Grains. *Archaeometry* 21: 61-72.

Murray A. and Wintle A.G.
2000 Luminescence Dating of Quartz Using an Improved Single-aliquot Regenerative-dose Protocol. *Radiation Measurements* 32: 57-73.

OECD
1994 *JEF-PC – A Personal Computer Programme for Displaying Nuclear Data from the Joint Evaluated File Library*. OECD. Nuclear Energy, Paris.

Peltenburg E., Colledge S., Croft P., Jackson A., McCartney C. and Murray M.A.
2000 Agro-pastoralist Colonization of Cyprus in the 10th millennium BP: Initial Assessments. *Antiquity* 74: 844-853.

Peltenburg E. (ed.)
2003 *The Colonisation and Settlement of Cyprus: Investigations at Kissonerga-Mylouthkia, 1976-1996* (Lemba Archaeological Project, vol. III.1). Studies in Mediterranean Archaeology 70:4. Savedalen: Aströms Förlag.

Prescott J.R. and Hutton J.T.
1994 Cosmic Ray Contribuations to Does Rates for Luminescence and ESR Dating: Large Depths and Long-term Variations. *Radiation Measurements* 23: 497-500.

Sanderson D.C.W.
1988 Thick Source Beta Counting (TSBC): A Rapid Method for Measuring Beta Dose Rates. *Nuclear Tracks (International Journal of Radiation Applications and Instrumentation. Part D. Nuclear Tracks and Radiation Measurements)*, 14: 203-207.

Sanderson D.C.W., Bishop P., Houston I., Boosener M.
2001 Luminescence Characterisation of Quartz-rich Cover Sands from NE Thailand. *Quaternary Science Reviews* 20: 893-900.

Spencer J.Q. and Sanderson D.C.W.
2002 Optically Stimulated Luminescence Dating of Fluvial Sediments from Western Cyprus. In K. Deckers: *Cypriot Archaeological Sites in the Landscape: An Alluvial Geo-archaeological Approach.* Unpublished PhD Thesis, University of Edinburgh.

Simmons A.H.
1991 Humans, Island Colonisation and Pleistocene Extinctions in the Mediterranean: The View from Akrotiri Aetokremnos, Cyprus. *Antiquity* 65: 857-869.

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just as deadlines approached when we as co-editors were feverishly striving to get people to submit copy. Remember the desperate efforts at the beginning to rely on lithic topics only (*e.g.* reprinting "How the Rabbit Killed Flint" from AAA 3, 1910, in NL 1/96). But by 1996, we were pleased that more and more manuscripts were submitted. We found that we cannot maintain the newsletter with just lithic topics, and that a forum of quickly published excavation news was much appreciated. The content of *Neo-Lithics* grew accordingly. So did the number of subscriptions, and consequently more money was available for the production of *Neo-Lithics*. In 2003 we were pleased to present the newsletter in a new and much more professional format, one that included illustration with a much higher degree of reproductive quality. This professionalism is owed to Jurgen Baumgarten, joining in as managing editor of *Neo-Lithics*. In addition, the newsletter by then became a membership bonus to ex oriente members, helping to secure its financial basis. Still, its production is a true non-profit enterprise. With the current issue, we now have 64 pages (116 pages for both issues from 2007), the largest issue ever.

The year 2004 included a new concept for *Neo-Lithics:* theme-based issues that would appear occasionally, such as *Neo-Lithics* 1/04, when the Cyprus Neolithization was a major theme, as well as another section devoted to supra-regional approaches to Neolithization in the Near East. Another "dialogue" appeared in 2005 (early Neolithic ritual centers), and two more are planned in the near future.

In the last issue of 2004 (*Neo-Lithics* 2/04), after 11 years of publication, an index was published by J. Baumgarten with A. Collo that included the tabulation of articles according to several topics (site, author, and subject). Within the subject index, articles were counted according to geographic location, and there was a clear bias in terms of representation, with the southern Levant more frequently the focus of reports than any other part of the eastern Mediterranean. Including all of the issues except this one (2/07), the table shows that of the 113 field reports that have appeared in *Neo-Lithics,* 63 (56%) are from the southern Levant (and of these, 50 [44%] from Jordan alone).

In part, these data reflect the relative intensity of Late Epipaleolithic/Neolithic research in the various regions, but on the other hand there are probably other elements in play. For example, although *Neo-Lithics* publishes English and French articles, not everyone in areas outside of the southern Levant is fluent in these two languages. There is also a high likelihood that *Neo-Lithics* is not reaching audiences outside the southern Levant, and we hope this can be changed. We appeal to everyone working in the greater eastern Mediterranean region, including the Caucasus, the Arabian peninsula, Egypt and North Africa in general, and southeastern Europe to consider providing the Neolithic archaeological community with more information about what has been learned/is to be learned about the Late Epipaleolithic and Neolithic in these areas outside the Levant by submitting manuscripts to *Neo-Lithics.* With a turn-around time of only several weeks, *Neo-Lithics* is one of the quickest ways to let colleagues in the greater Neolithic community know what is developing.

Since 1994, *Neo-Lithics* promotes the idea of the "Neolithic family" active in the Near and Middle East, meaning that Neolithic research should bring colleagues together and should integrate research agendas by crossing borders in minds and research territories. It is a long way, however, but weren't these policies since Berlin 1994 helping the spirit? In this sense, good luck to the 6th Conference on PPN Chipped and Ground Stone Industries of the Fertile Crescent, to take place in Manchester, March 3-5, 2008.

Gary O. Rollefson and Hans Georg K. Gebel

Table. Contributions to *Neo-Lithics* according to regions.

	A	C	E	G	Ir	Is/P	J	L	S	T	U	Y	Total
n	1	3	1	1	3	13	50	2	13	24	1	1	113
%	1	3	1	1	3	11	44	2	11	21	1	1	100%

Abbreviations: A=Aegean; C=Cyprus; E=Egypt; G=Georgia; Ir=Iran; Is/P=Israel/Palestine; J=Jordan; L=Lebanon; S=Syria; T=Turkey; U=Uzbekistan; Y=Yemen