

Ancient TL SUPPLEMENT

Date List

November 1990 Issue 4

1. This list includes dates for fired materials of archaeological interest, submitted to *Ancient TL* during 1989 for which sufficient information has been supplied. Readers are referred to earlier issues of the Date List for a fuller description of the structure of entries.
2. Application forms are available from the Editor, who will be pleased to advise on data compilation; laboratories wishing to submit dates for which the current date entry specification is not suitable should write to him. The application forms may be supplied on either paper or magnetic media.

Laboratory: [name]	Date Entry Specification	Entry: [entry number]
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PART I

Site: [Name] Location: [Region, country] Grid Ref.: [National map reference]

Site Description: [Brief description of period and nature of site]

Dates/Ages:

Lab. Ref. Material Archaeological Ref.

[Type]	[Type]	[Lab. abbrev.]				
TL	Context	800 AD ± 50 (Dur87TLfg)	100-1/6	pottery	ABC-1a	
Single	Age					
		[Overall error]	[Test year]	[Technique]	[Sample ref.]	[Context reference]
					[Dated material]	

— TL Context Components: [Details of component TL dates/ages used to derive Context Date/Age] —

Archaeological Evidence: [Excavator's brief description of context(s)]

Site Director: [Full name and institutional postal address]

Reports: [Details of excavation and laboratory reports]

PART II

Section A. TL Measurements
<p>1. min.([mineral]) tech.([technique]; [grain size range, gr] μm)</p> <p style="margin-left: 20px;"><i>Data tabulated for each sample:</i></p> <p>2. P = [value] \pm s.e. Gy 2a. I/P = [value] 3. Slopes [2nd/1st: [value] \pm s.e.]</p> <p>4. [Type of plateau] Plateau [\pm [value] %; [T₁ - T₂]]</p> <p>4a. Peak [@ [value] °C ; [heating rate]°/s; [pre-heat details if applicable]]</p> <p>5. Stability[[interval, T₁ - T₂]; [period] ; [storage T °C] ; [result ; [value] \pm [value] %]]</p> <p>6. a value = [value] , or b value = [value]</p>

Section B. Dose-rate Measurements
<p><i>Data tabulated for each sample:</i></p> <p>1. Total Effective Dose-rate = [value] \pm s.e. mGy/a [α = [value] % [method] ; β = [value] % [method] ; γ = [value] % [method] ; cos(mic) = [value] % [method]]</p> <p>2. Radon [\pm [value] % [method]]</p> <p>3. Water [Sample ([value] \pm s.e. %); (Burial) Environment ([value] \pm s.e. %)]</p>

Section C. Error [[Procedure : eA76 or specify other]]

Section D. TL Age
<p><i>Data tabulated for each sample:</i></p> <p>TL Age[\pm [random error] ; \pm [overall accuracy]]</p>

Special Remarks: [Details of entries with * or any other additional information]

KEY TO ABBREVIATIONS

STANDARD METHODS/TECHNIQUES/PROCEDURES

i	Inclusion	pd	Pre-dose	a Plat	Age plateau
fg	Fine-grain	MA	Multiple activation	d Plat	Dose plateau
mmi	Multi-mineral	ADD	Additive dose proc.	s Plat	TL Signal plateau
		Sb	Sensitivity baseline		
α -c	Alpha counting	FPh	Flame Photometry	TLD	TL dosimetry
AAS	Atomic absorption	NAA	Neutron Activation Analysis	XRF	X-ray fluorescence
β -c	Beta counting	PXE	PIXIE		
CAP	Capsule	SPEC	Spectrometer (SPEC = portable)		
Non-standard		AutoR	Auto regeneration	PTTL	Photo-transferred TL

MINERALS & ETC.

cal	Calcite	Nf	Sodium feldspar	*	Other
ft	Flint	p	Polyminerals	-	Not applicable
f	Feldspar	q	Quartz	e	Equivalent to
Af	Unsep. alkali feldspar	z	Zircon		(used as prefix)
Kf	Potassium feldspar	por	Porcelain	a	Year

Terms: I, P, a, b, A, S_N, S_O, TAC: as defined in the literature.

Laboratory: Oxford

Entry: 40

Site: Manji Cave
Location: Zairo.
Grid Ref.: -

Site Description: The cave is located in the Mt. Hoyo limestone massif, in Ituri.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Single Ages:	24.7 ± 3.7 ka	(Os87TL)	2003 beamstone
	23.0 ± 3.5 ka	-	U120
	2007 ± 3.0 ka	-	IA130-135
	33.4 ± 4.4 ka	-	EL140
	29.4 ± 3.0 ka	-	20017
	70.0 ± 8.5 ka	-	20098
	68.8 ± 8.8 ka	-	20099
	80.0 ± 9.5 ka	-	20010
	-	-	IB270
	-	-	IB380-400

Archaeological Evidence: The samples are from Late Stone Age levels, in decalcified loams, with Microlithic industry. The levels were overlain by Iron Age artefacts.

Site Director: Prof. F. Van Noten, Director of Museum of Art and History, Jubelpark 10, B 1040 Brussels, Belgium.

Reports: Van Noten, F. (1977) Excavations at Manji Cave, *Antiquity*, LI, 35-40.
Van Noten, W. (1984) Faunal remains from Manji Cave, an Iron Age and Late Stone Age site in N.W. Zaire, *Académie Africaine. Musée des Sciences et de la Culture*, 46(2), 59-76.

PART II
TECHNICAL SPECIFICATION

Section A. TL Measurements									
1. Min(Q) tech.(g; 90 - 150 µm)									
Sample Ref.	P ± s.e. (Gy)	I/P	Slips	z Plateau	Peak	Stability			
20016	43.1 ± 2.6	0	0.98 ± 0.05	± 6%; 325-400*	350°; 5%/;	-			
20017	68.5 ± 3.0	0	1.08 ± 0.05	± 3%; 350-450*	400°; 5%/;	-			
20018	50.6 ± 2.6	0	1.05 ± 0.05	± 5%; 350-425*	400°; 5%/;	-			
20019	123.3 ± 6.5	0	1.20 ± 0.05	± 3%; 300-350*	350°; 5%/;	-			
20010	148.7 ± 7.7	0	0.98 ± 0.05	± 5%; 300-350*	325°; 5%/;	-			
20012	38.5 ± 2.5	0	1.18 ± 0.05	± 6%; 325-400*	350°; 5%/;	-			

Section B. Dose-rate Measurements									
Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon		Water		
		α	β	γ	cos.	Sample	Env.		
20013	1.56 ± 0.23	-	13	82	5	-	-	-	
20016	1.88 ± 0.28	-	28	68	4	-	-	20 ± 5	
20017	2.45 ± 0.36	-	45	52	3	-	-	-	
20019	2.14 ± 0.32	-	21	71	8	-	-	-	
20009	1.57 ± 0.28	-	25	72	3	-	-	-	
20010	1.78 ± 0.27	-	33	65	2	-	-	-	
20012	1.86 ± 0.28	-	34	64	2	-	-	-	

Section C. Error (αA76)

Section D. TL Age			
Sample Ref.	TL Age ka	Random ka	Overall ka.
2003	24.7	-	3.7
2006	23.0	-	3.5
2007	28.0	-	3.0
20017	33.4	-	4.4
20098	29.4	-	3.0
20099	70.0	-	8.3
20010	80.0	-	9.5

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Laboratory: Oxford

Entry: 41

Site: Meer IV
Location: Near the Belgium-Dutch border, north of Antwerp.

Grid Ref.: -
Site Description: The site is located in the cover sands of the N. Campine. The industry belongs to the Late Upper Palaeolithic of N.W. Europe. It is characterized by a variety of projectile points, the most typical a blade with a curved back edge called the 'Tjonger point'. The Tjonger site occupies the south east slope of the ridge and consists of an extended flint concentration some associated with fireplaces.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age:	11.8 ± 1.2 ka	(Os87TLig)	255A
Context Age Comp:	11.5 ± 1.2	burnt flint	Tjonger site
	12.4 ± 1.6	-	Square I, Eq. 44
	-	-	Square II, D4, 111

Archaeological Evidence: The site belongs to the Epipalaeolithic complex of North-West Europe.

Site Director: Dr. F. Van Noten, Royal Museums for Art and History, Jubelpark 10, B 1040 Brussels, Belgium.

Reports: Nijs, K., A. Tjonger and a Mesolithic site at Meer, Belgium, in The "Big Purple" (Acta M., Cziesla, Z. and Winer, D., Eds.), Proc. of the 1st. Int. Symp. on the subject of refitting stone artefacts *BAR Int. Series*, Monopros, 1988. (in press).

PART II
TECHNICAL SPECIFICATION

Section A. TL Measurements									
1. Min(f) tech.(g; 1 - 8 µm)									
Sample Ref.	P ± s.e. (Gy)	I/P	Slips	z Plateau	Peak	Stability			
255AI	7.82 ± 0.4	0	-	+ 2%; 275-350*	350°; 5%/;	275 - 350°; 0.5%; 18°; 10043%	0.14		
255AII	7.95 ± 0.4	0	-	+ 2%; 323-375*	350°; 5%/;	325 - 375°; 0.5%; 18°; 10043%	0.10		

Section B. Dose-rate Measurements									
Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon		Water		
		α	β	γ	cos.	Sample	Env.		
255AI	0.68 ± 0.08	2.5	20	35	20	0	0 ± 2	10 ± 2	
255AII	0.64 ± 0.06	1.5	15	48	22	0	0 ± 2	10 ± 2	

Section C. Error (αA76)

Section D. TL Age			
Sample Ref.	TL Age ka	Random ka	Overall ka.
255AI	11.5	-	1.2
255AII	12.4	-	1.6

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Site: Daylight Rock
 Location: Caldey Island, Wales, UK.
 Grid Ref.: SS 1497 9662
 Site Description: An 'open site' located on the present cliff top on the eastward extremity of Caldey Island, Dyfed.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Single Ages: 7.7 ± 1.2 ka (Ox89TLg)	26311	burnt flint	D3 level 39
6.7 ± 1.0 ka	26312	"	F7 level 82
7.9 ± 1.2 ka	26313	"	H1 level 37

Archaeological Evidence: The TL dates are significantly later than the A.M.S. dates (see below) from charred hazel nut shell from sealed contexts on the site. None of the samples was typologically diagnostic, and cannot be considered to have been in situ since their deposition.
 Commission: (Accelerator Mass Spectrometer, Oxford University);
 Ox-A2245: 9040 ± 90, Ox-A2246: 9030 ± 80 and Ox-A2247: 8850 ± 80 B.P.

Site Director: Andrew David, 7 Clifton Road, Isleworth, Middlesex, UK.

Reports: Lacaille, A. D. and Grimes, W. F. (1955) The Prehistory of Caldey, *Arch. Camb.*, 104, 85-165.
 David, A. (1989) Some Aspects of the Human presence in W. Wales during the Mesolithic. In *The Mesolithic in Europe* (C. Bonsall Ed., Proc. 3rd Int. Symp. of Mesolithic in Europe, 1985), Edinburgh.

PART II
 TECHNICAL SPECIFICATION

Section A. TL Measurements											
1. Min(t) tech.(g: 1 - 8 µm)											
Sample Ref.	P ± s.e. (Gy)	I/P	Slips	± Plateau	Peak	Stability	σ val				
26311	6.38 ± 0.38	0		± 3%	350-425*	375%, 5%/;	350 - 425*, 0.5 ka, 18", 100 ± 3%	0.10			
26312	5.85 ± 0.35	0		± 3%	300-400*	375%, 5%/;	300 - 400*, -	0.08			
26313	7.80 ± 0.40	0		± 3%	300-375*	350%, 5%/;	300 - 375*, -	0.10			

Section B. Dose-rate Measurements												
Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon	Water	Stability	σ val				
		α	β	γ					cos.	Sample	Env.	
	mGy/a	%	%	%	%	%	%					
26311	0.83 ± 0.08	8	11	64	17	0 ± 5	0 ± 2	15 ± 5				
26312	0.83 ± 0.08	8	11	53	17	0 ± 5	0 ± 2	15 ± 5				
26313	0.98 ± 0.10	17	15	54	14	0 ± 5	0 ± 2	15 ± 5				

Section C. Error (σA76)	
Sample Ref.	TL Age ka
26311	7.7
26312	6.7
26313	7.9

Section D. TL Age			
Sample Ref.	TL Age ka	Errors	
		Random ka	Overall ka
26311	7.7	1.2	1.2
26312	6.7	1.0	1.0
26313	7.9	1.2	1.2

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Site: Yabroud Shelter I.
 Location: Approximately 80 km. north of Damascus, Syria.
 Grid Ref.: 33° 58' N, 36° 9' E.
 Site Description: A major Middle/Early Palaeolithic shelter, discovered by A. Rust in 1930. Flints found in the shelter are associated with a broad burnt area marked as a hearth zone in Shelter I, Unit 12 area at ca. 4.60m depth.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age: 195 ± 15 ka (Ox90TLg)	264c1	burnt flint	Yabroud - 4.6m
Context Age Comps:	264c1		1134
192 ± 20	264c2		-
192 ± 20	264c3		-
205 ± 18	264c7		1133
190 ± 18	264c11		-
190 ± 16	264d2		1139

Archaeological Evidence: Associated cultural material (handaxes) relate to Rust's Kulturschicht, his Jungschulken, now Achelulo-Yabrudian. The average date of 195 ka for this culture horizon is consistent with the TL dates from El Kowm, Hummal 1b (160 ka, J. Huxtable, Oxford.)

Site Director: Wim Farnand, Dept. Geol. Sciences, Univ. Michigan, Ann Arbor, Mich.
 Ralph Solecki, Dept. Anthropology, Columbia Univ., New York, 1988 season.

Reports: Bordes, F. (1935) Le paléolithique inférieur et moyen de Jabrud (Syrie). *L'Anthropologie*, 59, 486-507.
 Farnand, W. (1970) Geology, climate and chronology of Yabroud Rockshelter I. In *Fundamenta Archaeologicae*, H. 1, 212-223.
 Farnand, W. (1969) *Chrono-époche du Paléolithique inférieur de la région de Yabroud*. *Journal de la Société de Préhistoire Levantine*, 1, 1-16.
 Henzlin, J. de (1966) Revision du site de Yabroud. *Annales Arch. Arabes Syriennes*, XVI, 157-163.
 Hennig, G. and Hours, F. (1982) Dates pour le passage entre l'Acheuléen et le Paléolithique moyen à El Kowm (Syrie). *Paléorient*, 8(1), 81-83.
 Huxtable, J. (1988) TL dates on burnt flints from El Kowm. *Ancient TL Data List Entry #22*.
 Rust, A. (1930) Die Höhlenwelt von Jabrud. *Syrien. Neumünster*.
 Solecki, R. S. (1970) Excavations at the Columbia Univ., arch. invest. at Yabroud. In (Schwabedissen, H., Ed.), *Fundamenta Archaeologicae*, 199, 20-29.
 Solecki, R. S. and Solecki, R. L. (1966) New data from Yabroud. Preliminary report. *Annales Arch. Arabes Syriennes*, XVI, 121-154.
 Solecki, R. S. and Solecki, R. L. (1986) A reappraisal of Rust's cultural stratigraphy of Yabroud Shelter I. *Paléorient*, 12(1), 53-59.

PART II
 TECHNICAL SPECIFICATION

Section A. TL Measurements											
1. Min(t) tech.(g: 1 - 8 µm)											
Sample Ref.	P ± s.e. (Gy)	I/P	Slips	± Plateau	Peak	Stability	σ val				
264c1	215 ± 15	0		± 5%	350-425*	375%, 5%/;	350 - 425*, 0.5 ka, 18", 100 ± 3%	0.10			
264c2	210 ± 15	0		± 5%	323-375*	350%, 5%/;	323 - 375*, -	0.15			
264c3	300 ± 15	0		± 5%	323-375*	350%, 5%/;	323 - 375*, -	0.13			
264c7	210 ± 15	0		± 5%	350-425*	375%, 5%/;	350 - 425*, -	0.13			
264c11	210 ± 15	0		± 5%	350-425*	375%, 5%/;	350 - 425*, -	0.13			
264d2	364 ± 24	0		± 5%	350-425*	375%, 5%/;	350 - 425*, -	0.20			

Section B. Dose-rate Measurements												
Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon	Water	Stability	σ val				
		α	β	γ					cos.	Sample	Env.	
	mGy/a	%	%	%	%	%	%					
264c1	1.02 ± 0.20	25	25	38	12	0 ± 5	0 ± 2	9 ± 9				
264c2	1.16 ± 0.23	35	22	33	10	0 ± 5	0 ± 2	9 ± 9				
264c3	1.11 ± 0.31	44	4	4	7	0 ± 5	0 ± 2	9 ± 9				
264c7	1.49 ± 0.30	44	22	26	8	0 ± 5	0 ± 2	9 ± 9				
264c11	1.65 ± 0.33	45	23	23	7	0 ± 5	0 ± 2	9 ± 9				
264d2	1.92 ± 0.39	60	20	14	6	0 ± 5	0 ± 2	9 ± 9				

Section C. Error (σA76)	
Sample Ref.	TL Age ka
264c1	210
264c2	210
264c3	300
264c7	205
264c11	190
264d2	190

Section D. TL Age			
Sample Ref.	TL Age ka	Errors	
		Random ka	Overall ka
264c1	210	20	20
264c2	210	20	20
264c3	300	18	18
264c7	205	18	18
264c11	190	18	18
264d2	190	16	16

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Laboratory: Oxford Entry: 44

Site: Port-Racine
 Location: Cocleulin Peninsula, France
 Grid Ref.: x: 294.850 y: 232.337 Lambertian co-ordinates.

Site Description: A sea shore site at Saint-Germain des Vaux called Port-Racine. The occupation is at the foot of the cliffs and is attributable to the last interglacial. The occupation layer is Sector 4 of the section by B. Van Vliet-Lancee (1987). The stratigraphy is a little expanded and shows a layer of beach pebbles infiltrated by a glycolised loam (D2c), with lithic industry and associated hearths.

Dates	Lab. Ref. Mat'l	Archaeological Reference
TL Context Age: 106 ± 10 ka (Ox90TLg)	265f burnt flint	Sector 4 of B. Van Vliet-Lancee.
Context Age Comp. 109 ± 12	265f1	
103 ± 12	265f2	

Archaeological Evidence: The glycolised loam (D2c) can be attributed to stage 5c of the Oxygen-isotope record by micromorphological studies.

Site Director: Mr. D. Cliquet, Conservateur au Musée d'Evreux, 6, Rue C. Corbeau, 2700 Evreux, France.

Reports: Fosse, G., Cliquet, D. and Vigoin, G. (1986) La Moustérien du Nord Cotentin. Actes du colloque int., Lille 4 - 6 Sept. 1984. Zand C.P.F. suppl. au Bull. Assoc. pour l'Etude du Quar., 26, 141-155.

PART II
 TECHNICAL SPECIFICATION

Section A. TL Measurements									
I. Min(0) tech. (fig. 1 - 8 µm)									
Sample Ref.	P ± s.e. (Gy)	I/P	Sips	s Plateau	Peak	Stability	a val		
265f1	109 ± 10	0	-	± 5%; 325-409*	375%; 57%;	350 - 409*; 0.25 ± 18°; 100 ± 3%	0.1		
265f2	133 ± 10	0	-	± 3%; 325-409*	375%; 57%;	325 - 409*; 0.25 ± 18°; 100 ± 3%	0.1		

Section B. Dose-rate Measurements									
Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon	Water			
		α	β	γ cos.		Sample	Env.	α-c	SPec
265f1	1.25 ± 0.36	22	18	53	7	0 ± 5	0 ± 2	20 ± 5	
265f2	1.29 ± 0.19	9	11	71	9	0 ± 5	0 ± 2	20 ± 5	
Method		α-c	α-c	SPec	SPec	α-c	SPec		

Section C. Error [eA76]	
TL Age	12
Random	12
Overall	12

Section D. TL Age		
Sample Ref.	TL Age ka	Errors ka
265f1	109	12
265f2	103	12

Laboratory: Oxford Entry: 45

Site: Trollesgave
 Location: Zealand, Denmark
 Grid Ref.: 55°17' N 11°48' E.

Site Description: Small habitation site belonging to the Late Palaeolithic Bromme culture.

Dates	Lab. Ref. Mat'l	Archaeological Reference
TL Single Ages: 11.7 ± 1.4 ka (Ox90TLg)	60/131 burnt flint	99/103:31
11.1 ± 1.2 ka (Ox90TLg)	60/132	99/103:32
12.0 ± 1.4 ka (Ox90TLg)	60/145	99/103:145

Archaeological Evidence: The TL dates were obtained from 3 flakes found in the central hearth of the habitation area. They belong to one and the same reduction sequence and are thus contemporary within a margin of a few minutes. Considering the error margin, the average TL date fits the already available C-14 dates of the refuse layer near the bottom of the adjacent lake deposits, which fix the age at approximately 11,100 b.p. plus a calibration factor of 500 to 1000 years.

Site Director: Anders Fischer, The Forest and Nature Agency, Sluismarken 13, DK-2970 Horsholm, Denmark.

Reports: Fischer, A. and Montonen, B.N. (1977) Trollesgave-boplæsten et ellivempel på avendelse af EDB inden for arkæologien. *Nationalmuseets Arbejdsmark*, 90-95, Copenhagen.

Fischer, A. and Montonen, B. N. (1978) Report on the use of computers for the description and analysis of Palaeolithic and Mesolithic occupations. *Archaeological Research in Scandinavia: Archaeology (Kristiansen and Palludan-Müller Eds)*, 7-22, Copenhagen.

Fischer, A. An 11000 yr old school of flint knapping. Results from softing the Late Palaeolithic site Trollesgave, Zealand, Denmark. *Acta Archaeologica*, Copenhagen, in press.

PART II
 TECHNICAL SPECIFICATION

Section A. TL Measurements									
I. Min(0) tech. (fig. 1 - 8 µm)									
Sample Ref.	P ± s.e. (Gy)	I/P	Sips	s Plateau	Peak	Stability	a val		
60/131	10.45 ± 0.50	0	-	± 2%; 325-409*	375%; 57%;	325 - 409*; 0.25 ± 18°; 100 ± 3%	0.10		
60/132	9.85 ± 0.50	0	-	± 2%; 325-409*	375%; 57%;	325 - 409*; 0.25 ± 18°; 100 ± 3%	0.08		
60/145	10.45 ± 0.50	0	-	± 5%; 325-425*	375%; 57%;	325 - 425*	0.08		

Section B. Dose-rate Measurements									
Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon	Water			
		α	β	γ cos.		Sample	Env.	α-c	SPec
60/131	0.89 ± 0.13	7	18	60	15	0 ± 5	0 ± 2	28 ± 7	
60/132	0.89 ± 0.13	6	18	60	15	0 ± 5	0 ± 2	28 ± 7	
60/145	0.87 ± 0.13	8	15	62	15	0 ± 5	0 ± 2	28 ± 7	
Method		α-c	α-c	SPec	SPec	α-c	SPec		

Section C. Error [eA76]	
TL Age	1.4
Random	1.4
Overall	1.4

Section D. TL Age		
Sample Ref.	TL Age ka	Errors ka
60/131	11.7	1.4
60/132	11.0	1.2
60/145	12.0	1.4