

NOTES

General

- It is strongly recommended that, in addition to laboratory reports, reference to an excavation report is included since this will be of particular importance for archaeologists. If a non-standard technique has been used, reference to a full report or paper must be given under Reports or Special Remarks, and a copy included with date list applications if not published in a recognized journal.
- Part II currently comprises four sections A-D. It can be seen that they include the following measurement details: A(TL), B(Dose-rate), C(Error), and D(Age). Each contains numbered summaries of particular data. In section B, the total effective dose-rate (Total.Eff.Dose-rate) is broken down into percentage contributions for each radiation type. Where necessary, the internal and external grain dose-rate components are given separately (ie for those techniques employing grains with self-radioactivity).
- Grain sizes are given in μm . Errors are standard errors given at the 68% level of confidence.

Specific Data Entries

- A.1** The mineral type(s), TL technique, and grain size range(s) are specified using the standard abbreviations given in the key. For a technique employing a number of grain size ranges (gsr's), as in the multi-mineral inclusion (*mmi*) technique used at the Risø Laboratory, each gsr is assigned a number which, prefixed with the appropriate abbreviated mineral type, is used in the tabulation of measurement details A2 - A4.
- A.2** The archaeological or palaeodose, P, is given in Gy with associated standard error, and information concerning the intercept (*I/P*) is given in 2a.
- A.2-A.5** (Pre-dose) To be consistent with other techniques, P is used to denote the archaeological dose. Sb, the sensitivity baseline, is the (assumed) sensitivity that would have been measured after firing, expressed as a percentage of S_0 . Although stability measurements are not part of the original procedure, it is likely that they will be performed in the future.
- A.4** TL signal, TL age, or dose plateaux may be specified using the appropriate prefix (*s*, *a* or *d* respectively). The *s.e.* of the mean value is given (as a percentage) for the indicated temperature interval (T_1 - T_2) of the glow curve. If a well-defined TL peak is present in the plateau region, its peak temperature and the heating rate used should be given. This may not be possible for some fine-grain samples.
- A.5** The results of measurement associated with determination of TL stability are given in the specified order; temperature region of the glow curve, storage period, storage temperature, and the outcome.
- A.6** The *a* or *b* value is given.
- B.1** The total effective dose-rate, corrected for water uptake, grain size attenuation etc., is given with associated standard error. The percentage contributions of the various

radiation types are given with abbreviated name of the method used. Any correction to the dose-rate (expressed as a percentage of the total) that has been made due to radon emanation is stated, together with the experimental method used (ie α -c, γ SPEC). In the case of the *mmi* technique, the internal (Int.grain) and external (Ext.grain) dose-rate contributions for TL grains, expressed as a percentage of the total, are given separately (the isotope emissions accounted for in assessing the internal dose-rate are requested in the application form).

B.3 The average water content and assigned uncertainties for the sample and burial environment are specified.

C. "eA76" denotes a procedure for error assessment equivalent to that described by Aitken (1976; *Archaeometry*, 18, 233-238). If another procedure has been used, reference to a report/paper where the methods are described must be given.

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 Anal.	XRF	X-ray fluorescence
β -c	Beta counting	PXE	PIXIE		
CAP	Capsule	SPEC	Spectrometer (SPEC = portable)		
Non-standard	AutoR	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 (used as prefix)
Af	Unsep. alkali feldspar	z	Zircon		Year
Kf	Potassium feldspar	por	Porcelain	a	

Terms: I, P, a, b, A, S_N, S₀, TAC: as defined in the literature.

PART II

Section A. TL Measurements

1. min.-(*mineral*) tech.-(*technique*); [*grain size range, gsr*] (μm)
- Data tabulated for each sample:*
2. **P** = [*value*] \pm s.e. Gy 2a. **VP** = [*value*]
 3. **Slopes** [*2nd/1st: value*] \pm s.e.]
 4. [*Type of plateau*] **Plateau** [\pm [*value*] %]; [*T₁ - T₂*]]
 - 4a. **Peak** [*@ value*] °C; [*heating rate*]°/s; [*pre-heat details if applicable*]]
 5. **Stability**[*interval, T₁ - T₂*]; [*period*]; [*storage T* °C]; [*result* ; [*value*] \pm [*value*] %]]
 6. *a value* = [*value*], or *b value* = [*value*]

Section B. Dose-rate Measurements

- Data tabulated for each sample:*
1. **Total Effective Dose-rate** = [*value*] \pm s.e. mGy/a
[α = [*value*] % [*method*]; β = [*value*] % [*method*]; γ = [*value*] % [*method*]; $\cos(\text{mic})$ = [*value*] % [*method*]]
 2. **Radon** [\pm [*value*] % [*method*]]
 3. **Water** [*Sample* ([*value*] \pm s.e. %); (*Burial*) Env. ([*value*] \pm s.e. %)]

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

Section D. TL Age

Data tabulated for each sample: **TL Age** [\pm [*random error*]]; \pm [*overall accuracy*]]

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

VARIATIONS

1. Dates for the Palaeolithic may be given in years (a) or kiloyears (ka) before the test year.
2. Pre-dose technique, Part II :

Section A. TL Measurements

1. As defined above
Data tabulated for each sample:
2. **P** = [*value*] \pm s.e.Gy ([*pre-dose procedures*])
3. **Initial Sensitivity**:[*value*] %S_N; [*value*] % (of S_N) UV reversible;
S_b = [*value*] %S_o]
4. **TAC** [[*temp. region of max. sensitization*]; [*heating rate*] °/s]
5. **Stability**:[*result of stability measurement*]]

3. Multi-mineral inclusion techniques, Part II:

Section A. TL Measurements

1. mins.-(*minerals*) tech.-(*technique*); gsr (μm) -1 ([*value*] - [*value*]),..... n ([*value*] - [*value*]))
- Data tabulated for each mineral grain size fraction :*
- 2-4. As defined above
 5. **Stab** [[*mineral*]] (gsr [*n*] \pm [*value*] %), [*T₁ - T₂*]; [*period*]; [*storage T* °C]; [*value*] \pm [*value*] %]]

Section B. Dose-rate Measurements

- Data tabulated for each smineral grain size fraction :*
1. **Total Effective Dose-rate**, as defined above
 - 1a. **Internal grain** [[*Dose-rate from internal sources, as % of total, with method used*]]
 - 1b. **External grain** [[*Dose-rate from external sources, as % of total, with method used*]]
 - 2&3. As defined above.

Laboratory: Oxford

Entry: 12

Site: Lower Farm
 Location: Finglesham, Northbourne, Nr Deal, Kent., UK
 Grid Ref.: TR 3383 5379
 Site Description: Flint scatter just above marsh level.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age: 6650 ± 600 a	(Ox87TLfg)	257f	flint -
TL Context Comps: 5990 ± 540 a	257f1	"	PB 30
6325 ± 695 a	257f2	"	PB 26
6420 ± 580 a	257f3	"	PB 9
6890 ± 620 a	257f4	"	PB 52
6655 ± 665 a	257f5	"	PB 39
5670 ± 560 a	257f8	"	PB 21
7590 ± 900 a	257f9	"	PB 3
7580 ± 705 a	257f10	"	PB 54

Archaeological Evidence: Mesolithic site uncovered during excavations for a new cowedshed. Trenches cut into nat. head brickearth containing calcined flints and struck flints of Mesolithic type. More than 1700 flints recovered include six major fragments from axes and adzes; most remarkable for the number and quality of axe-adze sharpening flakes of which 39 so far recovered.

Site Director: K. Parfitt, and G. Halliwell. Dover Archaeological Group, c/o 8 Castle Avenue, Dover, CT16 1HA

Reports: Interim Report: Parfitt, K., and Halliwell, G. (1983) A Mesolithic site at Finglesham. *Kent Archaeological Review*, 72, 29-32.
 Final report in preparation.

Laboratory: Oxford

Entry: 12

**PART II
 TECHNICAL SPECIFICATION**

Section A. TL Measurements

1. Min(f) tech.(fig. 1 - 8µm)							
Sample Ref.	P ± s.e. (Gy)	I/P	S/lps	s Plateau	Peak	Stability	α value
257f1	7.85 ± 0.50	0	-	±5%; 325-400°	350°; 5°/s.	325 - 400°; 0.5s; 18°; 100±3%	0.08
257f2	8.92 ± 0.30	0	-	±5%; 325-375°	"	325 - 375°;	0.10
257f3	8.92 ± 0.50	0	-	±5%; 325-375°	"	325 - 375°;	0.10
257f4	11.30 ± 0.30	0	-	±3%; 375-475°	"	375 - 475°;	0.18
257f5	8.92 ± 0.30	0	-	±3%; 350-450°	"	350 - 450°;	0.10
257f8	7.02 ± 0.50	0	-	±6%; 350-425°	"	350 - 425°;	0.08
257f9	10.70 ± 0.50	0	-	±6%; 325-375°	"	325 - 375°;	0.10
257f10	11.30 ± 0.30	0	-	±3%; 350-450°	"	350 - 450°;	0.16

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components		Radon		Water Sample Env.			
		α	β	γ	cos.	%	%	%	%
257f1	1.31 ± 0.06	10	16	63	11	0 ± 3	0 ± 2	22 ± 3	"
257f2	1.41 ± 0.07	16	15	58	11	"	"	"	"
257f3	1.39 ± 0.07	15	15	59	11	"	"	"	"
257f4	1.64 ± 0.08	30	11	50	9	"	"	"	"
257f5	1.34 ± 0.07	16	12	61	11	"	"	"	"
257f8	1.24 ± 0.06	9	13	66	12	"	"	"	"
257f9	1.41 ± 0.07	17	14	58	11	"	"	"	"
257f10	1.49 ± 0.07	24	11	55	10	"	"	"	"

Method α-c α-c SpEC α-c
 FPH

Section C. Error [eA76]

Sample Ref.	TL Age			Errors	
	TL Age	Random	Overall	Random	Overall
257f1	5990	540	540	540	540
257f2	6325	695	695	695	695
257f3	6420	580	580	580	580
257f4	6890	620	620	620	620
257f5	6655	665	665	665	665
257f8	5670	560	560	560	560
257f9	7590	900	900	900	900
257f10	7580	705	705	705	705

Section D. TL Age

Laboratory: Oxford

Entry: 13

Site: Abri Vaufrey
 Location: Dordogne, France
 Grid Ref.: -
 Site Description: Rock shelter.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age: 12.0 ± 13 ka (Ox80TLfg)	216	flint	Layer IV, K11&12
TL Context Comps:	216c3	"	Layer IV, K12
	21611	"	Layer IV, K11, 32
	21612	"	Layer IV, K11, 93
	21613	"	Layer IV, K11, 120

Archaeological Evidence: Site occupation assigned to Riss-Wurm interglacial, oxygen isotope stage 5e, 115-125 ka.

Site Director: J-Ph. Rigaud, Ministère de la Culture, 28, Place Gambetta, 33074, Bordeaux Cedex, France.

Reports: Monograph, forthcoming (since 1985), Proc. Prehistoric Soc. of France. Aitken, M.J., Huxtable, J., and Debenham. (1986) Thermoluminescence dating in the Palaeolithic: burned flint, stalagmitic calcite and sediment. *Bull. d l'Assoc. Française pour l'Etude du Quaternaire*, 26, 7-14.

Laboratory: Oxford

Entry: 13

**PART II
 TECHNICAL SPECIFICATION**

Section A. TL Measurements

Sample Ref.	P ± s.e. (Gy)	I/P	Slips	s Plateau	Peak	Stability	a value
21663	99.5 ± 5.0	0	-	±2%; 350-475°	350°; 5°/s;	350-475°; 0.5a; 18°; 100±3%	0.06
21611	120.0 ± 5.0	0	-	+3%; 325-400°	"	325-400°; " "	0.07
21612	114.0 ± 5.0	0	-	+2%; 350-400°	"	350-400°; " "	0.06
21613	109.0 ± 4.0	0	-	+3%; 350-450°	"	350-450°; " "	0.06

I. Min(t) tech.(fig. 1 - 8µm)

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon		Water	
		α	β	γ	Sample	Env.	Sample	Env.
Method	mGy/a	%	%	%	%	%	%	%
21663	0.84 ± 0.04	12	22	62	4	0 ± 3	0 ± 2	16 ± 3
21611	0.94 ± 0.20	14	27	56	3	"	"	"
21612	0.82 ± 0.20	13	20	63	4	"	"	"
21613	0.89 ± 0.20	12	26	59	3	"	"	"
		α-c	α-c	SpEC	SpEC	α-c		
		FPH	FPH	SpEC	SpEC			

Section C. Error [eA76]

Sample Ref.	TL Age		Errors	
	a	a	Random	Overall
21663	118	10	10	10
21611	128	25	25	25
21612	140	25	25	25
21613	122	25	25	25

Special Remarks

Samples 11-13: not recently excavated material, but from same layer as sample e3. Gamma dose-rate based on measurement made during excavation of e3.

Laboratory: Oxford Entry: 14

Site: Pontnewydd Cave
Location: nr. St Asaph, Clwyd, Wales., UK
Grid Ref.: SJ 0153 7101
Site Description: Middle Pleistocene cave site.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Single Date: 200 ±25 ka	(Ox81TLfg)	226d flint	D687

Archaeological Evidence: Hominid remains and an Acheulian industry: assigned to oxygen isotope Stage 7 (195-250 ka).

Site Director: H.S. Green, National Museum of Wales, Cathays Park, Cardiff CF1 3NP, UK.

Reports: Green, H.S., Stringer, C.B., Collcutt, S.N., Currant, A.P., Huxtable, J., Schwarcz, H.P., Debenham, N., Embleton, C., Bull, P., Molleson, T.L., and Bevins, R.E. (1981). Pontnewydd Cave in Wales - a new Middle Pleistocene hominid site. *Nature*, 294, 707-713.
Green, H.S. (1984) *Pontnewydd Cave, A Lower Palaeolithic Hominid Site in Wales*. Nat. Mus. of Wales Quaternary Studies Monographs, No. 1. ISBN 0 7200 0282 6.

Laboratory: Oxford Entry: 14

PART II TECHNICAL SPECIFICATION

Section A. TL Measurements

I. Min(ifi) tech. (fg: 1 - 8µm)							
Sample Ref.	P ± s.e. (Gy)	I/P	Slips	s Plateau	Peak	Stability	a value
226d	290 ± 10	0	-	±3%; 375-475°	375°, 5°s;	375-475°, 0.5 a, 18°, 100±3%	0.08

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components			Radon Sample %	Water Env. %	
		α %	β %	γ cos. %			
226d	1.45 ± 0.10	8	9	81	2	0 ± 2 18 ± 7	
Method		α-c FPh	α-c FPh	CAP SPEC	SpEC	α-c	

Section C. Error [eA76]

Section D. TL Age		
Sample Ref.	TL Age a	Errors Random a. Overall a.
226d	200	25

Laboratory: Oxford

Entry: 15

Site: Baiche-Saint Vaast

Location: Metal works site: Chatillon-Commentry-Biache, Baiche-Saint Vaast, France

Grid Ref: -

Site Description: The site is located in the fluvial calcareous and shelly formations which overlie gravel of a low terrace of the Scarpe valley at the foot of the Artois chalk escarpement. The whole is overlain by a thick Saalian and Weichselian loess series which allows the site to be attributed a Middle Pleistocene age.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age: 175 ± 13 ka	(Ox83TLfg)	704g	flint B76
TL Context Comps:			
178 ± 14 ka	704g1	"	B76 9L, IIa SE
196 ± 16 ka	704g2	"	B76 16u IIa
159 ± 12 ka	704g3	"	B76 9c IIa
178 ± 14 ka	704g4	"	B76 10L IIa
176 ± 13 ka	704g5	"	B76 10A IIa
159 ± 12 ka	704g6	"	B76 15X NE

Archaeological Evidence: Archaeological material dated to the start of oxygen isotope Stage 6. An important Palaeolithic site with abundant lithic industry (especially Levallois flakes, side scrapers and denticulates), fauna, and a human skull. The flints were from the level containing the skull.

Site Director: A. Tuffreau, Université de Lille, Batiment 2 et 6, 59655 Villeneuve D'Ascq Cedex, France.

Reports: Tuffreau A., Munaut A.V., Puissegur J.J., and Somme J. (1982) Stratigraphie et environnement de la sequence archeologique de Baiche-Saint-Vaast. *Bull. Ass. Fr. Et. Quai.*, 10-11, 57-61.
 Aitken, M.J., Huxtable, J., and Debenham. (1986) Thermoluminescence dating in the Palaeolithic: burned flint, stalagmitic calcite and sediment. *Bul. d l'Assoc. Francaise pour l'Etude du Quaternaire*, 26, 7-14.

Laboratory: Oxford

Entry: 15

**PART II
 TECHNICAL SPECIFICATION**

Section A. TL Measurements

1. Min(t) tech. (fg: 1 - 8µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Slps	s Plateau	Peak	Stability	α value
704g1	80.0 ± 3.0	0	-	± 2%; 350-425°	375°, 5°/s-	350-425°; 0.5 a; 18°; 100±3%	0.12
704g2	78.5 ± 3.0	0	-	± 2%; 350-400°	"	350-400°; "	0.15
704g3	79.4 ± 3.0	0	-	± 2%; 325-400°	"	325-400°; "	0.11
704g4	85.6 ± 3.0	0	-	± 3%; 325-400°	"	325-400°; "	0.11
704g5	84.4 ± 3.0	0	-	± 3%; 350-400°	"	350-400°; "	0.11
704g6	79.4 ± 3.0	0	-	± 2%; 375-425°	"	375-425°; "	0.13

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon		Water Sample Env.	
		α	β	γ	cos.	%	%	%
704g1	0.45 ± 0.03	26	24	2.5	2.5	0 ± 3	0 ± 2	26 ± 3
704g2	0.40 ± 0.03	24	18	2.9	2.9	"	"	"
704g3	0.50 ± 0.03	29	25	2.3	2.3	"	"	"
704g4	0.48 ± 0.03	24	28	2.4	2.4	"	"	"
704g5	0.48 ± 0.03	21	33	2.3	2.3	"	"	"
704g6	0.50 ± 0.03	27	27	2.3	2.3	"	"	"

Section C. Error (± a76)

Sample Ref.	TL Age _a	Random _a	Errors Overall _a			
				α-c	α-c	α-c
704g1	178	14	14	α-c	α-c	α-c
704g2	196	16	16	FPH	FPH	FPH
704g3	159	12	12	SpEC	SpEC	SpEC
704g4	178	14	14			
704g5	176	13	13			
704g6	159	12	12			

Laboratory: Oxford

Entry: 16

Site: Grottes de Sclayn.

Location: Meuse Valley, Namur Province., Belgium

Grid Ref.: -

Site Description: Habitation cave site with Mousterian industries; overlain by Neolithic inhumations.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Single Date: 44 ± 5.5 ka	Ox83TL1g)	230a1 flint	Level 1A, 82-113.D15
TL Single Date: 130 ± 20 ka	Ox83TL1g)	230a2 flint	Layer 5B, 82.370.G13

Archaeological Evidence: C-14 age of 38600 ± 1500 BP (Lv 1377) for bone from same context as TL sample a1; sample a2 was from level 5B which was lower, and contained within a Levallois type industry.

Site Director: M. Otte, Université de Liège, Service de Préhistoire, place du XX août 7, Bâtiment A1, B-4000, Liège, Belgium.

Reports: Otte, M. (1979) Sclayn. *Archéologie*, 2, 12.
 Otte, M., Leotard, J-M, Schneider, A-M, and Gautier, A. (1983) Fouilles aux Grottes de Sclayn (Namur). *Helinium*, XXIII, 112-142.
 Otte, M., Everard, J-M, and Mathis, A. (1988) L'occupation du paléolithique moyen à Sclayn (Belgique). *Revue Archéo. de Picardie*, 1-2, 115-124.
 Otte, M. (forthcoming) Les Fouilles au sites Paléolithique de Sclayn - les sciences naturelles. *Etudes et Recherches Archéologiques de l'Université de Liège*. (Ed., M. Otte).

Aitken, M.J., Huxtable, J., and Debenham. (1986) Thermoluminescence dating in the Palaeolithic: burned flint, stalagmitic calcite and sediment. *Bul. d l'Assoc. Française pour l'Etude du Quaternaire*, 26, 7-14.

Laboratory: Oxford

Entry: 16

PART II
 TECHNICAL SPECIFICATION

Section A. TL Measurements

1. Min(tl) tech. (fig. 1 - 8µm)

Sample Ref.	P ± s.e. (Cy)	I/P	Slips	s Plateau	Peak	Stability	a value
230a1	61.5 ± 5.0	0	.	± 2%; 350-425°	400°; 5°/s;-	350-425°; 0.5 a; 18°; 100±5%	0.04
230a2	133.0 ± 13.0	0	.	± 2%; 350-425°	400°; 5°/s;-	350-425°; 0.5 a; 18°; 100±5%	0.08

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components			Radon		Water Sample Env.	
		α	β	γ cos.	%	%	%	%
230a1	1.40 ± 0.20	12	23	60	5	10 ± 5	0 ± 2	23 ± 3
230a2	1.02 ± 0.15	5	11	77	7	10 ± 5	0 ± 2	15 ± 3
Method		α-c	α-c	α-c	SpEC	α-c		
		FPh	SPEC	SPEC		α-SPEC		

Section C. Error [eA76]

Section D. TL Age

Sample Ref.	TL Age a	Errors		Overall a.
		Random a.	Overall a.	
230a1	44		5.5	
230a2	130		20	

Laboratory: Oxford

Entry: 17

Site: Maastricht-Belvedere
 Location: Sites C, G and K; NW of Maastricht on left bank of river Maas, Holland
 Grid Ref.: -

Site Description: Loess and gravel pit; excavation revealed about 3000 flint artefacts, mostly small flakes of Levallois type and some cores.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age: 263 ± 22 ka (Ox85TLfg)	712k	flint	Site C Stratigraphic Unit 4
TL Context Comps:	712k4	"	Az-12/9
	712k5	"	Cz-19/15
	712k6	"	Bz-20/2
	712k11	"	22/02-44
	712k12	"	dW 84/1
	712k13	"	dW 84/2
	712k14	"	1984 11/bf
TL Single Age: 238 ± 25 ka (Ox86TLfg)	712k17	flint	Site G 49/106-2
TL Single Age: 220 ± 20 ka (Ox86TLfg)	712k19	"	Site G 46/105-10
TL Single Age: 218 ± 24 ka (Ox87TLfg)	712k23	"	Site K 7/203

Archaeological Evidence: Probable correlation to oxygen isotope Stage 7.

Site Director: Wil. Roebroeks, Inst. of Prehistory, Leiden University, PO Box 9515, 2300 RA Leiden, The Netherlands.

Reports: Van Kolfschoten, T., and Roebroeks, W., eds. (1985) Maastricht-Belvedere: stratigraphy, palaeoenvironment and archaeology of the Middle and Late Pleistocene deposits. *Mededelingen Rijks Geologische Dienst* N.S.39. ISBN 9004 079 068.
 Aitken, M.J., Huxtable, J., and Debenham. (1986) Thermoluminescence dating in the Palaeolithic: burned flint, stalagmitic calcite and sediment. *Bull. d l'Assoc. Francaise pour l'Etude du Quaternaire*, 26, 7-14.

Laboratory: Oxford

Entry: 17

PART II
 TECHNICAL SPECIFICATION

Section A. TL Measurements

1. Min(fit) tech. (fig. 1 - 8µm)

Sample Ref.	P ± s.c. (Gy)	I/P	Slps	s Plateau	Peak	Stability	α value
712k4	330 ± 30	0	-	± 4%; 325-400°	375°; 5°/s;	325-400°; 0.5 hr; 18°; 100±3%	0.07
712k5	247 ± 15	0	-	± 4%; 325-425°	375°; 5°/s;	325-425°; "	0.10
712k6	280 ± 15	0	-	± 3%; 350-450°	350°; 5°/s;	350-450°; "	0.11
712k11	313 ± 15	0	-	± 3%; 325-400°	375°; 5°/s;	325-400°; "	0.11
712k12	294 ± 14	0	-	± 4%; 350-425°	375°; 5°/s;	350-425°; "	0.10
712k13	280 ± 18	0	-	± 4%; 350-425°	375°; 5°/s;	350-425°; "	0.10
712k14	235 ± 15	0	-	± 3%; 350-400°	375°; 5°/s;	350-400°; "	0.15
712k17	243 ± 13	0	-	± 5%; 325-375°	350°; 5°/s;	325-375°; "	0.10
712k19	218 ± 10	0	-	± 3%; 350-425°	375°; 5°/s;	350-425°; "	0.10
712k23	238 ± 14	0	-	± 6%; 325-400°	375°; 5°/s;	325-400°; "	0.08

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon %	Water Sample Env.
		α %	β %	γ %		
712k04	1.10 ± 0.15	8	15	65	12	45 ± 5
712k05	0.94 ± 0.14	3	6	77	14	0 ± 2
712k06	1.18 ± 0.18	13	13	63	11	16 ± 5
712k11	1.02 ± 0.15	9	7	71	13	"
712k12	1.18 ± 0.18	14	14	61	11	"
712k13	1.04 ± 0.15	8	10	69	13	"
712k14	1.07 ± 0.16	6	15	67	12	"
712k17	1.02 ± 0.15	12	18	58	12	"
712k19	0.99 ± 0.15	15	12	61	12	"
712k23	1.08 ± 0.16	10	11	67	12	"
Method		α-c	α-c	CAP	SpEC	α-c
			FPh	SpEC		α-SPEC

Section C. Error [eA76]

Sample Ref.	TL Age			Errors Overall a.
	TL Age a	Random a	Overall a.	
712k04	300		32	
712k05	263		27	
712k06	238		20	
712k11	307		28	
712k12	250		22	
712k13	269		26	
712k14	220		20	
712k17	238		25	
712k19	220		20	
712k23	218		24	

Laboratory: Oxford

Entry: 18

Site: Seclin
 Location: Mayolande factory, Seclin., France
 Grid Ref.: -

Site Description: Middle Palaeolithic

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age: 9.3 ± 9 ka	(Ox85TL)fg	720a	flint Stratigraphic Unit 7
TL Context Comps: 91.5 ± 11 ka	"	720a1	" 3D.Layer D4
90.0 ± 10 ka	"	720a2	" S84.5G.D7

Archaeological Evidence: Evidence of lithic industry manufacturing Levallois blades.

Site Director: A. Tuffreau, Université de Lille, Batiment 2 et 6, 59655 Villeneuve D'Ascq Cedex, France.

Reports: Tuffreau, T., Revillon, S., Sommé, J., Aitken, M.J., Huxtable, J., and Lacroix-Gourham, A. (1985) Le gisement Paleolithique moyen de Seclin. *Archeologisches Korrespondenzblatt*, 15, 131-138.
 Aitken, M.J., Huxtable, J., and Debenham. (1986) Thermoluminescence dating in the Palaeolithic: burned flint, stalagmitic calcite and sediment. *Bull. d l'Assoc. Francaise pour l'Etude du Quaternaire*, 26, 7-14.

Laboratory: Oxford

Entry: 18

PART II
TECHNICAL SPECIFICATION

Section A. TL Measurements

1. Min(fit) tech.(fig. 1 - 8µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Slips	s Plateau	Peak	Stability	a value
720a1	89.5 ± 4.0	0	-	±2%; 350-400°	350°; 5°/s-	350-400°; 0.5 at; 18°; 100±3%	0.10
720a2	122.0 ± 5.0	0	-	±3%; 350-425°	350°; 5°/s-	350-425°; 0.5 at; 18°; 100±3%	0.21

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components			Radon	Water Sample Env.
		α	β	γ		
720a1	0.98 ± 0.05	10	16	62	0 ± 3	0 ± 2
720a2	1.28 ± 0.05	2.6	1.6	50	0 ± 3	0 ± 2
Method		α-c	α-c	CAP SpEC	α-c	α-c
		FPh	SpEC			

Section C. Error [eA76]

Sample Ref.	TL Age		Errors	
	a	a	Random	Overall
720a1	91.5	11		
720a2	95.0	10		

Site: Hengistbury Head
 Location: Nr. Bournemouth, Dorset., UK.
 Grid Ref.: SZ 172906

Site Description: Upper Palaeolithic and Mesolithic sites

Dates	Lab. Ref. Mat'l	Archaeological Reference
TL Context Age: 12.5 ± 1.15 ka (Ox82TLfg)	707a	Mace/Campbell Site
TL Context Comps:		
14.3 ± 2.43 ka	707a1	O31
10.8 ± 1.90 ka	707a3	N30
12.8 ± 1.97 ka	707a4	J33
10.4 ± 1.42 ka	707a5	L29
11.9 ± 1.29 ka	707a11	R30
13.0 ± 1.92 ka	707a12	I33
TL Context Age: 9.75 ± 0.95 ka (Ox82TLfg)	707c	Powell Site
TL Context Comps:		
9.32 ± 1.26 ka	707c1	I9
7.00 ± 1.14 ka	707c2	G11
12.3 ± 1.67 ka	707c3	F14
8.88 ± 1.0 ka	707c7	D14
10.75 ± 1.5 ka	707c9	G11

Archaeological Evidence: Mace/Campbell Site: Scatter of flint artefacts in fine-grained sand deposits. The TL determinations were all on artefacts and the dates fall within the expected time range for a Late Upper Palaeolithic industry.
 Powell Site: Concentration of flint artefacts stratified in windblown sands. The dates corroborate the Early Mesolithic classification of the flint assemblage.

Site Director: R.N.E. Barton., Inspectorate of Ancient Monuments, Fortress House, 23 Saville Row, London W1X 2HE

Reports: Barton, R.N.E., and Huxtable, J. (1983) New dates for Hengistbury Head *Antiquity*, LVII, 220, 133-135
 Barton, R.N.E. (1988) The Upper Palaeolithic and mesolithic sites at Hengistbury Head. (Ed R.N.E. Barton) Monograph Series, Oxford Committee for Archaeology. In press.

PART II
 TECHNICAL SPECIFICATION

Section A. TL Measurements

I. Min(t) tech.(fg; 1 - 8µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Slips	s Plateau	Peak	Stability	a value
707a1	8.00 ± 0.70	0	-	± 3%; 350-425°	375°; 5°/s;	350 - 425°; 0.5a; 18°; 100±3%	0.12
707a3	6.20 ± 0.70	"	-	± 3%; 325-400°	375°; 5°/s;	325 - 400°; "	0.09
707a4	8.40 ± 0.70	"	-	± 3%; 325-400°	350°; 5°/s;	325 - 400°; "	0.19
707a5	6.20 ± 0.70	"	-	± 5%; 350-425°	375°; 5°/s;	350 - 425°; "	0.11
707a11	8.00 ± 0.70	"	-	± 3%; 350-400°	375°; 5°/s;	350 - 400°; "	0.07
707a12	8.50 ± 0.80	"	-	± 3%; 350-400°	375°; 5°/s;	350 - 400°; "	0.18
707c1	6.30 ± 0.50	"	-	± 4%; 350-425°	375°; 5°/s;	350 - 425°; "	0.14
707c2	4.40 ± 0.40	"	-	± 7%; 325-400°	375°; 5°/s;	325 - 400°; "	0.15
707c3	7.50 ± 0.50	"	-	± 2%; 325-400°	375°; 5°/s;	325 - 400°; "	0.10
707c7	7.50 ± 0.50	"	-	± 3%; 350-400°	375°; 5°/s;	325 - 400°; "	0.12
707c9	6.40 ± 0.50	"	-	± 3%; 325-400°	375°; 5°/s;	325 - 400°; "	0.08

Section B. Dose-rate Measurements

Sample Ref.	Total Dose-rate mGy/a	Dose-rate Components			Radon		Water	
		α	β	γ cos.	%	%	Sample	Env.
707a1	0.57 ± 0.05	11	12	53	24	0 ± 3	0 ± 2	15 ± 5
707a3	0.57 ± 0.05	9	14	53	24	"	"	"
707a4	0.66 ± 0.05	17	17	45	21	"	"	"
707a5	0.60 ± 0.05	8	18	51	23	"	"	"
707a11	0.67 ± 0.05	12	22	45	21	"	"	"
707a12	0.65 ± 0.05	17	15	47	21	"	"	"
707c1	0.67 ± 0.05	18	13	49	20	"	"	"
707c2	0.63 ± 0.05	13	13	52	22	"	"	"
707c3	0.61 ± 0.04	10	13	54	23	"	"	"
707c7	0.84 ± 0.06	26	18	39	17	"	"	"
707c9	0.60 ± 0.04	8	13	56	23	"	"	"
Method		α-c	α-c	α-c	SpEC	α-c	α-c	
		FPH	SPFC					

Section D. TL Age

Sample Ref.	TL Age		Errors	
	a	a	Random	Overall
707a1	14.30		2.43	
707a3	10.80		1.90	
707a4	12.80		1.97	
707a5	10.40		1.42	
707a11	11.90		1.29	
707a12	13.00		1.92	
707c1	9.32		1.26	
707c2	7.00		1.14	
707c3	12.30		1.67	
707c7	8.88		1.00	
707c9	10.75		1.50	

Section C. Error [eA76]

Laboratory: Oxford

Entry: 21

Site: Shuwikhat 1

Location: Gebel Ras El Bisir near Qena in the Eastern Desert., Egypt

Grid Ref.: 26°14'N 32°36'E

Site Description: In Nile silts at the outer edge of a fan deposit of a wadi draining Gebel Ras El Bisir. The site is an Early Late Palaeolithic occupation site in the flood plain of the former Nile.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age: 25.0 ± 2.5 ka	(Ox85TLi)	253 burnt clay	ME85/3/48 21N/3EB
TL Context Comps: 25.2 ± 2.8 ka	"	253(ii)	"
"	"	253(iii)	"
"	"	253(iii)	"

Archaeological Evidence: The archaeological material is included in the Shuwikhat silts. A buried soil is present within these silts and is posterior to the occupation. The Shuwikhat silts are overlain by the black Sheikh Houssein silts, dated at 12-13,000 BP (Vermeersch, Paulissen and Van Neer, 1985), and laid down by the 'Wild Nile' (Butzer and Hansen, 1968). Faunal remains (aurochs, hartebeest, gazelle and catfish) were abundant, but only a few were identifiable due to the high degree of postdepositional fragmentation. No Levallois nor Halfan technology has been detected on the site.

Nearly all tools are made on a blade. The most common tool type is the unilaterally denticulated blade (17%) but bilateral ones (9%) are also numerous. The bilaterally denticulated blades were often made on pointed blanks. Burins represent about 13% of tools and were normally made on strong blades. Multiple burins are numerous. End-scrapers on a blade are as numerous as burins. Combinations tools do occur. Blunting of the proximal end of the blade is rather frequent (10%). Backed blades, but mostly fragments, represent 5%. Bored and truncated pieces are rare. Backed bladelets, Ouchiatia bladelets and bifacial pieces are absent.

Site Director: Prof. Dr. P.M. Vermeersch, Laboratorium voor Prehistorie Katholieke Universiteit Te Leuven, Redingenstraat 16 bis, 3000 Leuven, Belgium.

Reports: Paulissen, E., and Vermeersch, P.M. (1987) Earth, Man and Climate in the Egyptian Nile Valley during the Pleistocene, 29-67. In *Prehistory of arid North Africa* (A. Close, Ed). Southern Methodist University Press, Dallas. Paulissen, E., and Vermeersch, P.M., and Van Neer, W. (1985) Progress report on the Late Palaeolithic Shuwikhat sites. *Niyame Akuma*, 26, 7-14.

Laboratory: Oxford

Entry: 21

**PART II
TECHNICAL SPECIFICATION**

Section A. TL Measurements

1. Min(g) tech.(i; 90 - 125 µm)						
Sample Ref.	P ± s.e. (Gy)	I/P	Sips	s Plateau	Peak	Stability
253(i)	40.80 ± 4.00	0	1.25±0.05	±5%; 300-350°	325°, 5°/s;	-
253(ii)	42.70 ± 4.00	0	1.22±0.05	±3%; 300-375°	325°, 5°/s;	-
253(iii)	40.20 ± 4.00	0	1.40±0.05	±4%; 300-350°	325°, 5°/s;	-

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components			Radon	Water Sample Env.
		α	β	γ		
253(i)	1.62 ± 0.16	%	54	37	9	5 ± 5
253(ii)	1.73 ± 0.17	%	57	35	8	"
253(iii)	1.60 ± 0.16	%	53	38	9	"

Method: α-c FPh SPEC α-c FPh SPEC α-c

Section C. Error [eA76]

Sample Ref.	TL Age		Errors	
	a	b	a	b
253(i)	25.2	24.8	2.8	2.7
253(ii)	24.8	25.1	2.7	2.8
253(iii)	25.1	25.1	2.8	2.8

Site: Hummal Well, EL Kowm.
Location: El-Kowm basin, N of Palmyra in the Syrian desert/steppe, Syria
Grid Ref.: 426B DU8/9

Site Description: Hummal is a mound-spring, developed into a well by peasants, one of many in the artesian basin, a closed depression.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age: 160 ± 22 ka	(Ox85TL)g	2351b	flint Level Ib
TL Context Comps:	180 ± 25 ka	2351b(i)	"
	145 ± 20 ka	2351b(ii)	"
	160 ± 23 ka	2351b(iii)	"
TL Context Age: 104 ± 9 ka	235 6b	flint	Level 6b
TL Context Comps:	97 ± 8 ka	235 6b(i)	"
	105 ± 9 ka	235 6b(ii)	"
	112 ± 10 ka	235 6b(v)	"

Archaeological Evidence: The industry of Level Ib (basal so far) is Yabrudian, embedded in the travertine, and below Middle Palaeolithic (Hummalian and Moustesian) layers. The date is similar to U/Th series dates of 157 ka and 140 ka for the same travertine. Level 6b was enigmatic because it consisted of abraded and patinated Moustesian-like blades but the level was far above the other Moustesian layers. Could it be transitional to Upper Palaeolithic? The date indicates the artefacts are derived possibly by spring action. The date is otherwise good for an early Levallais-Moustesian, dated elsewhere at El-Kowm by U/Th series dating to around 80 000 and earlier (c. 120 - 110 ka) on the coast.

Site Director: F. Hours (deceased); now J-M Le Tensorer, Basle University, Switzerland.

Reports: Hennig, G., and Hours, F. (1982) Dates pour le passage entre l'Acheulien et le paleolithique Moyen à El-Kowm, Syrie. *Paléorient*, 8(1), 81-83.
Copeland, L., and Hours, F. (1982) Le Yabroudien d'El-Kowm, Syrie et sa place dans la Paleolithique du Levant. *Paléorient*, 9(1), 21-37.

PART II TECHNICAL SPECIFICATION

Section A. TL Measurements

1. Min(ft) tech. (fig. 1 - 8µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Slips	s Plateau	Peak	Stability	a value
2351b(i)	380 ± 35	0	-	±5%; 350-425°	350°; 5°/s;	350-425°; 0.5a; 18°; 100±3%	0.12
2351b(ii)	305 ± 25	0	-	±3%; 350-400°	350°; 5°/s;	350-400°; "	0.11
2351b(iii)	350 ± 30	0	-	±5%; 375-425°	375°; 5°/s;	375-425°; "	0.12
2356b(i)	286 ± 25	0	-	±3%; 325-375°	350°; 5°/s;	325-375°; "	0.17
2356b(ii)	310 ± 25	0	-	±5%; 325-400°	350°; 5°/s;	325-400°; "	0.14
2356b(v)	310 ± 25	0	-	±5%; 325-400°	350°; 5°/s;	325-400°; "	0.18

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon		Water	
		α	β	γ cos.	%	%	%	%
235 1b(i)	2.11 ± 0.10	1	4	89	6	0 ± 3	0 ± 2	3 ± 3
235 1b(ii)	2.11 ± 0.10	1	4	89	6	"	"	"
235 1b(iii)	2.12 ± 0.11	1	4	89	6	"	"	"
235 6b(i)	2.96 ± 0.15	34	15	46	5	"	"	"
235 6b(ii)	2.93 ± 0.15	33	16	46	5	"	"	"
235 6b(v)	2.76 ± 0.14	33	12	50	5	"	"	"

Method

α-c

α-c

FPh

CAP

CAP

α-c

Section C. Error [eA76]

Section D. TL Age

Sample Ref.	TL Age		Errors	
	a	a	Random	Overall
235 1b(i)	180	180	25	25
235 1b(ii)	145	145	20	20
235 1b(iii)	165	165	23	23
235 6b(i)	97	97	8	8
235 6b(ii)	105	105	9	9
235 6b(v)	112	112	10	10

Laboratory: Oxford

Entry: 23

Site: Höfer 1

Location: Near Celle in Lower Saxony on the River Aschau., Germany

Grid Ref.: -

Site Description: Late Glacial tanged point complex.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Single Date: 12.6 ± 1.6 ka	(Ox88TL)fg	258a1 flint	II/535

Archaeological Evidence: The date for Höfer is quite interesting because it lies beyond the hitherto archaeologically presumed age of this kind of tanged-point assemblage (Diederse-Lavesum-Gruppe of Taute, 1968): end of Dryas III or even Preboreal (=approx. 10 000 BP). Even the 68% confidence interval does not cover these chronozones. On the other hand the dating of special assemblage types of the tanged-point complex is rarely based on radiometric, pollen analytical, or other than archaeological evidence. Furthermore Höfer can archaeologically be interpreted as a special activity camp(s) which may lack tanged points perhaps because of this. It should be kept in mind however, that the limits of the chronozones are based on C-14 dates (Mangerud u.a. 1976) which are not calibrated and therefore not directly comparable with TL dates. An example for diverging dates are the Magdalenian sites of the Paris Basin where TL dates appear older than C-14 dates (Schmider, 1982, 1987).

Site Director: Dr. S. Veil, Niedersächsisches Landesmuseum, 3 Hannover 1, Am Maschpark 5, West Germany.

Reports: Veil, S., Lass, G., and Meyer, H.-H. (1987) Ein fundplatz der Steilsplitzen-Gruppen ohne steilsplitzen bei Höfer, Ldkr. Celle. *Archäologisches Korrespondenzblatt*, 17, 311-322.
 Veil, S., Lass, G., and Meyer, H.-H. (1987) Interdisziplinäre untersuchungen zum spätpaläolithischen fundplatz Höfer, Ldkr. Celle. *Berichte der Naturhistorischen Gesellschaft zu Hannover*, 129, 225-260.

Laboratory: Oxford

Entry: 23

PART II
TECHNICAL SPECIFICATION

Section A. TL Measurements

1. Min(fit) tech.(fg: 1 - 8µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Slips	s Plateau	Peak	Stability	a value
258a1	6.55 ± 0.50	0	-	±2%, 375-425°	375°, 5°/s;	375-425°, 0.5a, 18°, 100±3%	0.10

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components			Radon		Water Sample Env.	
		α %	β %	γ cos. %	%	%	%	%
258a1	0.52 ± 0.05	12	12	50	26	0 ± 3	0 ± 2	13 ± 3
Method		α-c	α-c	SPEC	SpEC	α-c		
		FPh						

Section C. Error [eA76]

Sample Ref.	TL Age		Errors Overall
	a	b	
258a1	12.6	1.6	1.6

Laboratory: Oxford

Entry: 24

Site: Schweskau.

Location: Near Lüchow, Lower Saxony, Germany.

Grid Ref.: --

Site Description: Late Glacial, shouldered point complex.

Dates	Lab. Ref. Mat'l	Archaeological Reference
TL Single Date: 8.3 ± 1.0 ka	(Ox88TLfg) 259b1	flint 157
TL Single Date: 7.0 ± 0.9 ka	(Ox88TLfg) 259b2	flint 519
TL Single Date: 8.3 ± 1.0 ka	(Ox88TLfg) 259b3	flint 67/58

Archaeological Evidence: The dates of Schweskau material are acceptable, although most of the excavated concentration must be archaeologically attributed to LUP, probably before Allerød. We can isolate a few flint artefacts which scatter all over the concentration and beyond, and seem to be Mesolithic by technology, patination, proportion of craquelé and typology. Especially the craquelé may be attributed to this later settlement. OxTL259b2 fits well with the only microlith found during excavation (later Mesolithic).

Site Director: Dr. S. Veil, Niedersächsisches Landesmuseum, 3 Hannover 1, Am Maschpark 5, West Germany.

Reports: In preparation

Laboratory: Oxford

Entry: 24

PART II
TECHNICAL SPECIFICATION

Section A. TL Measurements

1. Min(fit) tech. (fig. 1 - 8µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Slps	s Plateau	Peak	Stability	a value
259b1	4.90 ± 0.40	0	-	+5%; 375-450°	375%; 5°/s;	375-450°; 0.5 a; 18°; 100±3%	0.10
259b2	4.25 ± 0.35	0	-	+6%; 350-425°	375%; 5°/s;	350-425°; "	0.08
259b3	5.55 ± 0.30	0	-	+6%; 325-400°	375%; 5°/s;	325-400°; "	0.10

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components			Radon		Water	
		α	β	γ	cos.	Sample	Env.	%
259b1	0.59 ± 0.06	8	10	58	24	0 ± 3	0 ± 2	27 ± 3
259b2	0.61 ± 0.06	10	13	54	23	0	"	"
259b3	0.67 ± 0.07	15	13	51	21	0	"	"
Method		α-c	α-c	SPEC	SPEC	α-c	α-c	
			FPH					

Section C. Error [eA76]

Sample Ref.	TL Age		Errors	
	a	Random	Overall	a.
259b1	8.3			1.0
259b2	7.0			0.9
259b3	8.3			1.0

Laboratory: Oxford

Entry: 25

Site: Chaperon Rouge 1
 Location: Rabat, Morocco
 Grid Ref.: -

Site Description: Archaeological layer on Magreben calcite overlain by Ibero-Maurusien.

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Single Date: 28.2 ± 3.3 ka	(Ox88TLfg)	724g1 flint	CH-R G59.4

Archaeological Evidence: The site contains late Aterien artefacts overlain by Ibero-Maurusien Epi-Palaeolithic and Neolithic levels. The date is in good agreement with others from N. Africa.

Site Director: J-P Texier, Inst. du Quaternaire, Université de Bordeaux I. Bâtiment de Géologie. Ave. des Facultés 33405. Talence Cedex France.

Reports: Texier, J-P, Huxtable, J., Rhodes, E., Miallier, D. and Ousmoi, M. (1988) Nouvelles données sur la situation chronologique de l'Altérien et leurs implications. Paper to be published in *Prehistoire*

Laboratory: Oxford

Entry: 25

PART II
TECHNICAL SPECIFICATION

Section A. TL Measurements

1. Min(f) tech.(fg: 1 - 8µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Stips	s Plateau	Peak	Stability	α value
724g1	49.30 ± 4.00	0	-	±5%; 350-425°	375°, 57/6;	350-425°; 0.5 a; 18°; 100±3%	0.13

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon	Water Sample Env.
		α	β	γ		
724g1	1.75 ± 0.17	49	28	15	8	5 ± 5
Method		α-c	α-c	Cap	SpEC	α-c
		FPh	Sp,PEC			

Section C. Error [eA76]

Section D. TL Age

Sample Ref.	TL Age	Random	Errors Overall
724g1	28.2	a	a. 3.3

Site: Rekem
 Location: Meuse River Valley, Belgium
 Grid Ref.: 50°54'N 5°41'E

Site Description: Late Palaeolithic (Federmeiser group) campsite situated on late Pleistocene sand deposits.

Dates	TL Context Age	Lab. Ref.	Mat'l	Archaeological Reference
	12.2 ± 1.1 ka	(Ox88TLi) 246	quartzite pebbles	-
TL Context Comps:	11.6 ± 1.2 ka	246a1	"	N8E 34/5
	12.3 ± 1.4 ka	246b3	"	N18 E0/212
	12.6 ± 1.4 ka	246b6	"	N18 E4/62
	12.1 ± 1.3 ka	246c7	"	N2 E6/136
	11.8 ± 1.2 ka	246c8	"	N2 E6/139
	13.0 ± 1.5 ka	246c9	"	N2 E6/167
	11.1 ± 1.2 ka	246c10	"	N2 E4/10
	13.0 ± 1.4 ka	246d11	"	SO E12/2

Archaeological Evidence: Excavations which started in 1984 have revealed the presence of at least sixteen spatially independent structures, consisting of concentrations of lithic waste material which are dispersed in a cluster on a total excavated surface of 1.7 ha. Organization of the settlement is studied through refitting analyses, which will help also in establishing the internal chronology of the site. Evidence of a dwelling structure and hearths are preserved. No organic preservation except the resin attached to an arrow-head point (C-14 date: 11 350 ± 150 OxA-942).

Site Director: Drs Robert Lauwers Katholieke Universiteit te Leuven Laboratorium voor Prehistorie Redingenstraat 16 bis 3000 Leuven Belgium.

Reports: Lauwers, R. (1985) Découverte d'un vaste campement du Paléolithique Final dans la vallée de la Meuse, Belgique. *L'Anthropologie*, 89, 557-559.
 Lauwers, R. (1988) Le gisement tjongéren de Rekem (Belgique) Premier bilan d'une analyse spatiale. In *Les civilisations du Paléolithique final de la Loire à l'Oder* (M. Otte, Ed.). Liège.

PART II
 TECHNICAL SPECIFICATION

Section A. TL Measurements

Sample Ref.	P ± s.e. (Gy)	I/P	Slips	s Plateau	Peak	Stability
246a1	16.80 ± 0.80	0	0.93 ± 0.03	± 6%; 325-425°	375°, 5°/s;	-
246b3	16.50 ± 0.80	0	0.82 ± 0.04	± 3%; 300-350°	325°, 5°/s;	-
246b6	17.40 ± 0.90	0	0.85 ± 0.04	± 5%; 350-400°	375°, 5°/s;	-
246c7	63.80 ± 1.80	0	1.10 ± 0.05	± 3%; 275-375°	350°, 5°/s;	-
246c8	5.30 ± 0.30	0	0.33 ± 0.03	± 3%; 325-375°	350°, 5°/s;	-
246c9	87.00 ± 4.00	0	1.10 ± 0.05	± 5%; 350-425°	350°, 5°/s;	-
246c10	20.60 ± 0.60	0	1.00 ± 0.05	± 3%; 325-375°	350°, 5°/s;	-
246d11	10.40 ± 0.50	0	0.65 ± 0.03	± 5%; 300-350°	325°, 5°/s;	-

I. Min(q) tech.(i; 90 - 125µm)

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components			Radon		Water Sample Env.	
		α	β	γ	cos.	%	%	%
246a1	1.45 ± 0.10	72	18	10	0 ± 3	0 ± 2	25 ± 5	
246b3	1.34 ± 0.13	35	55	10	"	"	"	
246b6	1.38 ± 0.10	71	19	10	"	"	"	
246c7	5.28 ± 0.28	83	14	3	"	"	"	
246c8	0.44 ± 0.04	9	59	32	"	"	"	
246c9	6.69 ± 0.50	87	11	2	"	"	"	
246c10	1.85 ± 0.18	52	41	7	"	"	"	
246d11	0.80 ± 0.08	50	33	17	"	"	"	

Method α-c CAP FPH β-c CAP SPEC γ-c CAP SPEC

Section C. Error [eA76]

Sample Ref.	TL Age			Errors	
	a	Random	Overall	a	a.
246a1	11.6			1.2	1.4
246b3	12.3			1.4	1.4
246b6	12.6			1.4	1.3
246c7	12.1			1.2	1.5
246c8	11.8			1.2	1.2
246c9	13.0			1.1	1.2
246c10	11.1			1.2	1.4
246d11	13.0			1.4	1.4

Laboratory: Oxford

Entry: 27

Site: Baume-Vallée (Abri Laborde)
 Location: Near Solognac sur Loire, Haute-Loire, France
 Grid Ref.:
 Site Description: Rockshelter

Dates	Lab. Ref.	Mat'l	Archaeological	Reference
TL Context Age: 78.5 ± 7.5 ka	248e	flint	Layers 29-32	Raynal ex.
TL Context Comps: 81 ± 8.2 ka	248e1	"	J 3.84 29b layer 29b	
75 ± 7.5 ka	248e2	"	BV 79 K6 145 layer 30	
80 ± 8.0 ka	248e3	"	BV 69 NV 490 layers 29 to 32	

Archaeological Evidence: Moustérien de type Charentien, varié Ferrassie. Ces dates sont actuellement les plus anciennes connues en France pour ce genre d'outillage lithique, ce qui est en parfait accord avec la chronologie supposée de ces outillages

Site Director: J.P Raynal, Université de Bordeaux, Institut du Quaternaire, Ave. des Facultés, 33405 Talence Cedex, France

Reports: Raynal, J.P. et Decroix, C. (1987) L'abri de Baume-Vallée (Haute-Loire, France), site Moustérien de moyenne montagne dans son contexte régional. *Arqueologia*, Porto, 17-42.15
 Forthcoming report in C.R. Académie des Sciences, Paris.

Laboratory: Oxford

Entry: 27

PART II
TECHNICAL SPECIFICATION

Section A. TL Measurements

1. Min(f) tech.(fig. 1 - 8 µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Sips	s Plateau	Peak	Stability	a value
248e1	76.5 ± 4.0	0	-	± 4%; 325-375°	350°; 5°/s;	325-375°; 0.5a;	0.09
248e2	72.0 ± 4.0	0	-	± 5%; 300-375°	350°; 5°/s;	300-375°;	0.20
248e3	72.0 ± 2.0	0	-	± 5%; 325-375°	350°; 5°/s;	325-375°;	0.17

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components			Radon		Water Sample Env.	
		α	β	γ	cos.	%	%	%
248e1	0.94 ± 0.08	9	13	74	4	0 ± 3	0 ± 2	2 ± 2
248e2	0.96 ± 0.08	16	11	69	4	"	"	"
248e3	0.90 ± 0.08	13	9	74	4	"	"	"

Method: α-c α-c CAP α-c
 FPPh SPEC * SPEC

Section C. Error [eA76]

Section D. TL Age

Sample Ref.	TL Age	Errors		Overall
		Random	Overall	
248e1	81	8.2	8.2	
248e2	75	7.5	7.5	
248e3	80	8.0	8.0	

Special Remarks
 Cosmic dose-rate based on calculation using formula given by J.R. Prescott and L.G. Stephan (1982). Contribution of cosmic radiation to environmental dose. *PACT J.*, 6, 17-25.

Laboratory: Durham

Entry: 28

Site: Waspserton
Location: Warwickshire, England (SMR WA 1845)
Grid Ref.: SP 261 581

Site Description: Late Bronze Age - Iron Age Settlements (preceded by Neolithic occupation and succeeded by Romano-British settlement and an Anglo-Saxon cemetery)

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Single Dates: 440 BC ±195 (Dur86TLq1)	83-1	Pottery	F700 1804
190 BC	83-2	"	F15 1822
530 BC	83-3	"	F1729 5756
440 BC	83-4	"	F1739 5782
850 BC	83-5AS	"	F1765 5889
690 BC	83-6	"	F1780 6113
1300 BC	83-7	"	F1918 6617
630 AD	83-8	"	F1948 6717
280 BC	83-9	"	F4031 6901
205 BC	83-10	"	F4040 6955
885 BC	83-11	"	F4074 7235
735 BC	83-12	"	F4118 7353
100 BC	83-13	"	F4126 7380

Archaeological Evidence: Coarse ware pottery taken from a variety of settlement features, including storage pits, post-holes, hut foundation slots and a large defensive enclosure ditch. The settlement features were extensive and related to up to 7 spatially distinct settlements.

Site Director: Mr. Gillis Crawford, Birmingham University Field Archaeology Unit, PO Box 363, Birmingham B15 2TT.

Reports: Crawford, G.M. (1981) Excavations at Waspserton - 5th Interim Report. *West Midlands Archaeology*, 28, 1-3.

Laboratory: Durham

Entry: 28

PART II
TECHNICAL SPECIFICATION

Section A. TL Measurements

1. Min(q) tech. (i: 90 - 150 µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Sips	Plateau	Peak	Stability
83-1	7.41 ± 0.37	0.13	1.07	s:±3%;375-425°	-	375-400°; 0.6σ;103±2(σe12)% *
83-2	6.32 ± 0.28	0.27	1.05	s:±4%;375-425°	-	"
83-3	6.39 ± 0.38	0.09	1.20	s:±5%;350-425°	-	"
83-4	6.45 ± 0.45	0.25	0.98	d:±5%;375-400°	-	"
83-5AS*	7.78 ± 0.80	-	-	-	-	"
83-6	7.56 ± 0.40	0.05	0.99	d:±5%;350-425°	-	"
83-7	10.91 ± 0.56	0.05	1.07	d:±5%;375-400°	-	"
83-8	3.83 ± 0.23	0.04	0.95	s:±4%;375-425°	-	"
83-9	6.84 ± 0.51	0.06	0.98	s:±4%;350-425°	-	"
83-10	6.95 ± 0.37	0.03	1.05	s:±3%;375-425°	-	"
83-11	7.54 ± 0.40	0.03	1.12	s:±5%;375-425°	-	"
83-12	9.07 ± 0.46	0.02	1.15	s:±3%;375-425°	-	"
83-13	6.56 ± 0.52	0.06	1.05	d:±5%;360-400°	-	"

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate	Dose-rate Comps		Radon	Water	
		β	γ		Sample	Env.
	mGy/a	%	%	%	%	%
83-1	3.05 ± 0.07	72	23	5	8 ± 2	9 ± 2
83-2	2.91 ± 0.07	71	24	5	9 ± 2	9 ± 2
83-3	2.54 ± 0.04	67	28	5	8 ± 2	8 ± 2
83-4	2.66 ± 0.08	68	26	6	9 ± 2	9 ± 2
83-5AS	2.75 ± 0.10	69	26	5	10 ± 2	10 ± 2
83-6	2.83 ± 0.06	70	25	5	9 ± 2	9 ± 2
83-7	3.32 ± 0.06	74	21	5	8 ± 2	8 ± 2
83-8	2.83 ± 0.11	70	25	5	8 ± 2	8 ± 2
83-9	3.02 ± 0.11	72	23	5	8 ± 2	8 ± 2
83-10	3.17 ± 0.05	73	22	5	12 ± 2	12 ± 2
83-11	2.63 ± 0.05	68	27	5	9 ± 2	9 ± 2
83-12	3.33 ± 0.10	75	21	4	8 ± 2	8 ± 2
83-13	3.14 ± 0.12	73	22	5	9 ± 2	9 ± 2
Method	TLD	CAP	SpBc	CAP	α-c	
	XRF, α-c	SpBc				

Section C. Error [eA76]

Sample Ref.	TL Age		Errors	
	a	σ	Rand'm	Over'll
83-1	2426	133	196	196
83-2	2176	110	177	177
83-3	2515	154	217	217
83-4	2427	191	244	244
83-5AS	2834	-	400	400
83-6	2675	151	226	226
83-7	3287	178	275	275
83-8	1355	88	122	122
83-9	2267	189	236	236
83-10	2192	123	197	197
83-11	2870	159	239	239
83-12	2721	161	238	238
83-13	2087	182	226	226

Special Remarks

83-5. AS denotes Survey accuracy obtained.
5. Stab. Result is mean for all samples.

Laboratory: Oxford

Entry: 29

Site: Asprochaliko Rockshelter

Location: 20 m above the Louros River on the right bank of its gorge; between the modern towns of Ioannina and Arta., Greece

Grid Ref.: -

Site Description: Rockshelter

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Context Age: 98.5 ±12 ka	(Ox88TLfg)	229g	flint Layer 18
TL Context Comps: 102 ±14 ka		229g(i)	A9/114
96 ±12 ka		229g(ii)	A9/115

Archaeological Evidence: Layer 18 contains basal Mousterian of the Asprochaliko Rockshelter. The TL date demonstrates that this belongs to a phase within the last interglacial.

Site Director: The late E.S. Higgs, Department of Archaeology, University of Cambridge.

Reports: Higgs, S.E., and Vita-Finzi, C. (1966) The climate, environment and industries of Stone Age Greece, part II. *Proc. Prehist. Soc.*, **32**, 1-29.
Bailey, G.N., Carter, P.L., Gamble, C.S. and Higgs, H.P. (1983) Asprochaliko and Kastritsa: further investigations of Palaeolithic settlement and economy in Epirus (north-west Greece). *Proc. Prehist. Soc.*, **49**, 15-42.

Laboratory: Oxford

Entry: 29

**PART II
TECHNICAL SPECIFICATION**

Section A. TL Measurements

I. Min(f) tech.(fg. 1 - 8 μ m)

Sample Ref.	P ± s.e. (Gy)	I/P	S/lps	s Plateau	Peak	Stability	α val
229g(i)	48 ± 3	0	-	± 3%; 350-400°	375°; 57/si.	350-400°; 0.5a; 18°; 100±3%	0.11
229g(ii)	61 ± 4	0	-	± 3%; 350-450°	375°; 57/si.	350-450°; 0.5a; 18°; 100±3%	0.11

Section B. Dose-rate Measurements

Sample Ref.	Total Eff. Dose-rate mGy/a	Dose-rate Components			Water Sample Env.			
		α	β	γ	Radon	%		
229g(i)	0.47 ± 0.07	11	19	47	23	0 ± 3	0 ± 2	20 ± 10
229g(ii)	0.64 ± 0.09	28	22	34	16	0 ± 3	0 ± 2	20 ± 10
Method		α -c	α -c	CP	CP	α -c		
			FPh					

Section C. Error [eA76]

Sample Ref.	TL Age		Errors	
	a	a	Random	Overall
229g(i)	102	96	14	12
229g(ii)				

Site: Thorpe Thewles
 Location: Cleveland, UK
 Grid Ref.: NZ 3963 2432
 Site Description: Iron Age settlement

Dates	Lab. Ref.	Mat'l	Archaeological Reference
TL Single dates:	145 ±210 BC (Dur86TLi)	TT1 pottery	TT 80 B 457
	515 ±275 BC	TT2 "	TT 80 B 13
	40 ±270 AD	TT3 "	TT 80 F 109
	570 ±260 BC (Dur86TLpd)	TT6 "	TT 81 A 109
	550 ±280 BC (Dur86TLi)	TT7 "	TT 81 C 876
	490 ±270 BC (Dur86TLpd)	TT8 "	TT 81 C 679
	40 ±160 AD (Dur86TLi)	TT13 "	TT 81 C 1632
	400 ±220 BC	TT14 "	TT 80 B 44
	240 ±260 BC	TT15 "	TT 80 D 118
	590 ±260 BC	TT16 "	TT 80 B 392
	700 ±270 BC	TT17 "	TT 80 B 390
	110 ±175 AD	TT18 "	TT 81 C 407 88

Archaeological Evidence: The TL date sequence forms a consistent group with one or two early outliers which may reflect the presence of residual material. Other artifactual evidence is available for the later periods of occupation and these provide dates which broadly agree with the TL results. The TL dates for the earlier periods suggest that this community in North Eastern England saw an intensification of arable agriculture and the evolution of a complex settlement type, developments previously associated with Southern and Central England. TT18 was included as a dating control, and the result agrees well with the date for the fabric; further discussion of averaging of dates can be found in the excavation report.

Site Director: Mr. D. Heslop, c/o Cleveland County Archaeology, Southlands Centre, Road, Middlesborough, Cleveland UK.

Reports: Bailiff I.K. (1984) TL dating of Iron Age/early medieval coarse-wares from north Britain. Unpublished TL Laboratory Report No.15, Archaeology Dept., Durham University.
 Heslop D. (1987) Excavation of an Iron Age settlement at Thorpe Thewles, Cleveland. *CBA Research Report 65*. (Includes TL report).

PART II
TECHNICAL SPECIFICATION

Section A. TL Measurements

I. Min(g) tech.(q; 90 - 150 µm)

Sample Ref.	P ± s.e. (Gy)	I/P	Slips	s Plateau	Peak*	Stability
TT1	7.28 ± 0.56	0.1	1.11 ± 0.10	± 5%; 360-390°	II; 10°/s; -	350-400°; 0.6s; 18°; 106±6(±e8)%*
TT2	7.23 ± 0.65	0	1.04 ± 0.09	± 5%; 380-425°	I "	
TT3	5.05 ± 0.58	0	1.11 ± 0.08	± 5%; 375-415°	II "	
TT7	7.70 ± 0.70	0.1	1.11 ± 0.13	± 3%; 375-425°	F "	
TT13	5.68 ± 0.18	0.4	1.09 ± 0.07	± 5%; 350-425°	III*	
TT14	6.23 ± 0.34	0.1	1.13 ± 0.07	± 5%; 375-425°	II "	
TT15	5.84 ± 0.50	0.2	1.13 ± 0.06	± 3%; 350-415°	II "	
TT16	8.53 ± 0.55	0.2	1.09 ± 0.06	± 3%; 330-400°	II "	
TT17	9.15 ± 0.80	0.1	1.00 ± 0.10	± 4%; 350-400°	I "	
TT18	5.49 ± 0.38	0.3	0.96 ± 0.07	± 6%; 350-400°	I "	

I. Min(g) tech.(pd; 90 - 150 µm)

Sample Ref.	P ± s.e. (Gy)	Procedure	TAC Peak	Init. sensitivity
TT6	6.80 ± 0.50	MA & ADD	550-575°C max; 10°/s	27% Sn; 40% uv rev; Sb=100%Sn; *
TT8	6.96 ± 0.70	MA & mod.ADD	525-575 °C max; 10°/s	25%Sn; 25% uv rev.; Sb=100%Sn; *

Section B. Dose-rate Measurements

Sample Water Ref.	Total Eff. Dose-rate	Dose-rate Components			Radon	Sample Env.
		α	β	γ		
	mGy/a	%	%	%	%	%
TT1	3.42 ± 0.12	-	63	33	4	11 ± 2 20 ± 4
TT2	2.89 ± 0.10	-	58	37	5	11 ± 2 "
TT3	2.60 ± 0.09	-	51	43	6	12 ± 2 "
TT6	2.66 ± 0.09	-	63	31	6	12 ± 2 "
TT7	3.24 ± 0.11	-	63	32	5	13 ± 3 "
TT8	2.81 ± 0.10	-	65	30	5	12 ± 2 "
TT13	2.92 ± 0.10	-	56	39	5	20 ± 4 "
TT14	2.61 ± 0.09	-	54	40	6	13 ± 3 "
TT15	2.63 ± 0.09	-	51	43	6	16 ± 3 "
TT16	3.31 ± 0.12	-	64	31	5	11 ± 2 "
TT17	3.41 ± 0.12	-	62	34	4	11 ± 2 "
TT18	2.93 ± 0.10	-	56	39	5	6 ± 1 "

Method: β-TLD CAP
 + α-c and XRF checks

Section C. Error [eA76]

PART II CONTD

Section D. TL Age			
Sample Ref.	TL Age a	Random a	Errors Overall a.
TT1	2130	165	210
TT2	2500	220	275
TT3	1945	220	270
TT6	2555	200	260
TT7	2535	220	280
TT8	2475	220	270
TT13	1945	100	160
TT14	2385	150	220
TT15	2235	210	260
TT16	2575	195	260
TT17	2685	200	270
TT18	1875	145	175

Special remarks

Peak: Peak classifications following Fleming(1970), with addition of type III* (Baillif, 1984) which is similar to type III (375 °C), but exhibits 2nd order behaviour.

Stability: Result represents average for all samples.

Ini. Sens.: Uncertainty associated with reversible part of S_0 included in error assessment.

Ref. Fleming, S.J. (1970) Thermoluminescent dating: refinement of the quartz inclusion technique. *Archaeometry*, 12(2), 133-145.