

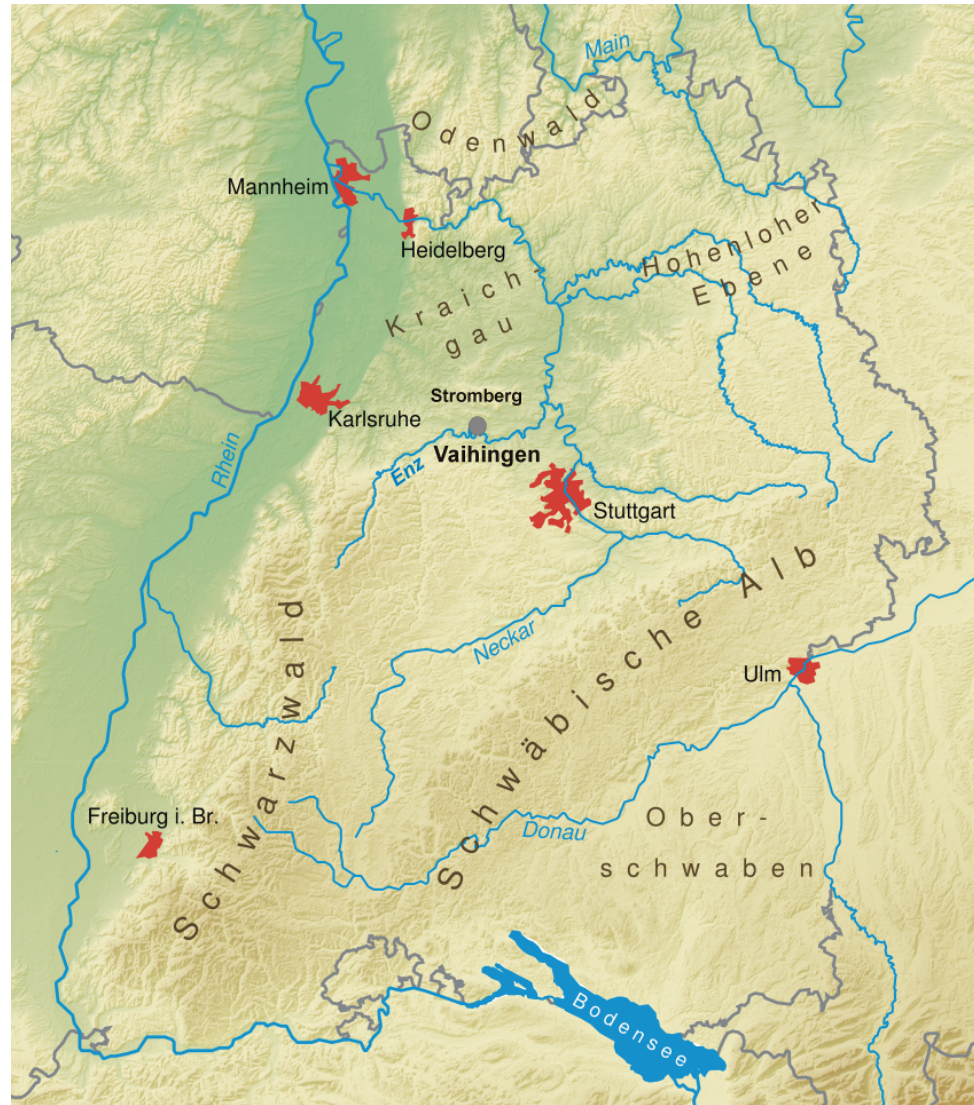


Fig 1



Fig 2

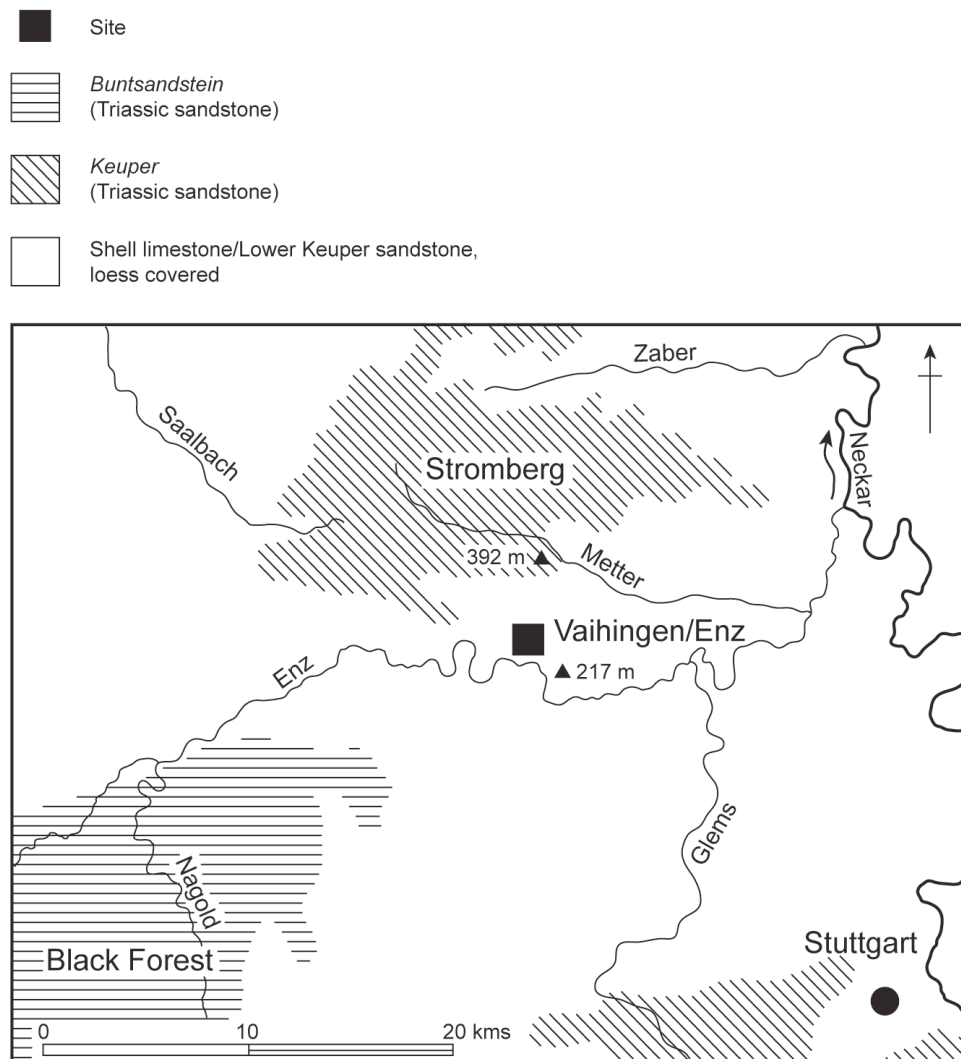


Fig 3

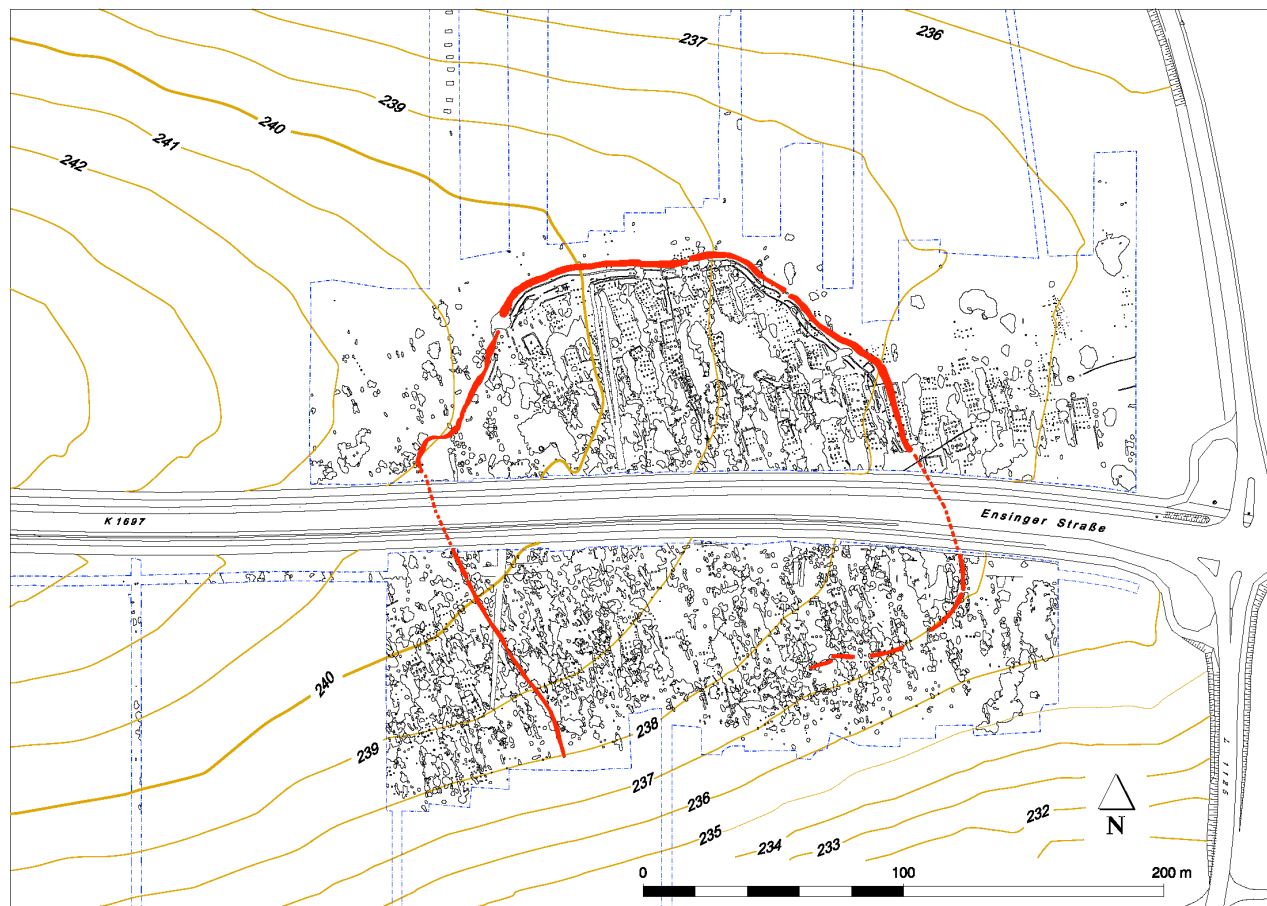


Fig 4

		Vaihingen		Mittlerer Neckar	Unterland/ Kraichgau	Ulm-Eggingen	Rhein/Maas
		Settlement	Cemetery				
5000				Hinkelstein			XV
5050		XVIII		8B	Hinkelstein		XIV
5100		XVII	Settlement burials	8A	8A	7	XIII
		XVI	Collective graves	7	7	6	XII
		XV		6	6	5	XI
5150		XIV		5	5	4	X
		XIII				3	IX
5200		XII	Cemetery			2	VIII
		XI	Collective graves	4	4	1	VII
5250		X		3	3		VI
		IX					V
5300		VIII	Earthwork	2B2	2B2		IV
		VII					III
5350		VI		2B1	2B1		III
		V					I
5400		IV		Transition	Transition		Niederkassel- Uckendorf
		III	Settlement burials	1D/2A	1D/2A		
5450		II		1C	1C		
		I		1B	1B		
5500							
5550							
5600							

Fig 5

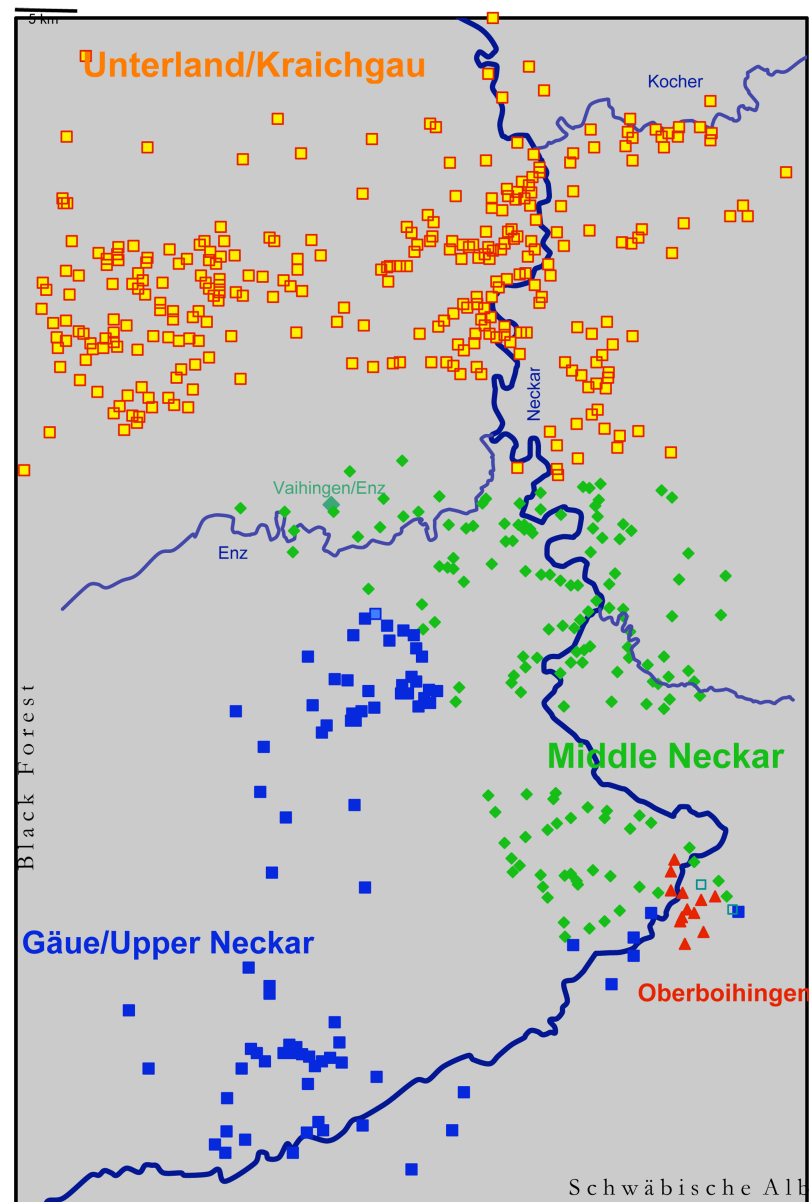


Fig 6

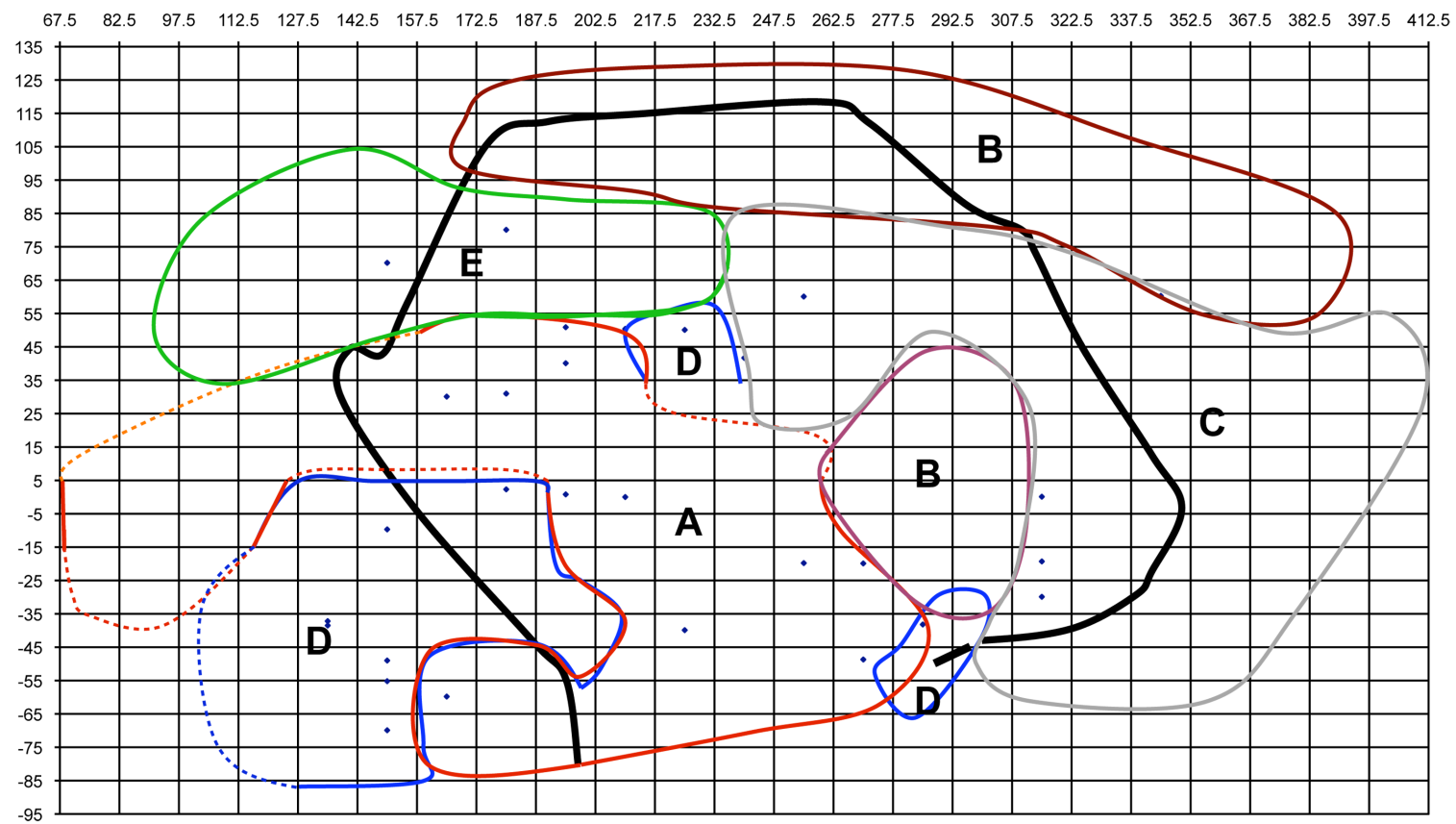


Fig 7

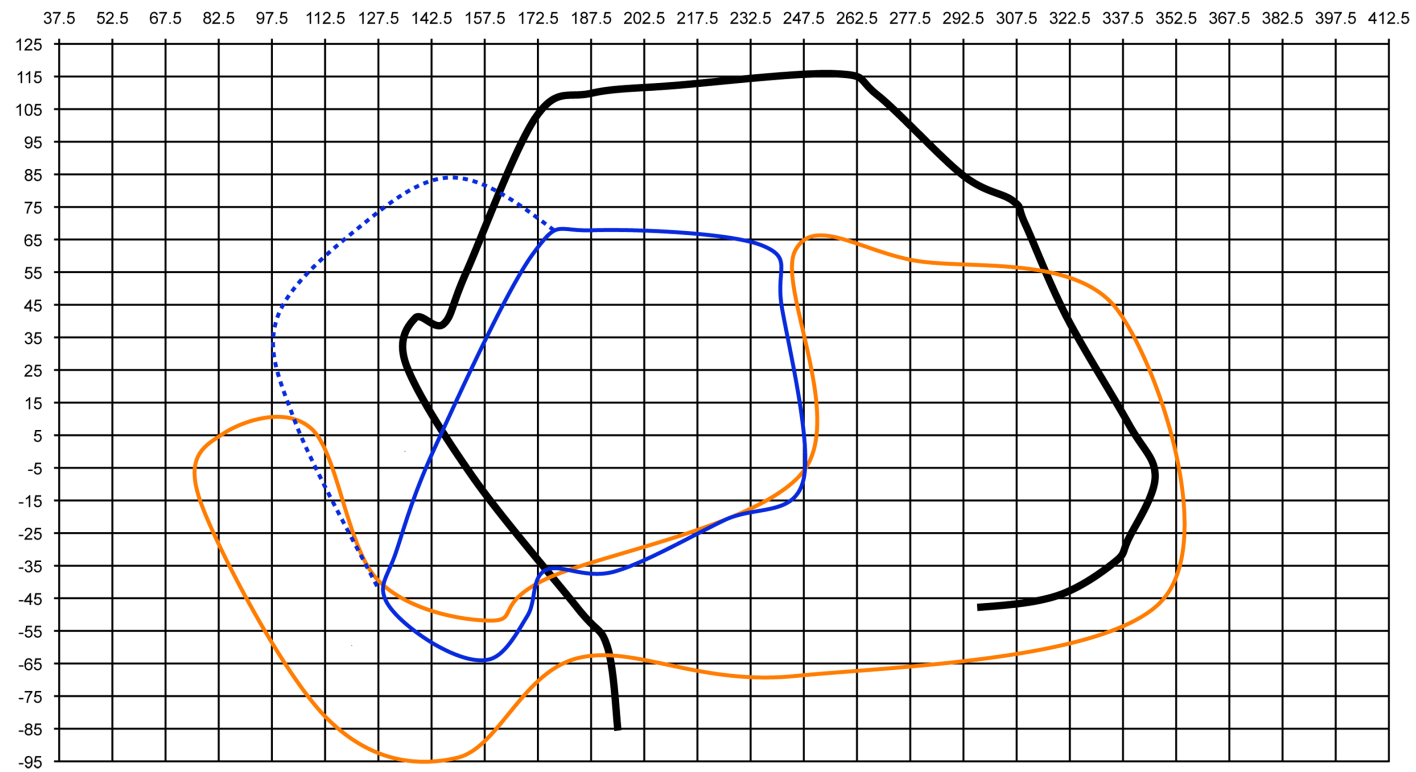


Fig 8

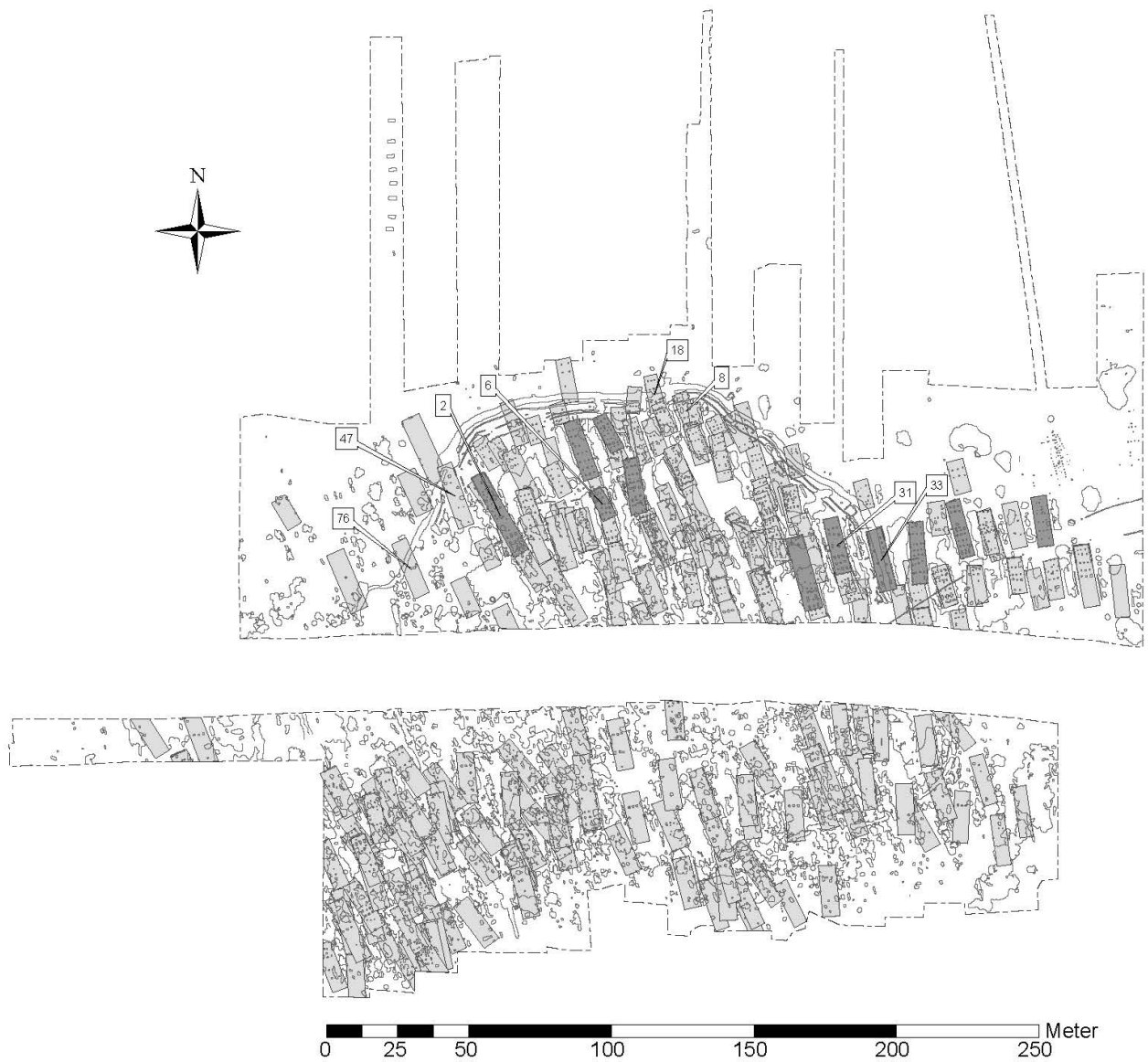


Fig 9

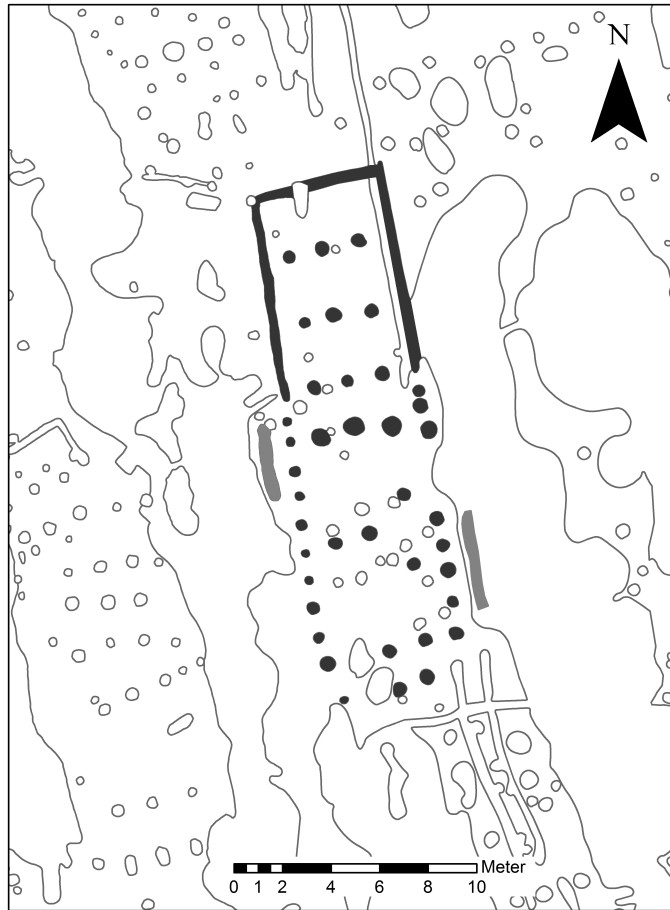


Fig 10

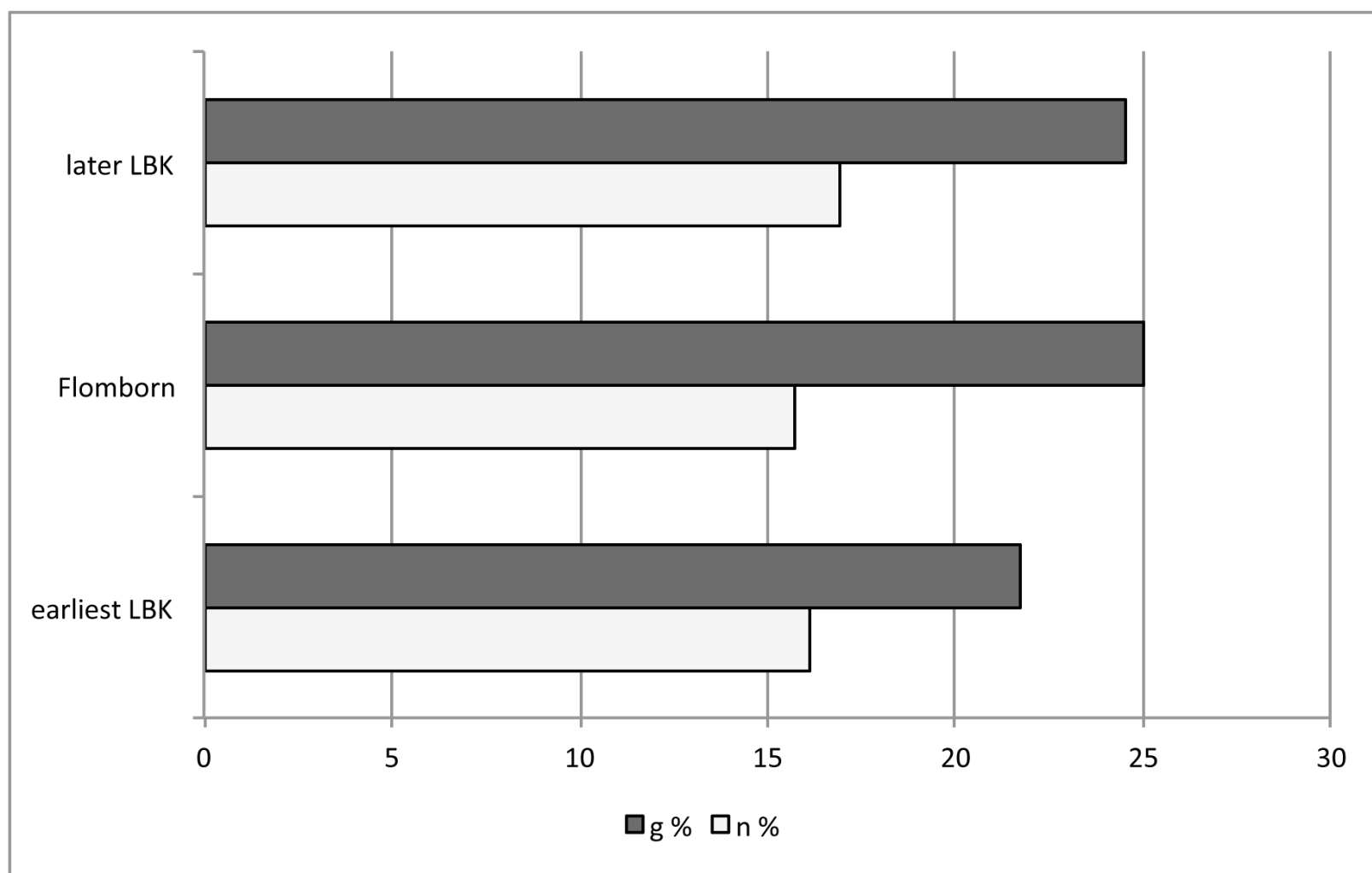


Fig 11

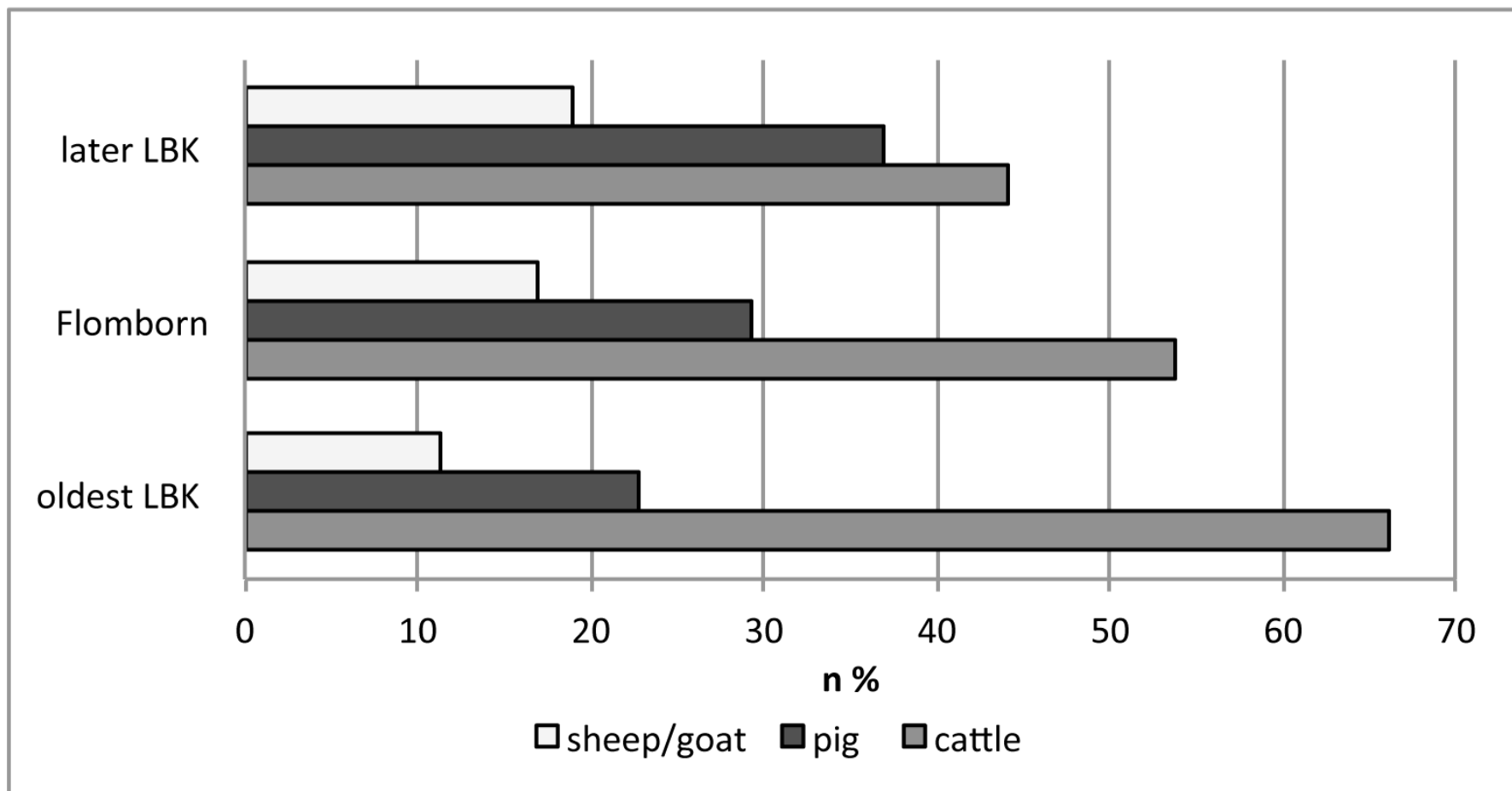


Fig 12

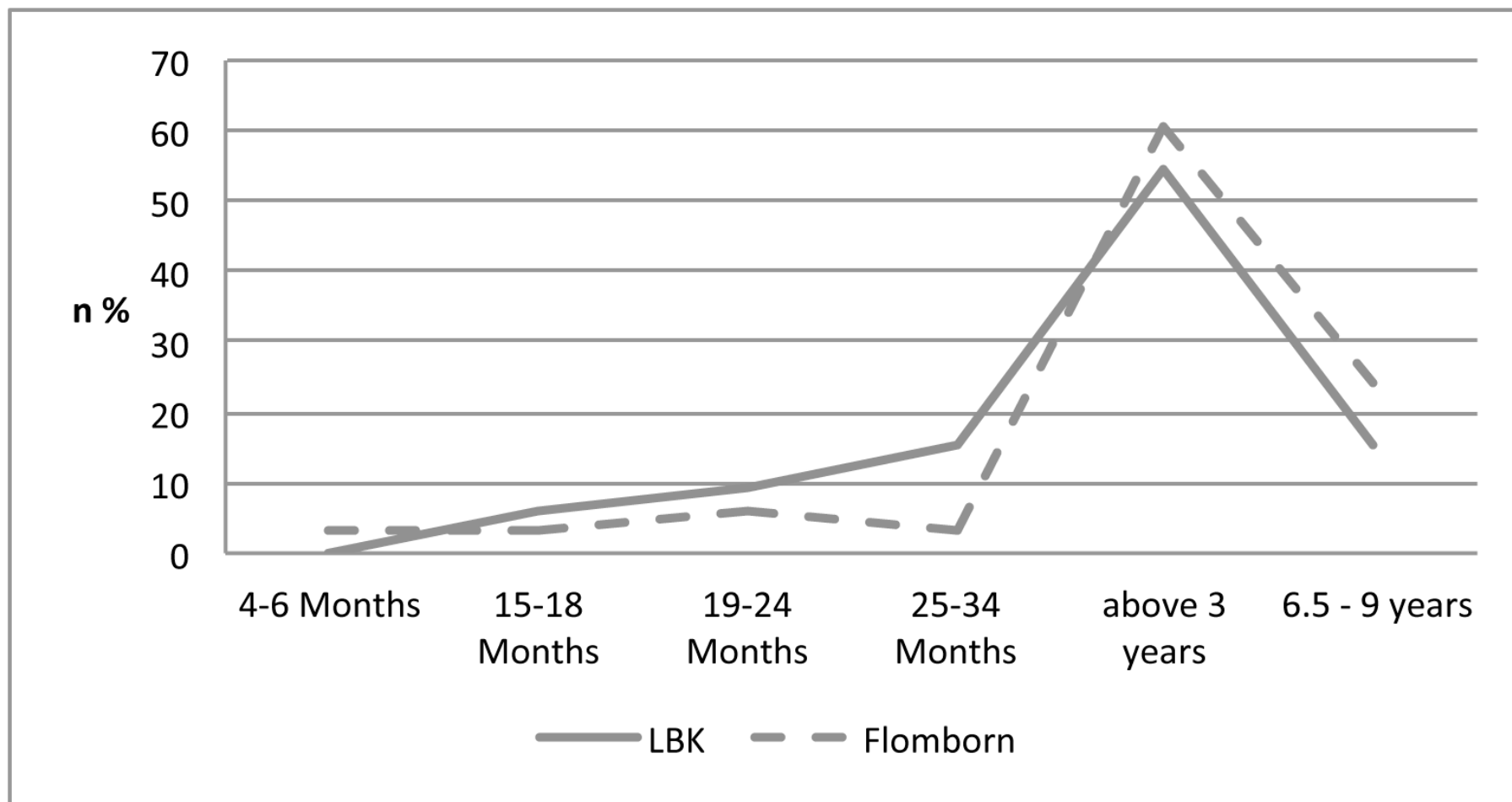


Fig 13

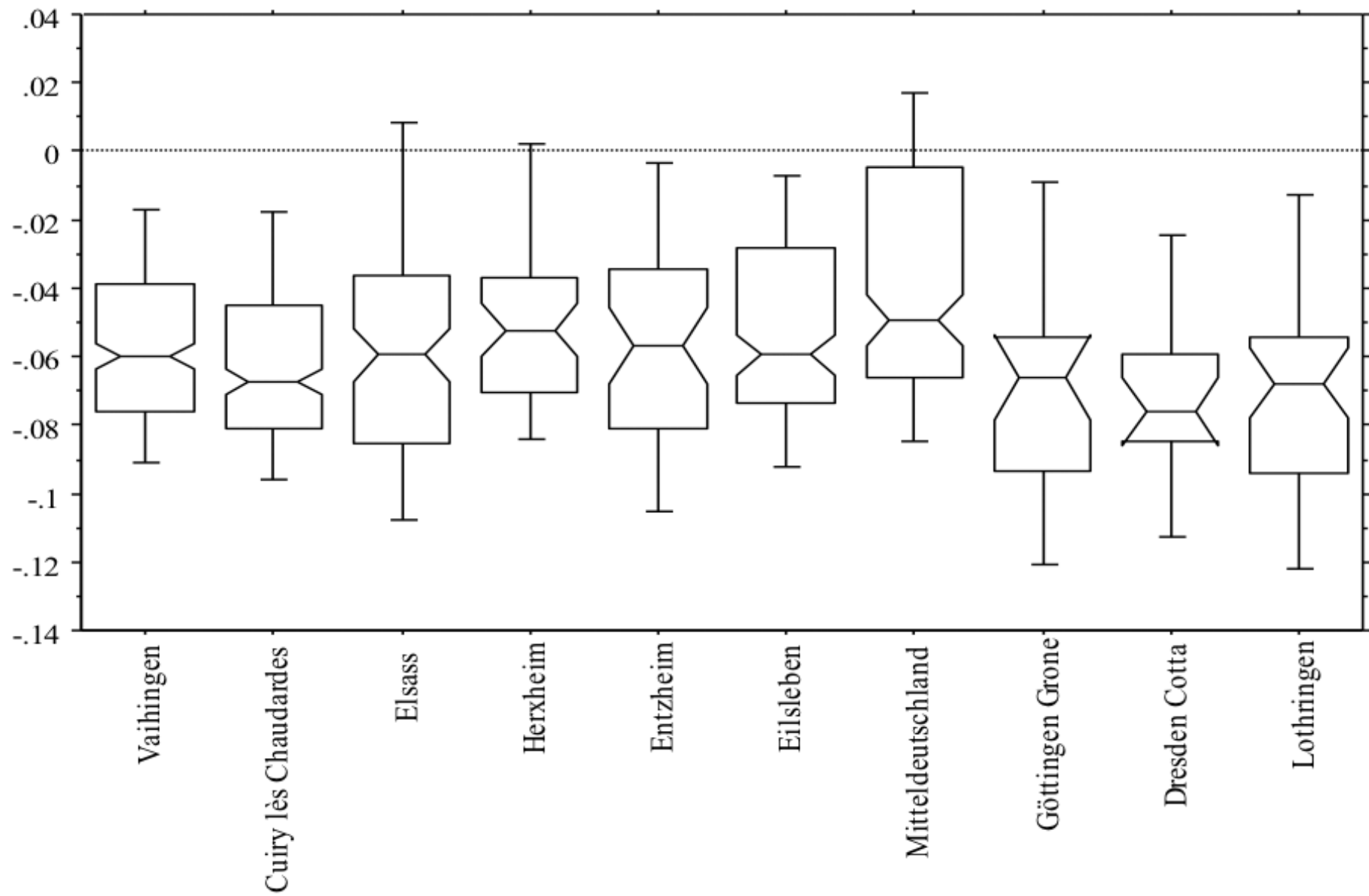


Fig 14

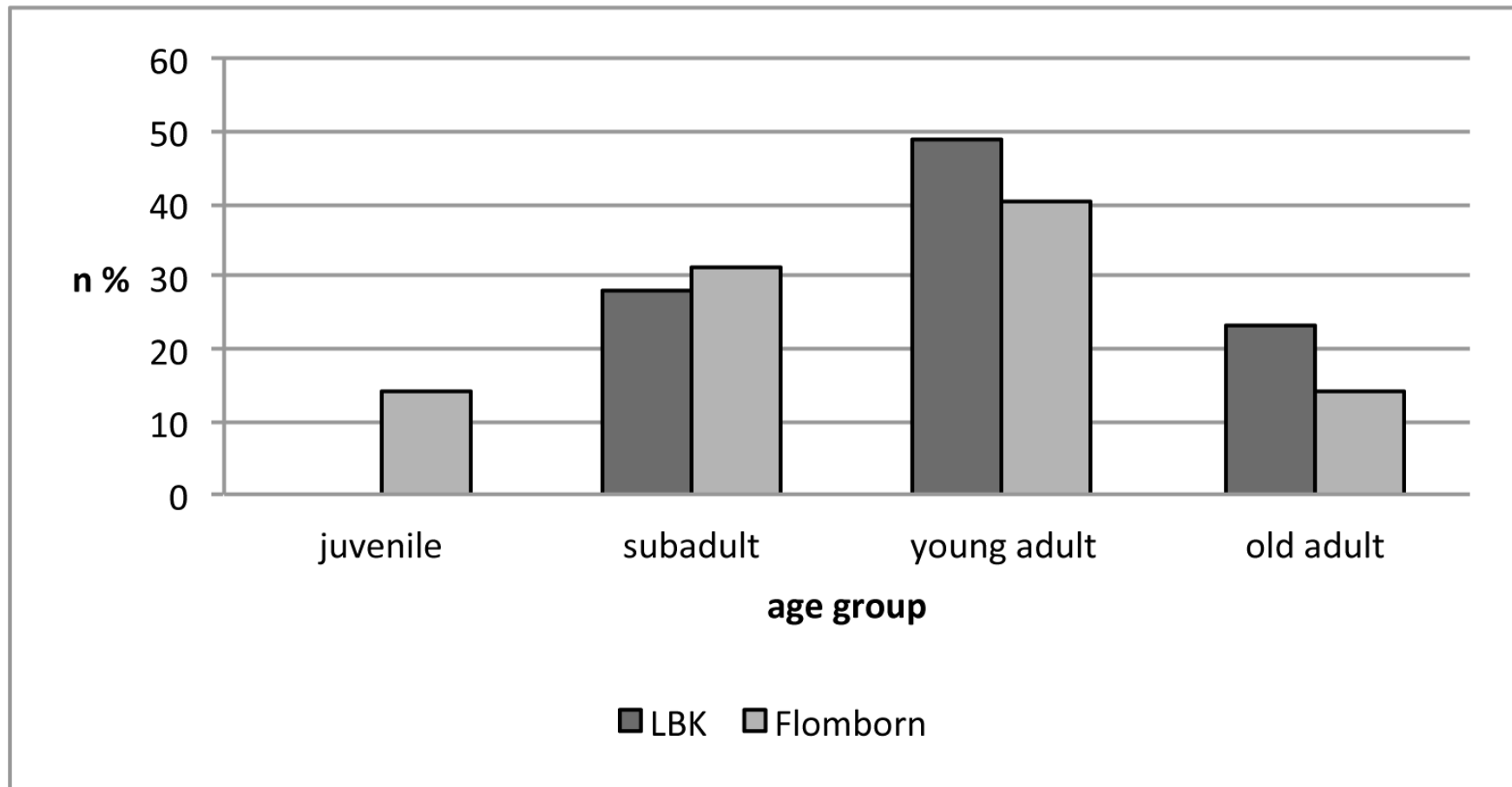


Fig 15

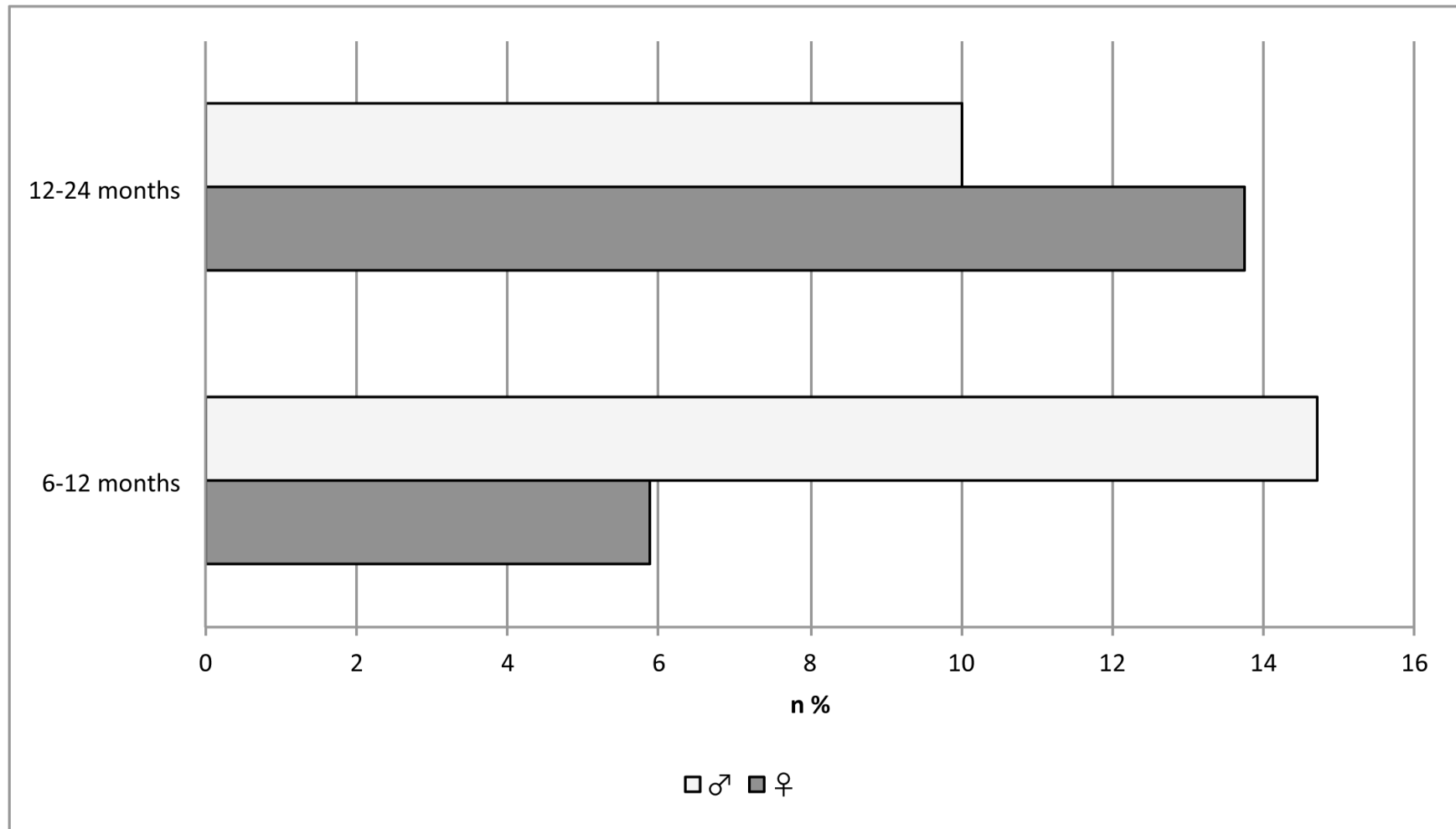


Fig 16

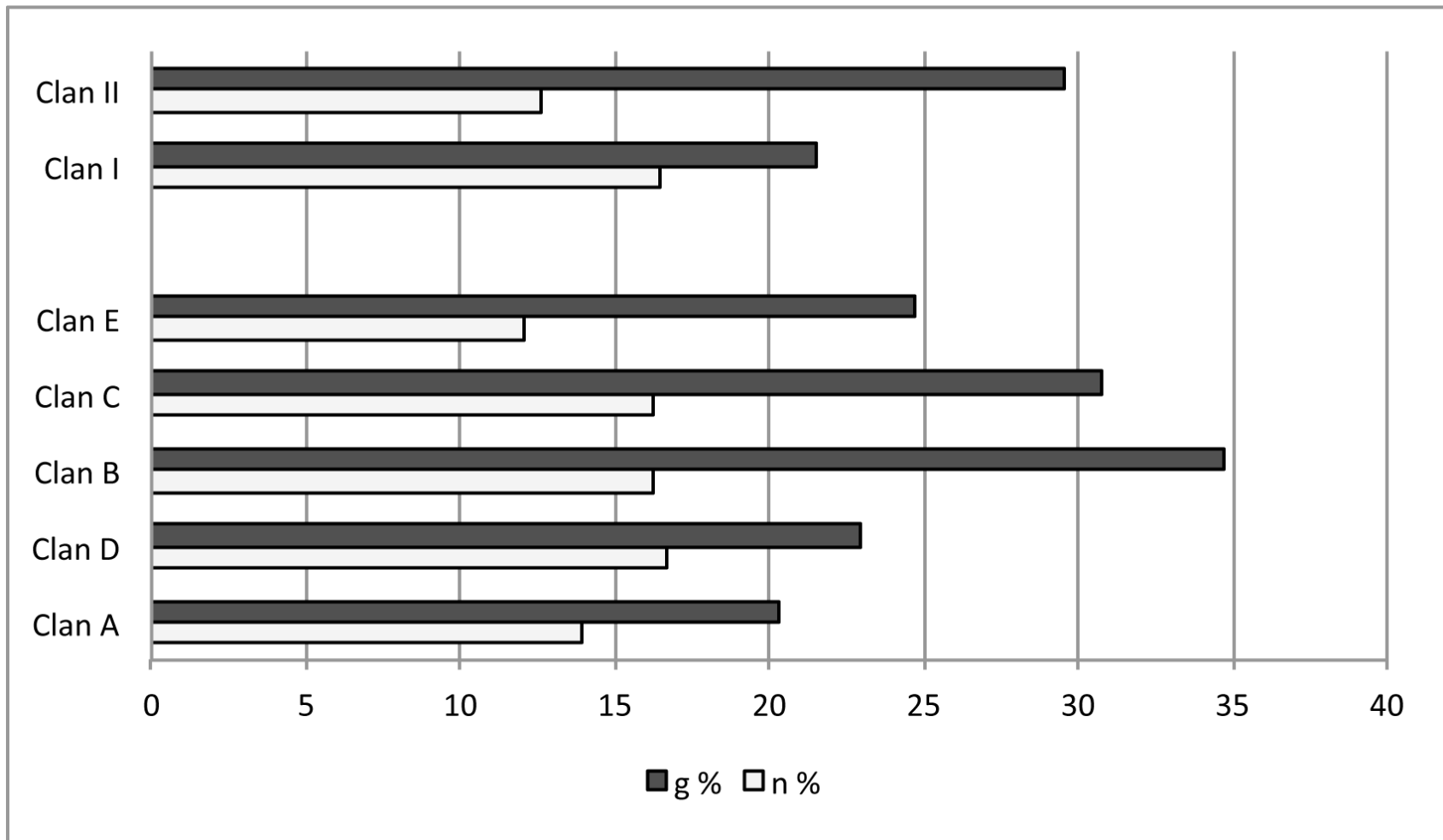


Fig 17

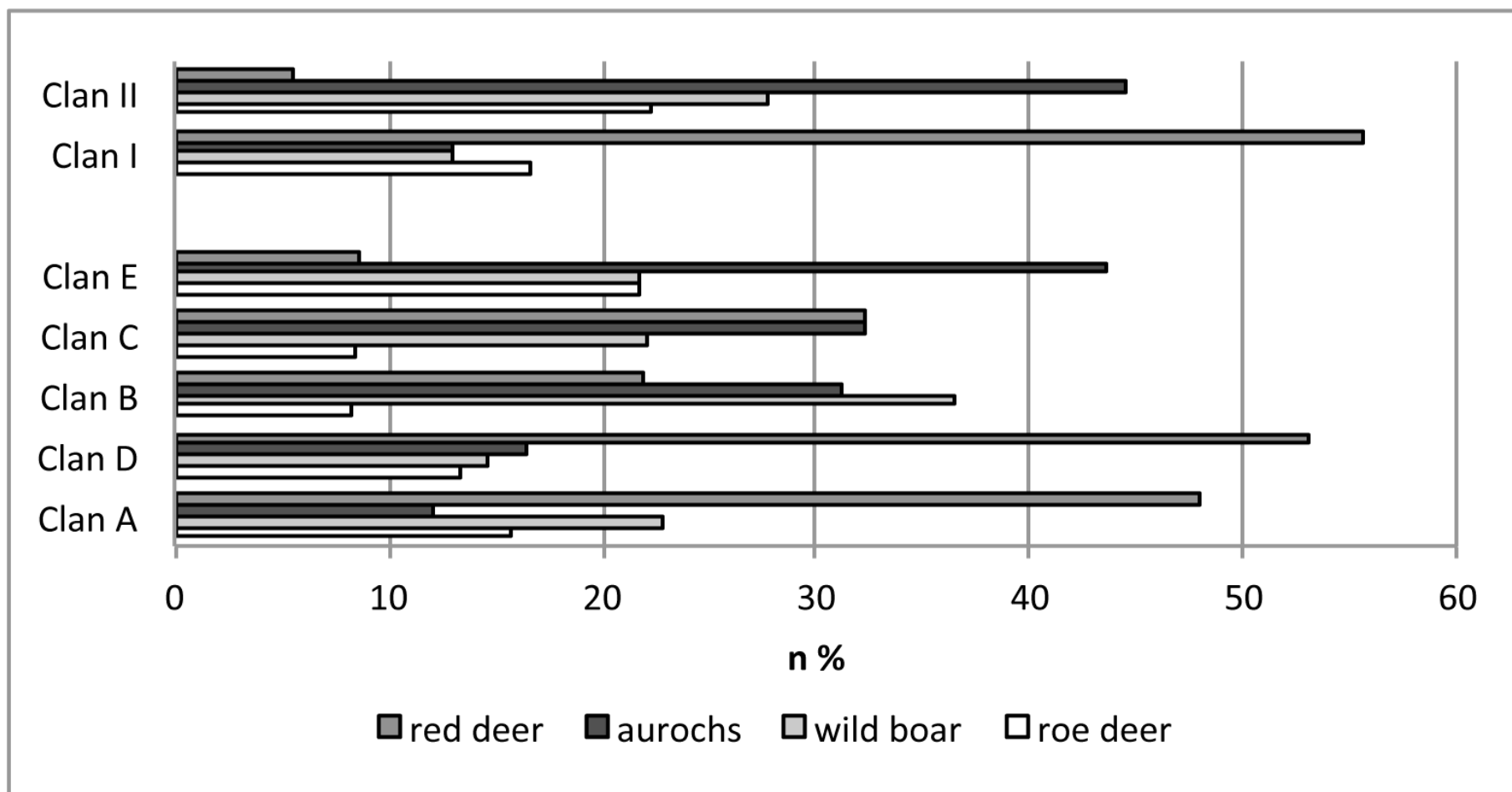


Fig 18

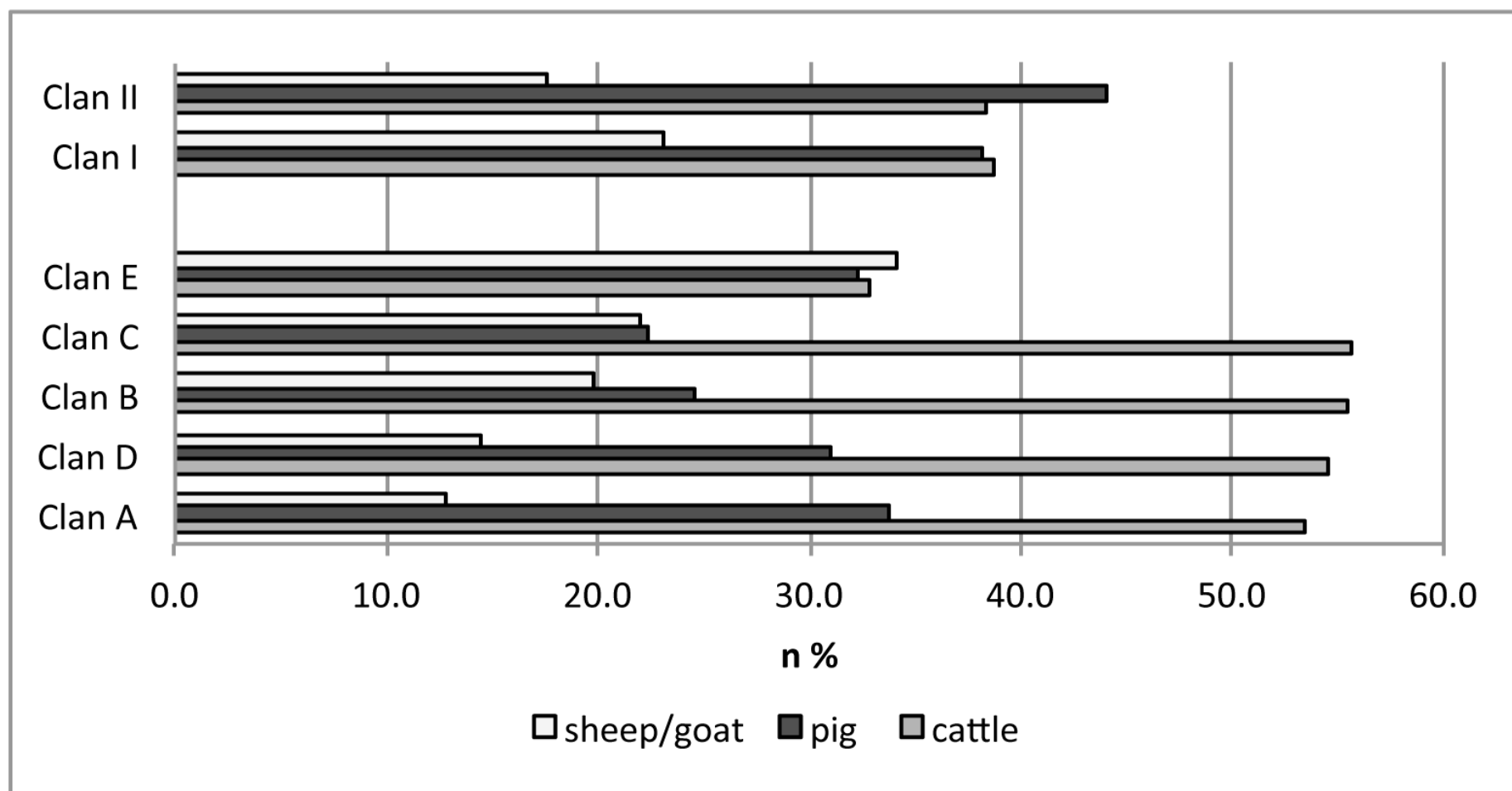


Fig 19

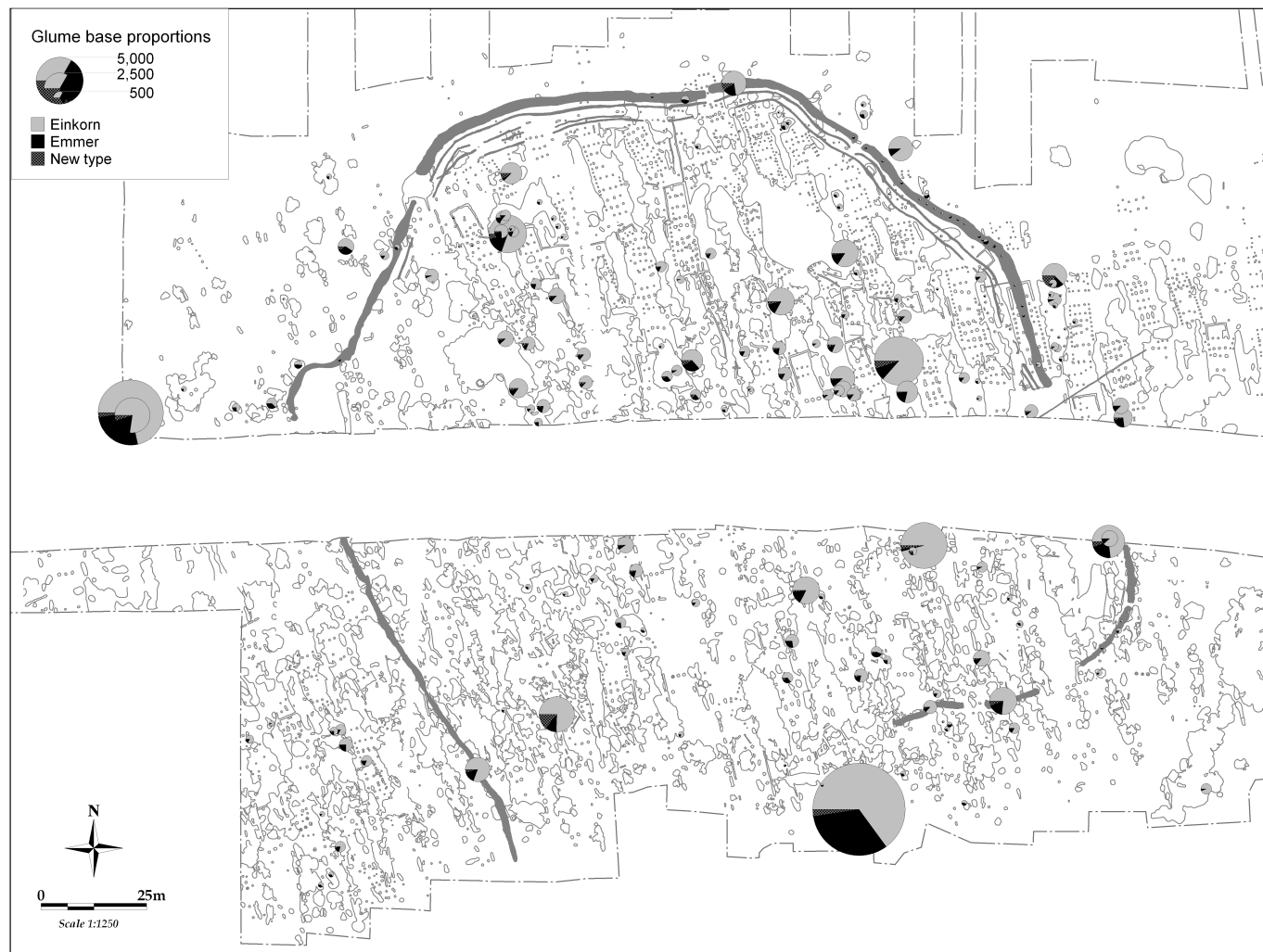


Fig 20

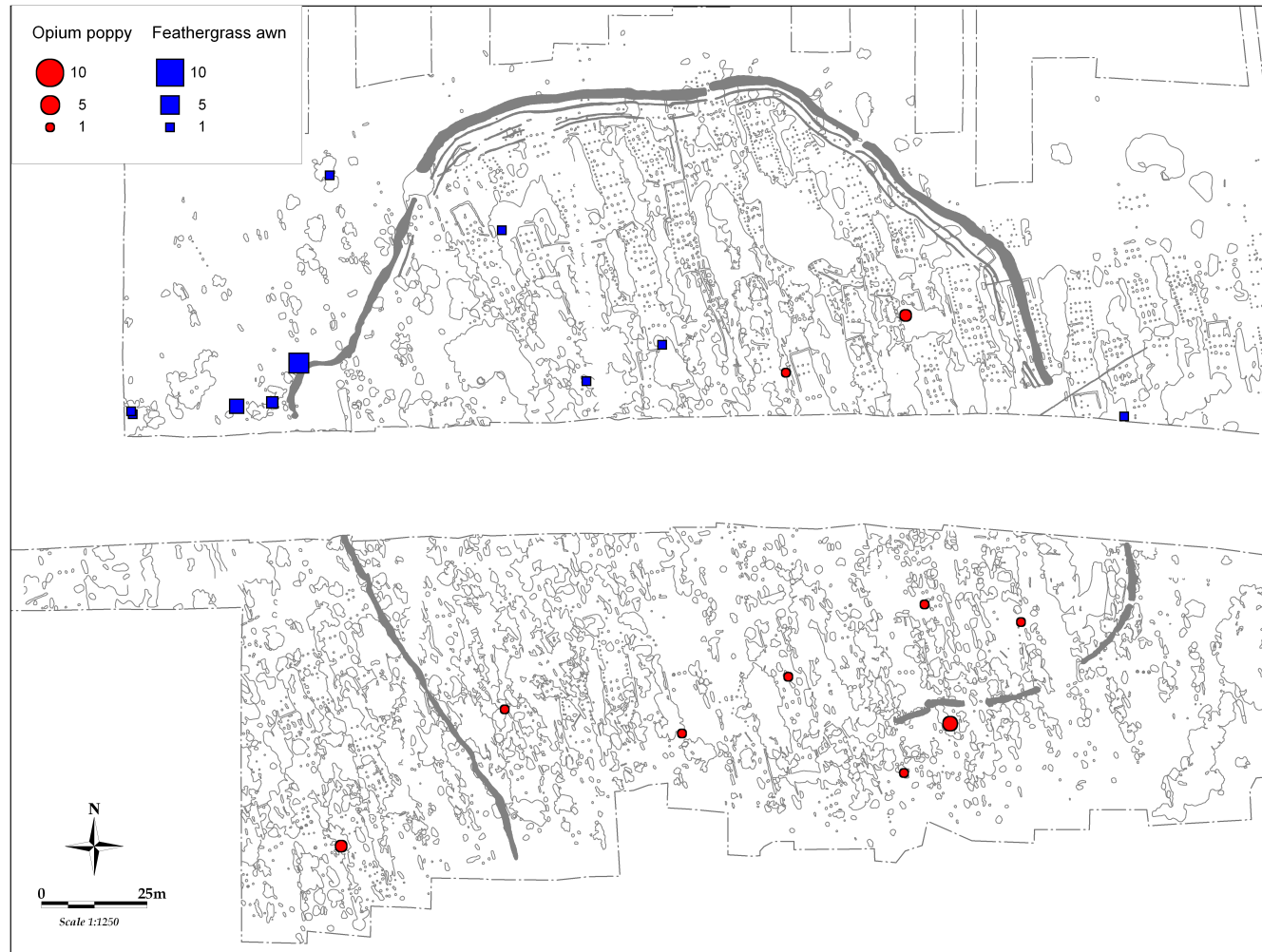


Fig 21

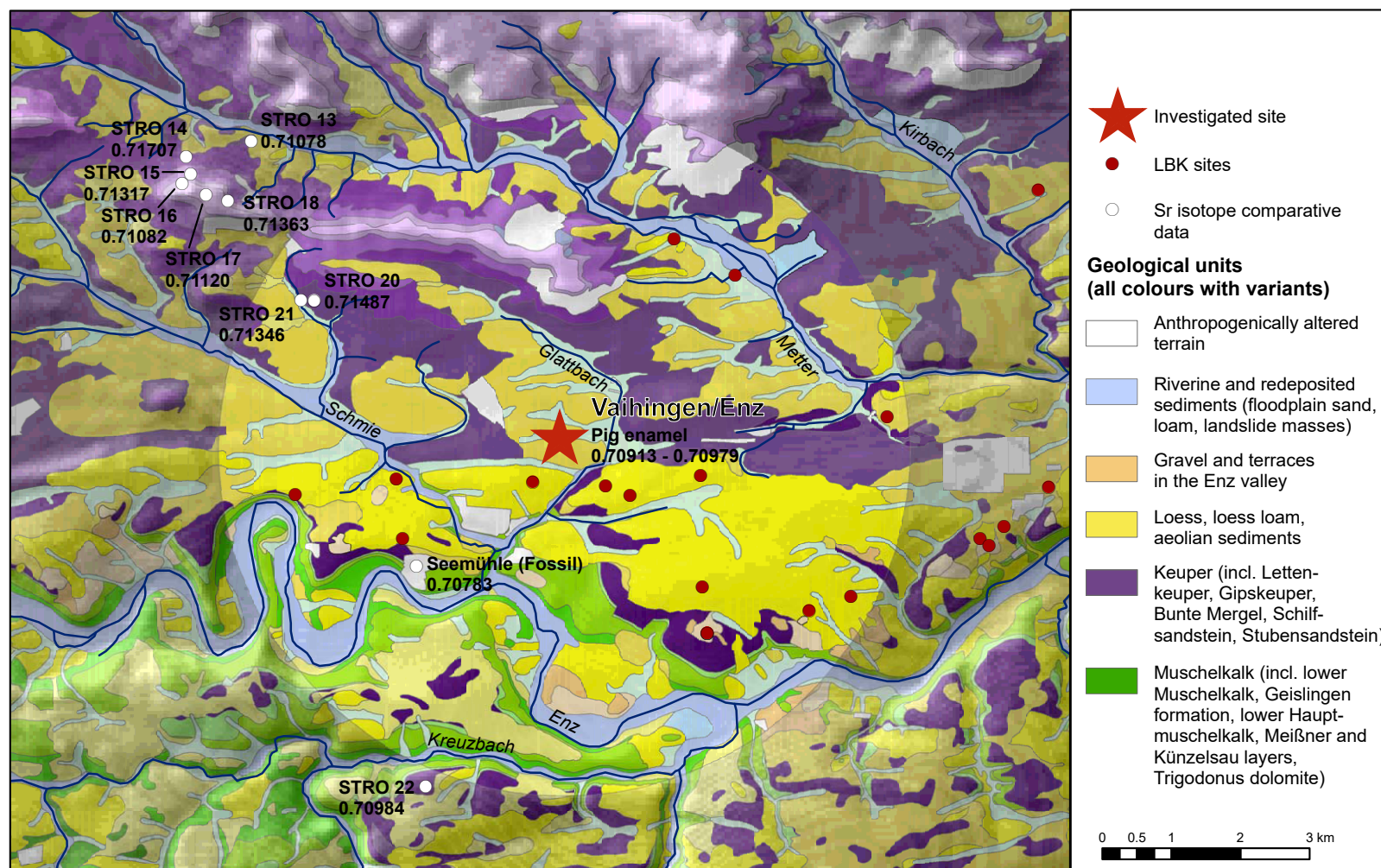


Fig 22

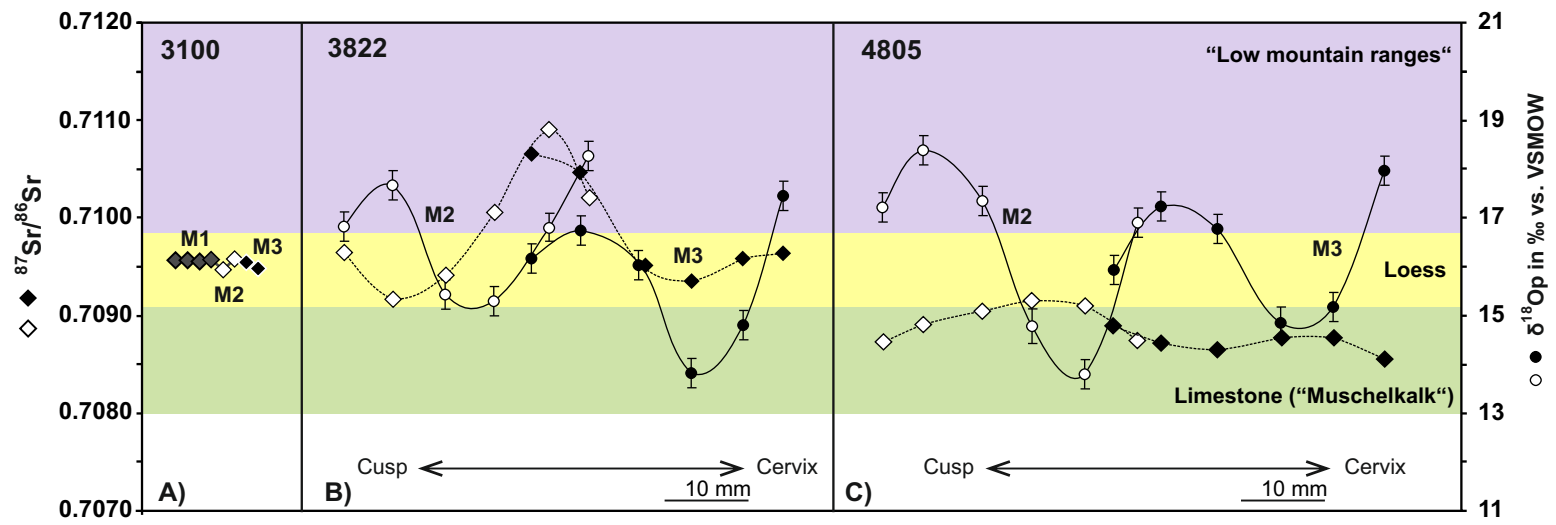
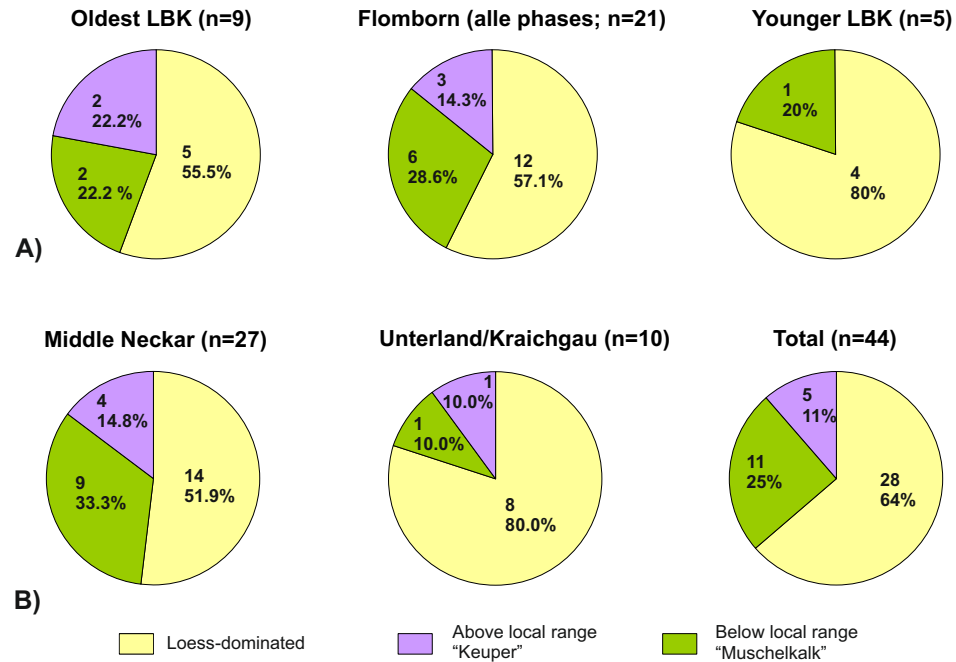


Fig 23

Sr isotope ratios in cattle teeth



Geological conditions in the surroundings of Vaihingen

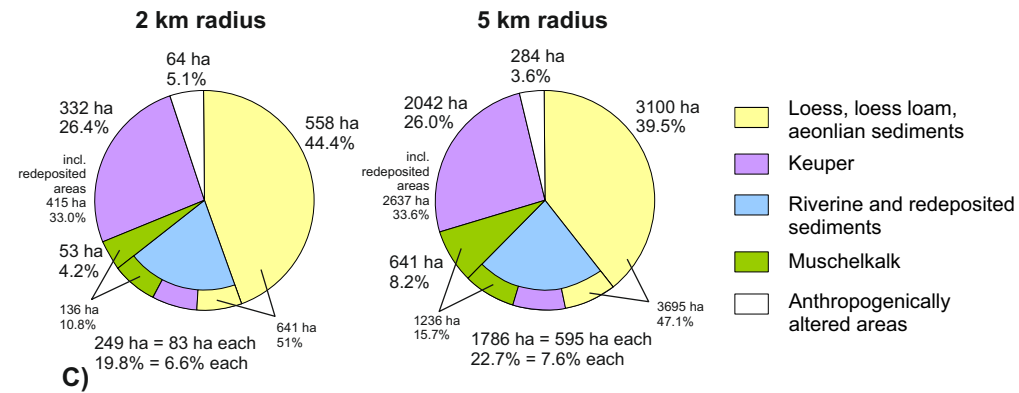


Fig 24

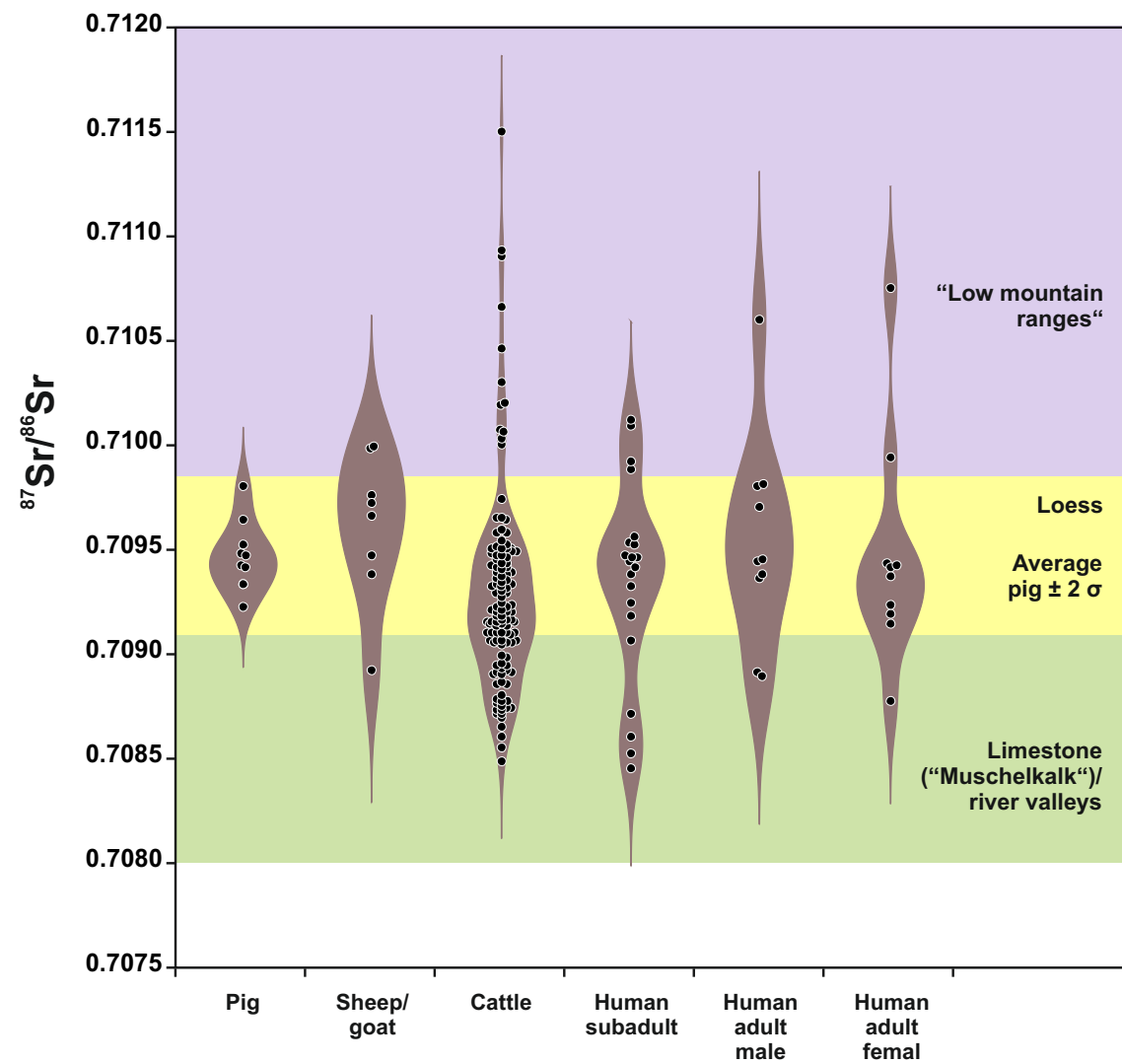


Fig 25

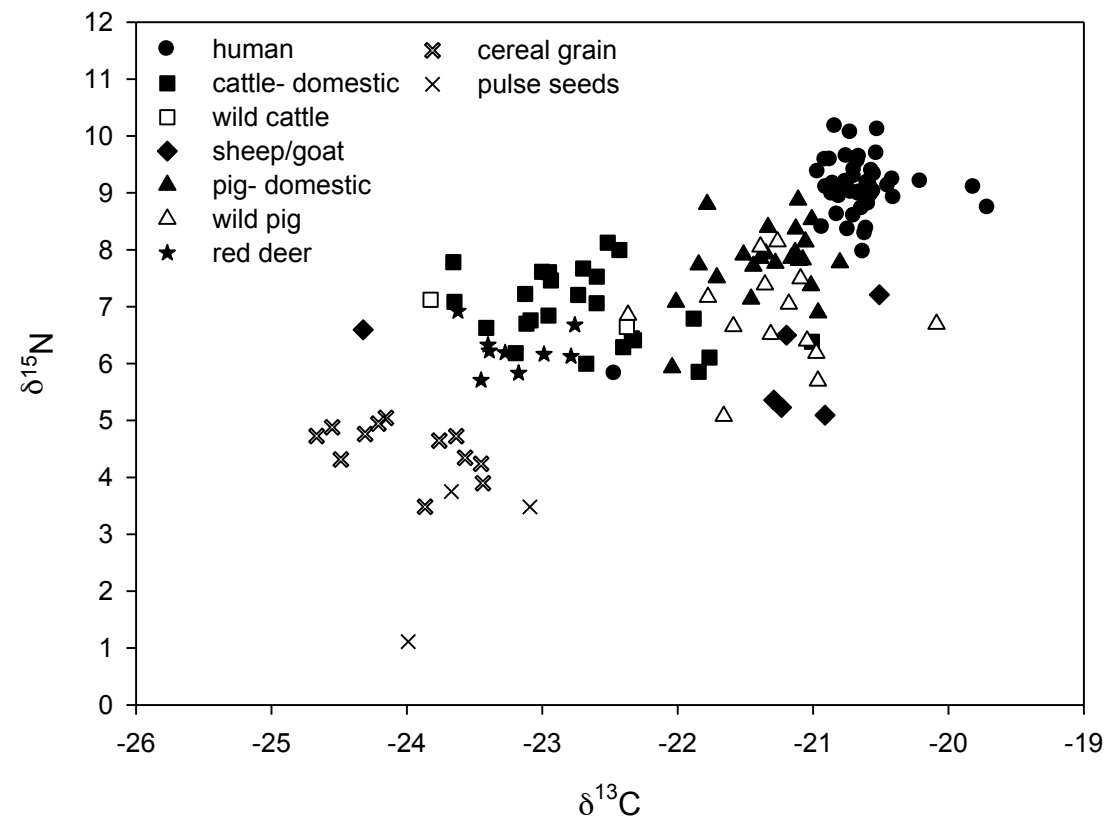


Fig 26

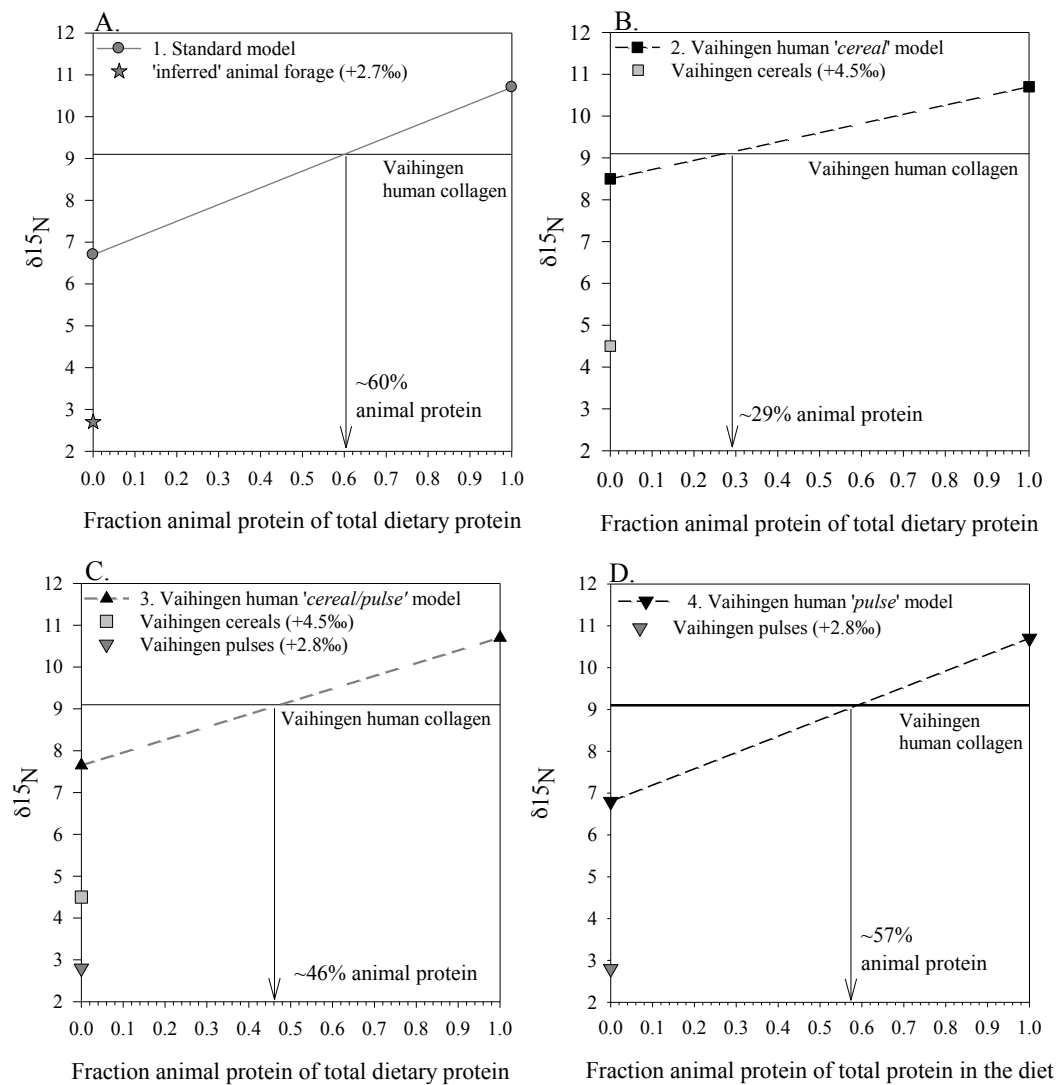


Fig 27

population		nutritional values		meat supply		cultivation	
households	40	calories (kcal/kg (l))		adult cattle (MNI)	15	lack of calories	1792.29
duration (y)	1	meat	2420	of them dairy cows (MNI)	0	lack of proteins (g/p/y)	30.41
inhabitants/house	8.0	fish	1000	juvenile cattle (MNI)	15	cereals (ha)	40.00
inhabitants total	320	milk	600	infant cattle (MNI)	10	cereal yield (kg/ha)	1500.00
field size (ha/p/y)	0.14	cereals	3300	slaughtering rate (%/y)	100	sum yield for consumption	60000.00
domestic animals/p/y	0.38	pulses	3400	pigs (MNI)	40	pulses (ha)	5.00
		oil fruits	680	sheep/goats (MNI)	40	pulses yield (kg/ha)	700.00
		hazelnuts	6700	wild animals (MNI)	10	sum yield pulses	3500.00
		other gathered species	600			oil plants (ha)	0.00
meat weight (kg for consumption)		protein (g/kg)		sum meat weight adult cattle	4125	oil plants yield (kg/ha)	0.00
meat weight adult cattle	275	meat	170	sum meat weight juvenile cattle	3000	sum yield oil plants	0.00
meat weight juvenile cattle	200	fish	180	sum meat weight infantile cattle	400	% of demand from domestic species	
meat weight infant cattle	40	milk	30	sum meat weight cattle	7525	sum (% domestic species)	
meat weight pigs	50	cereals	50	meat weight pigs	1000	cereals	84.76
meat weight sheep/goats	25	pulses	180	meat weight sheep/goats	1000	pulses	5.09
meat weight wild animals	50	oil plants	15	meat weight other mammals	500	oil plants	0.00
requirements (after WHO)		hazelnuts	100	meat weight fish	0	meat (domestic animals)	9.87
calories (p/d)	2000	other gathered species	20	sum meat weight	10025	milk	0.00
protein (g/p/d)	45			composition of diet (p/d)			
manpower		milk cattle			kg	kcal	Protein
		lactation (y/ind)	0.00	cattle diet	0.06	155.91	10.95
full-time workers (n)	120	lactation period (d/y)	0.00	pigs diet	0.01	20.72	1.46
half-time workers (n)	200	milk yield (l/ind/d)		sheep/goats diet	0.01	20.72	1.46
working day (h/d)	8	milk sheep/goats		sum meat (domestic animals)	0.08	197.35	13.86
ha cultivated total	45	lactation (y/ind)		wild animals diet	0.00	10.36	0.73
domestic animals total	120	milk yield (l/ind/d)		fish diet	0.00	0.00	0.00
expenditure for fields (h/m2)	0.25	milk yield sum	0.0	milk diet	0.00	0.00	0.00
cultivation hours total	112500.00	milk diet (l/p/d)	0.00	cereals diet	0.51	1695.21	25.68
cultivation days per year	117.19			pulses diet	0.03	101.88	5.39
(full-time workers only)		gathering: hazelnuts		oil plants/others diet	0.00	0.00	0.00
agricultural period (d/y)	180.00	lack of calories (p/d)	0.00	<i>Site: Vaihingen</i>			
balance cultivation	62.81	lack of protein (p/d)	0.00	<i>phase: Flomborn Phase 2B2</i>	sum diet	2004.80	45.67
		harvest of hazelnuts		<i>state: Baden-Württemberg</i>			
harvest time total (d)	200.00	quantity (kg/p/d)	0.00	<i>source: div. Authors</i>	percentage of demand	100.24	101.49
harvest time per worker (d/y)	1.67	hazelnuts diet (kcal/p/d)	0.00	gathering: other species			
		hazelnuts sum (kg/y)	0.00	lack of calories (kcal)	0.00	remarks:	
harvest time for hazelnuts (d)	30	h/0.5p/y harvest hazelnuts	0.00	diet gathered species (kg/p/d)	0.00	calculation without cultivated oil plants	
harvest time for other species (d)	135					and milk use	
hazelnuts yield kg/h	0.20	hazelnuts (% of demand)	0.00	other gathered (% of demand)	2.80		

Fig 28

Fig 29

		Vaihingen					
		Settlement	Cemetery				
				Domestic fauna	New plant taxa	Weeds	Cattle grazing (Sr+O)
5000	Later			cattle and pig co-dominant	opium poppy and feathergrass	high intensity	loess; little river valley and no upland grazing
5050		XVIII					
		XVII	Settlement burials Collective graves				
5100		XVI					
		XV					
5150		XIV					
	XIII		pig and small ruminants increasing		variable intensity	mixed loess, river valley and upland grazing	
5200	XII	Cemetery Collective graves					
	XI						
5250	X						
	IX						
5300	VIII	Earthwork					
	VII						
5350	VI						
	V						cattle strongly dominant
5400	IV	Settlement burials					
	III						
5450	II						
	I						
5500							

			Wild fauna	Domestic fauna	Weeds	Special plants	Cattle grazing (Sr+O)		
L A T E R	Middle Neckar	I	red deer	pig and cattle	high intensity	opium poppy	loess, valley and uplands		
		II	aurochs			feathergrass			
F L O M B O R N		A	red deer	cattle and pig		?			
		D							
	Unterland/Kraichgau	B	wild boar and aurochs	cattle and sheep/goat	low intensity		loess		
		C							
		E	aurochs	sheep/goat and cattle	?				

Fig 30