THE MOLLUSCS FROM C261 CROSSRAIL – EIP/TBM CHAMBER, PUDDING MILL LANE, LONDON E15, LONDON BOROUGH OF NEWHAM (XSK10)

Alan Pipe

Osteology
Museum of London Archaeology

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1. Introduction and methodology

Wet-sieving and flotation of bulk samples from XSK10 produced diverse assemblages of terrestrial and freshwater mollusc species from the 'flot' fractions of five samples; [9] {3}, [10] {5}, [11] {6}, [11/12] {7} and [12] {8}. Preliminary identifications were made in an attempt to establish general faunal composition of each of these sample groups and to determine the potential for further identification to species level in order to provide ecological information on local habitats and conditions. Preliminary identification followed Cameron & Redfern 1976; and Macan 1977. Preliminary interpretation followed Kerney 1999. This short report summarises the molluscan faunas for each sample in terms of the number of identifiable species present, although identification to species or genus level was only done when the remains were particularly visually distinctive. Table 1 shows all identified and potentially identifiable species for each sample.

2. The fauna

Samples [9] {3}, [10] {5}, [11] {6}, [11]/[12] {7} and [12] {8} produced a diverse invertebrate fauna composed entirely of molluscs, particularly freshwater bivalves and snails; with a much smaller and somewhat less diverse assemblage of terrestrial snails.

Terrestrial molluscs provided less than 10% of the shell count and derived from two main snail groups; wetland (including amphibious) snails and true terrestrial species of moist, sheltered conditions; all the identified species are widely-distributed in suitable habitats throughout S E England. Marsh whorl snail *Vertigo antivertigo* is a terrestrial mollusc abundant and widespread in moist, sheltered habitats throughout southern Britain (Kerney 1990, 143-6); it is a lowland wetland species mainly avoiding places with marked fluctuations in water level (Kerney 1990, 92). Amber snails in the family Succineidae are widespread wetland species found in damp, sheltered conditions throughout lowland Britain; they are virtually amphibious and able to tolerate long periods of submersion (Kerney 1990, 75-9). Shiny glass snail *Zonitoides nitidus* is a characteristic wetland species typically found on emergent vegetation at the edges of rivers. It is virtually amphibious and can survive long periods of flooding (Kerney 1990, 148). Herald or sedge snail *Carychium minimum* occurs in wet places generally; it is virtually amphibious and can survive prolonged winter flooding (Kerney 1990, 44). The 'true' terrestrial snail fauna includes glass snail *Oxychilus sp,* slender herald snail *Carychium tridentatum*, moss snail *Cochlicopa sp* and rounded or radiated snail *Discus rotundatus* all of which are widely-distributed species abundant in moist, sheltered situations throughout SE England.

Freshwater species provided the bulk, at least 90%, of the, of the mollusc shell count. The assemblage included at least two species of bivalve, probably pea shell *Pisidium sp*, common valve snail *Valvata piscinalis*, flat valve snail *Valvata cristata*; at least five species of ram's-horn snail Planorbidae including keeled ram's-horn *Planorbis carinatus*, twisted ram's-horn *Bathyomphalos contortus*, button or white-lipped ram's-horn *Anisus leucostoma* and whirlpool ram's-horn *Anisus vortex*, at least two species of pond snails Lymnaeidae including common or wandering pond snail *Lymnaea peregra;* common bithynia *Bithynia tentaculata,* Leach's bithynia *Bithynia leachii* and river nerite *Theodoxus fluviatilis*. All the identified freshwater snail species are common in still and slow-flowing, calcium-rich waters throughout SE England, although both the Planorbidae and Lymnaeidae show considerable *inter*-specific differences in terms of their ecological requirements, particularly vegetation, water

quality and substrate. In contrast, common/wandering pond snail is ubiquitous in freshwater habitats of all kinds (Kerney 1990, 56).

Table 1: Wet-sieved/floated mollusc shell XSK10/preliminary identifications

3. Potential for further work

Species Identification of all mollusc species in samples [9] {3}, [10] {5}, [11] {6}, [11/12] {7} and [12] {8} will allow interpretation of conditions indicated by each sample, particularly in terms of substrate, vegetation, water flow, water chemistry and quality and liability to seasonal desiccation, and will clearly highlight any ecological differences between the sample groups. Further Identification will follow Cameron & Redfern 1976; and Macan 1977. Ecological interpretation will follow Davies 2008; Kerney 1990; and Killeen, Aldridge & Oliver 2004.

4. Resource requirements

Task 1: Identification of all unidentified terrestrial and freshwater species	0.50 pday
Task 2: Preparation of ecological interpretation report	0.50 pday
TABLE	**1.00 pday**

5. Bibliography

Cameron, R A D, & Redfern, M, 1976 British land snails
Linnean Society of London synopses of the British fauna no.6

Davies, P, 2008 *Snails: archaeology and landscape change*
Oxford. Oxbow Books

Kerney, M, 1999 *Atlas of the land and freshwater molluscs of Britain and Ireland*
Colchester. Harley Books

Killeen, I; Aldridge, D; & Oliver, G, 2004 Freshwater bivalves of Britain and Ireland
Field Studies Council occasional publication 82

Macan, T T, 1977 A key to the British fresh- and brackish-water gastropods
Freshwater Biological Association scientific publication no.13

6. Table

Table 1: Wet-sieved/floated mollusc shell from XSK10/preliminary identifications

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CONTEXT	**COMMON NAME**	**[9]**	**[10]**	**[11]**	**[11]/[12]**	**[12]**	**HABITAT**
SAMPLE		**{3}**	**{5}**	**{6}**	**{7}**	**{8}**	
TERRESTRIAL							
Discus rotundatus	rounded/radiated snail	x		x	*x*	x	moist/sheltered
Zonitoides nitidus	shiny glass snail	x		x			wetland/amphibious
Carychium minimum	herald/sedge snail		x				wetland/amphibious
Carychium tridentatum	slender herald snail			x	x		moist/sheltered
Oxychilus sp.	glass snail		x	x	x		moist/sheltered
Vertigo antivertigo	marsh whorl snail		x				wetland
Cochlicopa sp.	moss snail			x			moist/sheltered
Succineidae	amber snail				x		wetland/amphibious
FRESHWATER							
bivalve species 1		x	x	x	x		freshwater
bivalve species 2				x	x		freshwater
Lymnaeidae	pond snails	x			x		freshwater
Lymnaea peregra	common/wandering pond snail			x			freshwater/ubiquitous
Valvata piscinalis	common valve snail	x		x	x		slow-flowing/still/muddy
Valvata cristata	flat valve snail		x		x		slow-flowing/still/muddy/oxygenated
Planorbidae	ram's-horn snails	x	x	x	x	x	freshwater
Planorbis carinatus	keeled ram's-horn	x		x	x	x	slow-flowing/still/vegetated
Bathyomphalos contortus	twisted ram's-horn	x		x			slow-flowing/still
Anisus leucostoma	button/white-lipped ram's-horn	x		x	x		slow-flowing/still
Anisus vortex	whirlpool ram's-horn			x			slow-flowing/oxygenated
Bithynia tentaculata	common bithynia	x	x	x	x	x	slow-flowing/oxygenated
Bithynia leachii	Leach's bithynia			x			slow-flowing/oxygenated
Theodoxus fluviatilis	river nerite	x		x			flowing/oxygenated

x PRESENT IN SAMPLE