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THREE POST MEDIAEVAL BURIALS FROM SCHOOL STREET, IPSWICH, SUFFOLK, EXCAVATED 1983-85.

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Summary

Three adult inhumations (2 females, 1 male) of Post-Mediaeval date were recovered from the School Street site.

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THREE POST-MEDIAEVAL BURIALS FROM SCHOOL STREET, IPSWICH, SUFFOLK EXCAVATED 1983-85

Introduction to the site

In addition to the burials from the 10th-11th century cemetery (Mays 1989) and those from the Mediaeval friary (Mays nd), 3 burials of Post-Mediaeval date were also recovered from the School Street site. Two supine burials orientated west-east were located adjacent to one another; both showed evidence for interment in coffins. A crouched burial lying on its right side with the head to the east was also excavated.

The human remains

Context: Burial 1170. Inhumation with evidence for a coffin. Orientation W-E, burial located to the south of the site of the Blackfriars church choir; likely to be of post-dissolution date.

Material: Preservation moderate, skeleton 80%+ complete.

Sex: Male (Workshop of European Anthropologists 1980).

Age: Probably 50+ (dental wear - Brothwell 1981; cranial suture closure - Perizonius 1984; pubic symphyseal morphology - Suchey et al. 1987).

Dental formula:

*	*	.	X	*	X	*	X	*	*	X	*	*			
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
*	*	*	.	X	X	*	*	*	*	X	X	.	*	*	*
											C				
			LEFT							RIGHT					

Key: .=tooth in socket X=tooth lost post-mortem, socket present *=tooth lost ante-mortem C=caries A=abscess T=loose tooth present (socket missing or damaged post-mortem

Dental calculus deposits of (Dobney & Brothwell's (1987) grade I severity.

Stature: 174.1cm (5'9") (Trotter & Gleser 1952, 1958).

Notes: There is a raised area of bone, 4-5cm long, on the medial border of the L tibia, in the midshaft region of the bone. The surface of the lesion is pitted and the area around it is longitudinally striated. Probably periostitis sequential to local trauma.

L5 shows spondylolysis. This is the condition where the posterior part of the neural arch is cleft from the rest of the

vertebra at the pars interarticularis. In skeletal material the posterior part of the neural arch appears as a separate fragment (although it is missing in the present case), however in life it is bound to the rest of the vertebra by fibrous tissue. The fibrous union between the 2 parts of the vertebra may be ruptured by trauma, leading to forward slippage of the vertebral body - spondylolisthesis. This seems to have occurred in 1170: the body of the 5th lumbar vertebra is fused to the 1st sacral segment, and is displaced forwards by about 1.5-2cm. There is slight lipping at the left sacro-iliac joint, and severe osteoarthritis of both hip joints with eburnation of weight bearing areas. These degenerative changes are probably sequential to the awkward gait induced by the displacement of the body of L5 (Amuso & Mankin 1967). It seems that there is strong inherited component to spondylolysis (e.g. Wynne-Davis & Scott 1979).

Cribra orbitalia takes the form of pitting or perforations in the orbital roofs. Burial 1170 showed lesions of Brothwell's (1981: Fig. 6.17) porotic type. It seems probable that cribra orbitalia is associated with anaemia (Hengen 1971; Stuart-Macadam 1987). Iron deficiency anaemia is the most common anaemia in all parts of the world (Steinbock 1976). In addition to dietary deficiency intake of iron, iron deficiency anaemia can be caused by gut parasites, frequent in unhygienic conditions which were doubtless prevalent in antiquity.

Many joints show osteoarthritic changes and many vertebrae show osteophytosis (see Appendix).

Context: Burial 1172. Inhumation with evidence for a coffin. Orientation W-E. Located to the south of the site of the Blackfriars church choir adjacent to, and likely to be contemporary with, burial 1170.

Material: Skeleton poorly preserved, 40-60% complete.

Sex: Female (Workshop of European Anthropologists 1980).

Age: About 25-40 (cranial suture closure - Perizonius 1984 and pubic symphyseal morphology - Suchey et al 1988).

Dental formula:

						C	C								
						T	T								
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8

LEFT RIGHT

Key: .=tooth in socket X=tooth lost post-mortem, socket present *=tooth lost ante-mortem C=caries A=abscess T=loose tooth present (socket missing or damaged post-mortem

Stature: 160.0cm (5'3") (Trotter & Gleser 1952, 1958).

Notes: The second lumbar vertebra shows a compression fracture of its body in the fairly early stages of healing; the centrum is wedged anteriorly. The inferior border of the third lumbar vertebra shows osteophytosis, and there is a pitted area on the anterior border of the superior surface of the fourth lumbar vertebra: probably anterior herniation of the disc between the third and fourth lumbar vertebrae, probably caused by the same trauma episode which caused the compression fracture of the second.

Context: Burial 1367. Post-dissolution interment located on the site of the Blackfriars church choir. The skeleton lay in a crouched position on its right side with the head to the east.

Material: Well preserved skeleton 80%+ complete.

Sex: Female (Workshop of European Anthropologists 1980).

Age: 21-25 (epiphysial fusion - Workshop of European Anthropologists 1980; Pubic symphyseal morphology - Suchey et al. 1986; cranial suture closure - Perizonius 1984).

Dental formula:

```
      A   A                 A
    C C   C               C C   C
. . . . . . X . . . . . . . . . . .
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8
X . . . . . . . . . . . . * * .
A C C   C C C     C C C C     C
    A
      LEFT           RIGHT
```

Key: .=tooth in socket X=tooth lost post-mortem, socket present *=tooth lost ante-mortem C=caries A=abscess T=loose tooth present (socket missing or damaged post-mortem

Stature: 161.3cm (5'4") (Trotter & Gleser 1952, 1958).

Notes: There is considerable wear on anterior teeth, with some worn to their roots. This degree of wear on the anterior dentition is in contrast with the light enamel wear on the posterior teeth, and is unusual for an individual who almost certainly died in her early twenties.

Although dental caries must be considered a multifactorial disease, many studies have shown a strong correlation between caries rates and consumption of carbohydrates, particularly sugars. It was in the 17th century that imports of sugar into Britain began to increase markedly and, in addition, improved methods of milling led to bread being made from increasingly refined flour. Diet thus contained more low molecular weight

carbohydrates and was softer and stickier. Thus skeletal remains from this period onwards generally show greatly increased rates of dental caries, with cavities tending to originate on the occlusal surfaces of the teeth (Moore & Corbett 1978, 1983). In 1367 the caries cavities are rather large, destroying considerable areas of the dental crown; it is thus in most cases impossible to determine their point of origin on the teeth. However, although it is risky to infer too much from a single skeleton, the severity of the dental caries in 1367, particularly taking into account the young age at death of this adult, suggests that this interment dates to the period from the 17th century onwards when diets tended to be much more cariogenic than in the Mediaeval period.

There is porosis of interdental septa and some show concave profiles; in addition there is slight alveolar resorbtion. These changes are probably a result of periodontal disease. This is an inflammation of the gums and other periodontal tissues associated with poor oral hygiene (Costa 1982).

The 12th thoracic vertebra has lumbar-type facet joints.

There is a pit 5x2mm & 2mm deep lined with trabecular bone on the proximal joint surface of the left ulna. Probably osteochondritis dissecans. Osteochondritis dissecans is the death of a section of sub-chondral of the joint with eventual cleavage away from the dead fragment, which forms a loose body in the joint. The precise aetiology is obscure but trauma seems to play a part. The elbow is a frequent site for lesions (Jacobs 1976).

The proximal parts of the tibiae and the R fibula are bowed laterally. The distal parts of the femora are bowed anteriorly. The changes are much more marked on the R leg bones. The R tibia is thickened transversely and its inter-osseous border is more pronounced than that on the L tibia. The R femur is thickened anterior-posteriorly compared with the L femur, and in both femora the linea asperae are very pronounced. The bones are rather light and poorly mineralised.

This appears to be a defect of bone mineralisation, mainly confined to the R leg-bones. Healed rickets is one possible diagnosis, but the changes observed are insufficient to justify a firm diagnosis, and in addition, the asymmetry of the changes is atypical of rickets.

There is green staining on the L mandibular condyle and the R distal fibula.

There os cribra orbitalia of Brothwell's (1981) cribriotic type (see notes for 1170).

There are 2 depressed lines on most anterior teeth; these are dental enamel hypoplasias. Dental enamel hypoplasias form during the development of the enamel crown during childhood and are associated with a wide variety of stressors, including infectious diseases and nutritional deficiencies (Pindborg 1970: 138-210). The location of the defects on the dentition of 1367 suggests that the stress episodes giving rise to them occurred when the individual was about 3.7 and 4.1 years (using the methodology of Goodman et al. 1980).

The inferior surface of the body of the 10th and the superior surface of the body of the 11th thoracic vertebra each show a pit. These lesions represent Schmorl's nodes. An intervertebral

disc consists of a tough outer layer (the annulus fibrosus) surrounding an inner core (the nucleus pulposus) which, until young adulthood, is composed of semi-gelatinous material. In younger individuals excessive compression of the spine, as might result through heavy lifting, may result in extrusion of material from the nucleus pulposus into the adjacent vertebral body. The bony manifestation of this is a pit or cleft - the Schmorl's node. In some individuals congenital weakness in the cartilaginous end plate of the vertebral body may predispose to Schmorl's node formation but there is no doubt that a single trauma may produce a Schmorl's node in a normal spine (Schmorl & Junghanns 1971: 150-168).

Summary and discussion

All 3 individuals are adults, 2 females, 1 male. The stature, general build and, insofar as it can be assessed, cranial morphology of these individuals is not markedly different to that of the Mediaeval skeletons interred in the Blackfriars complex excavated on the School Street site. The severity of the dental caries suffered by burial 1367 (a young adult) is certainly atypical of the pattern seen in the Mediaeval burials from the site; perhaps this suggests that 1367 consumed a more cariogenic diet.

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APPENDIX: DATA FOR INDIVIDUAL BURIALS

CRANIAL MEASUREMENTS

SKEL	GOL	XCB	BBH	BNL	XFB	FMB	PAC	MDH	FRC	ASB	WNB	OBB	OBH
1170	183.0	141.0	128.0	97.0	125.0	-	107.0	28.9	111.0	109.0	8.4	-	-
1367	-	-	-	-	107.0	85.9	113.3	-	107.5	103.6	9.5	38.5	32.2

Key: the symbols are those of Howells (1973)

LONGBONE LENGTHS

SKEL	LFeL1	RFeL1	LTiL1	RTiL1	LFiL1	RFiL1	LHuL1	RHuL1	LRaL1	RRaL1	LUlL1	RUlL1	LClL1	RClL1
1170	469	464	383	382	-	-	-	-	251	255	273	277	149	159
1172	-	433	332	339	-	-	-	-	-	-	-	-	-	-
1367	-	-	344	-	-	-	-	-	232	-	247	-	-	-

Key: the symbols are those of Brothwell (1981).

MISCELLANEOUS POST-CRANIAL MEASUREMENTS

SKEL	LHHD	RHHD	LHEW	RHEW	LFHD	RFHD	LFeD1	LFeD2	RFeD1	RFeD2	LFeE1	RFeE1	LTiD1	LTiD2	RTiD1	RTiD2
1170	-	-	65.1	64.2	-	-	-	-	26.8	33.5	-	-	38.7	25.0	37.1	25.1
1172	41.6	-	-	-	-	-	-	-	-	-	-	-	31.5	26.0	32.1	25.6
1367	-	-	54.7	56.9	-	-	25.8	31.7	-	-	-	-	26.6	19.9	25.5	26.7

Key: L=left R=right HHD=maximum humeral head diameter HEW=humeral epicondylar width FHD=vertical diameter of the femoral head. Otherwise abbreviations from Brothwell (1981).

SPINAL OSTEOPHYTOSIS

SKEL	Cervical grades				Thoracic grades				Lumbar grades			
	0	1	2	3	0	1	2	3	0	1	2	3
1170	0	0	1	4	0	0	10	1	1	2	1	0
1172	0	0	0	0	0	0	0	0	3	1	0	0
1367	6	0	0	0	12	0	0	0	5	0	0	0
*** Total ***												
	6	0	1	4	12	0	10	1	9	3	1	0

GRADE I OSTEOARTHRITIS

1170: MED RCLAVICLE, P LHUMERUS, P RHUMERUS, 3L RIBS, 4R RIBS, R GLENOID, P LULNA, P RULNA, L PATELLA, R PATELLA, D LFEMUR, L TALUS, R TALUS

GRADE II OSTEOARTHRITIS

1170 MED LCLAVICLE, 1L RIB, 1R RIB, L GLENOID

GRADE III OSTEOARTHRITIS

1170 L ACETABULUM, R ACETABULUM, P LFEMUR, P RFEMUR