Table 1 Measurement of Copper Transfer to Back of Brass Rubbing Paper for Representative Brasses in Norfolk

Date of brass manufacture	Brass identification, location and description	Fraction of sample area rubbed	Cu ($\mu g\ cm^{-2}$) (above control)
c. 1360	James de Hoveston, Blickling Church, Blickling		
	Head	0.80	0.035
	Head	0.90	0.018
1401	Sir Nicholas Dagworth, Blickling Church, Blickling		
	Stomach	0.96	0.49*
	Stomach	0.99	0.34*
	Stomach	0.97	0.197*
	Mail	0.47	0.127
	Mail	0.66	0.059
	Sword belt	0.74	0.087*
1416	Sir Simon Felbrigg, Church of St Margaret, Felbrigg		
	Face	0.95	0.154
	Banner	0.26	0.31
1432	Robert Baxter, Mayor, St Giles Church, Norwich		
	Hand	0.83	0.154
	Robe	0.80	0.20
	Robe, repeat	0.84	0.110
	Foot	0.82	0.317
	Foot	0.86	0.206
	Inscription	0.79	0.151
1432	Christiana Baxter, St Giles Church, Norwich		
	Head	0.91	0.176
	Hands	0.86	0.167
1458	Cecilie Boleyn, Blickling Church, Blickling		
	Skirt	0.80	0.97*
	Skirt	0.68	0.83*
	Skirt	0.65	0.322*
	Skirt	0.65	0.14
	Inscription	0.70	0.41*
	Inscription	0.70	0.39
1485	Isabel Boleyn Blickling Church, Blickling		
	Skirt	0.75	0.224
	Skirt	0.62	0.156*
	Inscription	0.61	0.125
c. 1500	? Robert Gardiner, St Andrews Church, Norwich		
	Upper robe	0.84	0.043
	Upper robe	0.64	0.025
	Lower robe	0.97	0.041*
	Centre robe	0.81	1.05*
	Centre robe	0.81	0.054
	Hands	0.84	0.047
c. 1500	? Wife of Robert Gardiner, St Andrews Church, Norwich		
	Middle robe	0.71	0.073
	Lower robe	0.72	0.100
	Lower border	0.90	0.049
1612	Thomas Windham, Church of St Margaret, Felbrigg		
	Detail near hand	0.72	0.246*
	Detail near hand	0.73	0.228*
	Detail near hand	0.62	0.115*
	Hand	0.81	0.075
	Central region	0.72	0.072*
c. 1960	NBS sample, washed with ethanol		
	Smooth face	1.00	0.045
	Smooth face	1.00	0.019
	Rough face	1.00	0.066
	Rough face	1.00	0.051

* Possible contamination by metal flecks from brass rubbing crayons left from previous brass rubbings.

and the general access of brasses to the public. Other types of degradation must surely exist, such as wear by rugs which are trodden on and moved repeatedly, the effect of brass flexure (with possible associated work-hardening and eventual fracture (H. K. Cameron, personal communication)), and corrosion caused by skin acids. Our results must not therefore be interpreted as indicating that monumental brass degradation from all possible causes added together is necessarily trivial.

We thank Dr H. K. Cameron, Mr John Smith, Mr John Page-Phillips, Rev. J. R. Southern, Rev. and Mrs Hedleigh Davis and Mr Tom Gills for their help in our study.

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Received February 14; revised March 7, 1973.

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Impurities in Saccharin and Bladder Cancer

WE reported[1] that a combination of dietary saccharin with a single dose of methylnitrosourea (MNU) produced bladder tumours in five out of twelve female Wistar rats. No tumours were observed in control animals receiving either saccharin or MNU alone. Since submitting this report, concern has been expressed at the United States Food and Drugs Administration meeting, May 17, that impurities in saccharin, particularly *o*-toluene sulphonamide, could be responsible for the bladder tumours observed in saccharin feeding studies at the Wisconsin Alumni Research Foundation (WARF)[2,3].

Saccharin manufactured by the same process as that used in the WARF studies, namely by the Remson-Fahlberg process, in which *o*-toluene sulphonamide is the starting material, is known to contain this compound as an impurity. A very recent analysis of the saccharin used in our experiment showed it contained 810 p.p.m. of *o*-toluene sulphonamide. No evidence is at present available that this level of *o*-toluene sulphonamide is significant, but the possibility that it is this, or some other impurity, rather than saccharin *per se* which acts as the co-carcinogen in our experiments, will be further investigated. The saccharin used in our work is representative of that currently sold not only in the UK, but also in many other parts of the world[3].

We thank Dr A. W. Noltes, Coca Cola Europe, London, for arranging the analysis done by the Battelle Institute, Columbus, Ohio, USA.

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Received June 6, 1973.

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