CORRIGENDA

to the paper

RANDOM ASSOCIATIONS ON A LATTICE*

By P. A. P. MORAN

Received 23 October 1948

P. 323, line 3 from bottom:

for $[8mn-7m-7n+n]$ *read* $[8mn-7m-7n+4]$.

P. 328, lines 16 and 18:

for $(6mn-6m-6n+1)$ *read* $(6mn-6m-6n+4)$.

line 17,

in formula ending $\ldots+13m+13n-9)$ *read* $\ldots+13m+13n-8)$.

* Vol. 43 (1947), pp. 321–8.

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CORRIGENDUM

to the paper

COLLISIONS THROUGH LIQUID LAYERS

By F. R. EIRICH and D. TABOR†

Received 13 November 1948

The initial collision (see pp. 571–2). The instantaneous velocity change of the hammer (from V_0 to V) when it first strikes the liquid film should be calculated from energy and not momentum considerations, since the hammer has momentum in the vertical direction whilst the liquid is expressed in a horizontal direction and its total momentum is, by symmetry, zero at every instant. The kinetic energy dE of an annulus of liquid of radius r will be $\frac{1}{2}mc^2$, where $m = 2\pi rh\rho dr$, and c, the radial velocity of flow, is $\frac{1}{2}rV/h$, since the liquid starts moving in plug flow. Integrating from $r=0$ to $r=R$, we find that the total kinetic energy E imparted to the liquid film is $E = \frac{1}{16}\pi\rho R^4V^2/h$. Assuming that extraneous energy losses, including any energy imparted to the anvil, are negligible, we may equate this to the energy loss of the hammer $\frac{1}{2}M(V_0^2-V^2)$. Hence

$$V_0^2 = V^2(1+\pi\rho R^4/8hM).$$

To a first approximation this yields

$$V = V_0\frac{1}{1+\pi\rho R^4/16Mh}. \tag{20a}$$

The term at the right-hand side of the denominator is one-half that given in the original derivation (equation (20)), so that the instantaneous decrease in the velocity of the hammer is even less marked. For the given case where $M = 400$ g., $R = 1$ cm., $\rho = 1{\cdot}6$ and $h = 5\times10^{-2}$ cm., the velocity decrease is less than 2 %.

† Vol. 44 (1948), pp. 566–80.

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