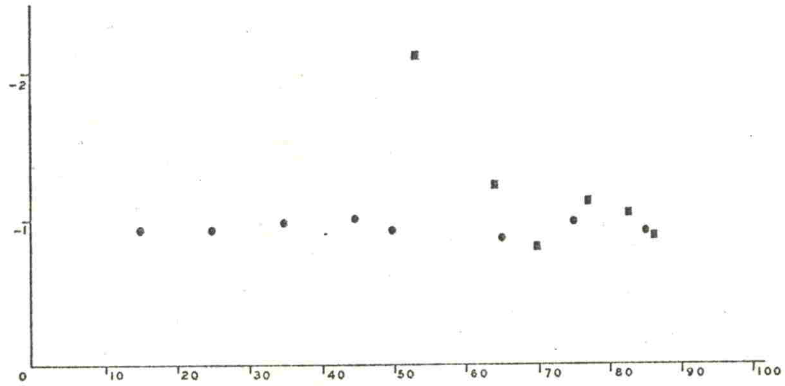

Fig. 1. Plot of the value of the strain-hardening parameter b_2 (vertical axis) against the percentage of short-term failure stress P_s (horizontal axis). Circles indicate Pennant sandstone; squares indicate Carrara marble.

b_2 for the experiments at loads of 3.5 tons and less can be used to write, from the structural theory,

$$(n - 2m)/(n - 2) = 0.930$$

The exponent of the power-law dependence of strain rate on stress can be determined by regressing the logarithms of the strain rates against the logarithms of the stresses. Then,

$$2n(m - 1)/(n - 2) = 0.58$$

These equations can be uniquely solved for n and m since the root $n = 2$ can always be discarded on physical grounds. Solution gave $n = 8.3$, $m = 1.22$; these values are in the ranges suggested by the theory.

Assuming that n, which measures the increase in corrosion rate caused by stretching the mineral lattice, is a constant of the mineral and is not stress dependent, values of m can be calculated for higher loads. They are listed below.

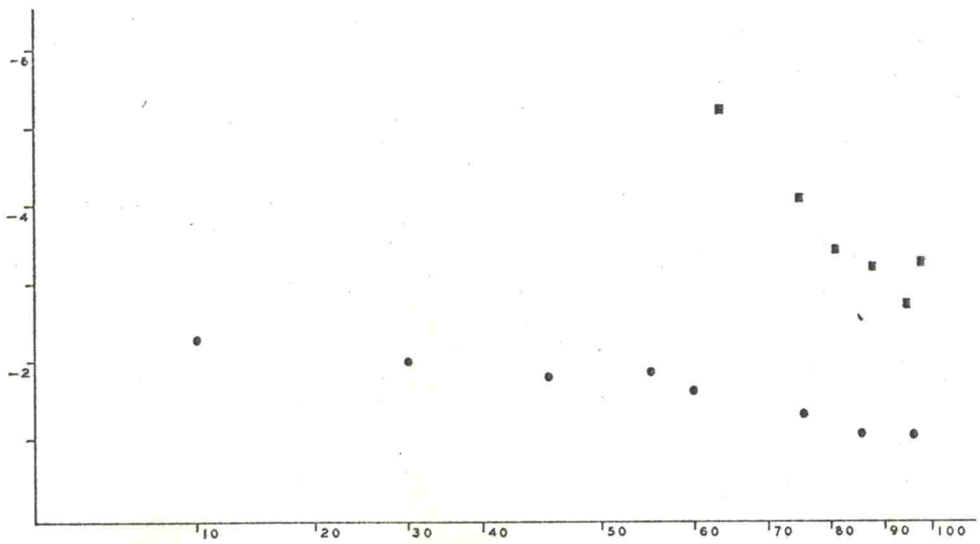

Fig. 2. Plot of the natural logarithm of the strain rate (vertical axis), in microstrains per minute, against the percentage of short-term failure stress (horizonal axis) logarithmic scale. Circles indicate Pennant sandstone; squares indicate Carrara marble.