the rapid effacement of marble epitaphs in our churchyards, are instances of this solution. It has been shown that in the atmosphere of a large town, with abundant coal-smoke and rain, exposed inscriptions on marble become illegible in half a century. Pfaff determined that a slab of Solenhofen limestone, 2520 square millimetres in superficies, lost in two years, by the solvent action of rain, 0·180 gramme in weight, in three years 0·548, the original polish being replaced by a dull earthy surface on which fine cracks and incipient exfoliation began to appear. Taking the specific gravity of the stone at 2·6, the yearly loss of surface amounts to $\frac{1}{72{\cdot}8}$ millimetre, so that a crag of such limestone would be lowered 1 metre in 72,800 years by the solvent action of rain.[52] J. G. Goodchild, from observations of dressed surfaces of Carboniferous limestone in the north of England, has inferred that these surfaces have been lowered at rates varying from one inch in 240 years to the same amount in 500 years.[53] Dolomite is much more feebly soluble than limestone. As rain-water attacks the carbonate of lime more readily than the carbonate of magnesia, the rock is apt to acquire a somewhat porous or carious texture, with a corresponding increase in the proportion of its magnesian carbonate. Eventually the latter carbonate is dissolved and redeposited in the pores of the rock, which then assumes a characteristic crystalline aspect. Among the sulphates, gypsum is the most important example of solution. It is dissolved in the proportion of about 1 part in 400 parts of water.

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[52] Pfaff, Z. Deutsch. Geol. Ges. xxiv. p. 405; and "Allgemeine Geologie als exacte Wissenschaft," p. 317. Roth, "Allgemeine und Chem. Geol." i. p. 70. Geikie, Proc. Roy. Soc. Edin. x. 1879–80, p. 518.

[53] Geol. Mag. 1890, p. 466.