hour; even that of a torrent does not exceed 18 or 20 miles in the hour. Mr. D. Stevenson states that the velocity of such rivers as the Thames, the Tay, or the Clyde may be found to vary from about one mile per hour as a minimum to about three miles per hour as a maximum velocity.[120]

It may be remarked, in concluding this part of the subject, that elevations and depressions of land must have a powerful influence upon the slope of rivers. The upraising of the axis of a country, by increasing the slope, augments the rate of flow, which, on the contrary, is diminished by a depression of the axis or by an elevation of the maritime regions.

4. **Geological Action.**—Like all other forms of moving water, streams have both a *chemical* and *mechanical* action. The latter receives most attention, as it undoubtedly is the more important; but the former ought not to be omitted in any survey of the general waste of the earth's surface.

i. Chemical.—The water of rivers must possess the powers of a chemical solvent, like rain and springs, though its actual work in this respect can be less easily measured, seeing that river-water is directly derived from rain and springs, and necessarily contains in solution mineral substances supplied to it by them. Nevertheless, that streams dissolve chemically the rocks of their channels can be strikingly seen in limestone districts, where the lower portions of the ravines may be found enlarged into wide cavities or pierced with tunnels and arches, presenting in their smooth surfaces a great contrast to the angular jointed faces of the same rock where exposed to the influence only of the weather.[121]

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[120] "Reclamation of Land," p. 18.

[121] For an illustration of this action by the Rhone in the marine molasse, see F. Cuvier, Bull. Soc. Geol. France, 3me ser. viii. p. 164.