Russia, on others in southern France, on the streams intersecting the low land of the Atlantic border of the United States (Kerr), and on those of southern Long Island (E. Lewis).

It is shown that in streams the difference between the surface and bottom velocity accounts for this erosion of the right bank, with deposition at the left, thereby making the right steeper and placing the deepest part of the stream near it. The extremely slow transverse motion will be combined with that down stream, so that the actual motion will make a very small angle with the direction of the channel. (A. C. Baines, *Am. Jour. Sci.*, xxviii. 1884.)

(2) **Kinds and methods of work.** — The kinds of work done by the mechanical action of waters, whether in rivers, lakes, or oceans, are in a comprehensive way (1) Denudation; (2) Transportation; (3) Deposition of the transported material, making usually stratified deposits.

Denudation.

Denudation is going on wherever any rock materials or rocks are within reach of moving waters. It is called *erosion* or *excavation*, when the work is the making of valleys, and *degradation*, when it is the wearing down of hills or mountains. But the term *denudation* covers both processes. Another style of work under it is that of *planation*, or the making of flat surfaces by the shearing action of spreading waters, and by deposition up to the surface, or to a common level. The worn material derived from the wear of rocks is called *detritus*, because made by wear; and also after deposition, *sediment*, because deposited usually from waters. *Sedimentary* rocks derive thence their name. *Silt*, the finest of mud, occurring in the bottom of estuaries and elsewhere, and *ooze*, soft, sticky mud, are extreme results of the grinding process. The term *deposit* is a general one for an accumulation made by any natural method.

Denudation depends for its effects on the varieties and conditions of the rocks subjected to it not less than on the powers of the agent, water. It is facilitated not only (1) by softness or fragility of terranes, but also by (2) their subdivision into thin layers; (3) a loose junction of layers; (4) alternation of yielding layers with firmer layers; (5) vertical joints or fractures, and especially multitudes of surface cracks or rifts. (6) Boldness in position is also favorable; for high bluff fronts feel the force of blows of water proportionally to their verticality, and also have gravity to aid in removing loosened material, and to produce rendings where water descends in vertical crevices. (7) Moreover, angular concavities or cavernous openings and projecting points in walls give the waters great advantage. (8) A horizontal position in the bedding of cliffs or walls is especially favorable, because a little removal below undermines, and may cause great downfalls; and, besides, walls and cliffs are thus kept vertical, for the long continuation of the work. (9) Above all, denudation is facilitated by the weakened con-