of the tides, the floods from the upper country begin to deposit the matter they hold in solution."

The occasional floods which occur in the valleys of the Thames and the Lea arise entirely from the surface waters, hardly ever from the melting of snow in the higher lands near their sources. Indeed, the climate of this part of England, and the feeble elevation of its hills, does not admit of the fall of snow in quantities sufficient to affect the sources of the river supply. Under these circumstances the floods are found to occur in the rainy seasons—in November and December, in

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April and May, without, however, being in any manner peculiarly confined to those months. The flood waters brought down to the rivers are highly charged with earthy matter, and the germs of organised life; they, in fact, materially influence the formation of the alluvial deposits of the rivers. The volume of water brought down by the Thames not being sufficient to form a delta, the particles which the stream holds in solution are gradually deposited on the mudbanks, and form shifting shoals, which extend from about Woolwich to the Nore, and even beyond.

Numerous shoals have existed in the bed of the river near the entrance to the Pool, but in most instances these have been reduced by dredging. For instance, a shoal existed on the north shore, opposite to the recesses formed by the east entrance of the London Dock on the north, and the St. Saviour's Dock on the south; a similar shoal was formed opposite to the Lime Kiln Dock; another in a wide reach a little above the Greenland Docks; a fourth near Deptford Creek. Opposite Saunders Ness, shoals have been formed on each side of the river, owing to the check given to its velocity by the abrupt bend which it here assumes; whilst a small shoal in the middle of the stream, a little lower down than these side ones, appears to have owed its origin to the interference which it produces in the direction of the currents. Another small shoal has been produced in the still water opposite the entrance of the West India Docks.

Below the above-mentioned points of the river it is very difficult, from the nature of the currents, to define with certainty the exact position of the shoals; still less would it be possible to effectually remove them, or to stop their formation. A writer on the physical geography of the Thames, observes, "At Woolwich the water becomes brackish at spring tides, and the greater specific gravity it thence attains modifies the conditions of the deposition of the matter it holds in suspension. The difference between the lengths of time during which the flood and the ebb tides prevail also diminishes as the river approaches the sea. Moreover, the action of the current upon the shores of the embouchure at the same time that it removes