of the flints, it has been thought by some authorities to imply great violence in the removing power, especially in those cases where well-rounded pebbles washed out of Eocene strata are likewise found broken, sometimes with sharp edges and often with irregular pieces chipped out of them as if by a smart blow. Such fractured pebbles occur not unfrequently in the drift of the valley of the Thames. In explanation, I may remark that, in the Blackheath and other Eocene shingle-beds, hard egg-shaped flint-pebbles may be found in such a state of decomposition as to break in the same manner on the application of a moderate blow, such as stones might encounter in the bed of a swollen river.

To conclude: It is a fact, not questioned by any geologist, that the area of the Weald once rose from beneath the sea after the origin of the chalk, that rock being a marine product, and now constituting dry land. Few will question, that part of the same area remained under water until after the origin of the Eocene deposits, because they also are marine, and reach to the edge of the chalk-downs. Whether, therefore, we do or do not admit the occurrence of reiterated submersions and emersions of land, the first of them as old as the Upper Cretaceous, the last perhaps of Newer Pliocene or even later date, we are at least compelled to grant that there was a time when, in the region under consideration, the waters of the sea retreated. The presence of land and river-shells, and the bones of terrestrial quadrupeds in some of the gravel, loam, and flint-breccia of the Weald, may indicate a fluviatile origin, but they can never disprove the prior occupation of the area by the sea. Heavy rains, the slow decomposition of rocks in the atmosphere, land-floods, and rivers (some of them larger than those now flowing in the same valleys) may have modified the surface and obliterated all signs of the antecedent presence of the sea. Littoral shells, once strewed over ancient shores, or buried in the sands of the beach, may have decomposed so as to make it impossible for us to assign an exact paleontological date to the older acts of denudation; but the removal of Chalk and Greensand from the central axis of the Weald, the leading inequalities of hill and dale, the long lines of escarpment, the longitudinal and transverse valleys, may still be mainly due to the power of the waves and currents of the sea, co-operating with that upheaval and subsidence and dislocation of rocks which all admit to have taken place.

In despair of solving the problem of the present geographical configuration and geological structure of the Weald by an appeal to ordinary causation, some geologists are fain to invoke the aid of imaginary "rushes of salt water" over the land, during the sudden upthrow of the bed of the sea, when the anticlinal axis of the Weald was formed. Others refer to vast bodies of fresh water breaking forth from subterranean reservoirs, when the rocks were riven by earthquake-shocks of intense violence. The singleness of the cause and the unity of the result are emphatically insisted upon: the catastrophe was abrupt, tumultuous, transient, and paroxysmal; fragments of stone were swept along to great