

tion uninterrupted by dust and sand falls not only because of the anchoring of the sands by ice over the dry land but also by reason of the ice covering of the lakes or estuaries in which the clays were deposited.

In this view, the sand partings of clays in this region should be thickest on the western side of the clay area and should wedge out to thin layers on the east, due allowance being made for the drifting, by currents, of the dust which falls into the water.

The interpolation of sand partings by recurrent wind action in something like cycles of one week agrees more closely with the probable rate of deposition of the observed strata than the supposition that the alternations depend on seasonal or diurnal changes; and instead of allowing 5000 years for the deposition of the clays in the Connecticut valley, for instance not more than one 50th part of that time would probably suffice under the conditions of excessive discharge of rock-flour from the neighboring melting ice sheet.

The sandy partings in clay often simulate the loess in character and it is in them also that the equivalents of the "loess pupchen" or "clay dogs" are frequently found. There is good evidence that many areas of loess are of eolian origin; but the sandy partings in subaqueous clay areas differ from loess in that the sand has come to rest beneath a water body rather than on an open air surface.

*Succession of glacial clays.* It has already been pointed out in the chapter on the effects of retreating glaciers how deposits on the same stratigraphic plane may be of different ages or stages of glacial retreat. Each proglacial delta has its supplement in clays extending from beneath it over the low ground in front of it. Thus the fact that in the lower Hudson valley we find clays underlying gravels and sands does not show that there was first a time of clay deposition followed by one of coarser deposits unless it can also be shown that the gravels and sands were simultaneously deposited by normal streams. The ice contacts in that region point clearly to a succession from north to south as the ice front receded.

*Exceptional reasons for predominance of clay deposits in the glacial series of the Hudson valley.* The dominance of clays in the Hudson valley from the Highlands to the mountains which