

decrease in altitude, however, is by no means uniform. Indeed, there is a rather sharp distinction between an outer, higher, and more variable group, and an inner, lower, and more uniform one. Of the ridges numbered from thirteen to twenty-eight, the extreme crestline measurements are 3.04 and 4.64 feet—a difference of scarcely 18 inches among them. There is also a close approach to perfect horizontality in the crestline of any single ridge of this group. As Professor Ganong remarks, the difference between the vegetation of the outer and the inner ridges is very great.¹ There is an equally striking difference in their structure. Ridges one to twelve inclusive are dune ridges, of unusual linear uniformity and symmetry, to be sure, but built throughout of wind-swept sand. In the hollows between them, gravel frequently appears; but in no place, so far as I could see, above the altitude which is reached by storm waves on the present beach, *i.e.*, 5.64 feet above high tide mark. Ridges thirteen to twenty-six, on the other hand, are gravelly, with pebbles of good size on the very surface. Many of them are typical shingle beaches. Ridges twenty-seven and twenty-eight have a veneer of sand, perhaps a foot thick, above the gravelly foundation. As a record of the former sea-level, therefore, ridges thirteen to twenty-six are as valuable as a modern storm beach; while ridges one to twelve, being dune ridges, have relatively little significance. They are, on the average, about three feet higher than the older ridges, *not because the coast has subsided about three feet since the older ones were built, but because the wind has heaped up sands on top of the outer gravel beaches to an average depth of three feet.* Any conclusion regarding modern subsidence here must rest upon a comparison of the gravel beaches with each other and with the gravel beaches along the present shore. As already stated, the gravel ridges thirteen to twenty-six are practically equal in height; and such small differences as are brought out by the measurements are distributed unsystematically through the group. All the crests are vertically within the range of storm waves of to-day—5.64 feet above the high tide mark on the present beach. The most significant comparison is that of the old ridges with a modern

¹ W. F. Ganong: *Op. cit.* *Botanical Gazette*, vol. 42, 1906, p. 95.