

Profiles were determined by stakes set up at various regions in Pegasus Bay (Fig. 2). Each profile was derived from six stakes each 2.12m long placed down the beach in a straight line with 0.90m projecting above the surface. They were painted and washers welded at regular intervals for more permanent marks and the stakes related to each other by means of a Quickset level. Records of sand movement relative to the first reading of the stakes were taken weekly from May (26.5.62) to January (13.1.63). The slope of the beach was  $0^{\circ} 36'$  at low tide level and  $2^{\circ} 18'$  at high tide level for the South Brighton profile.

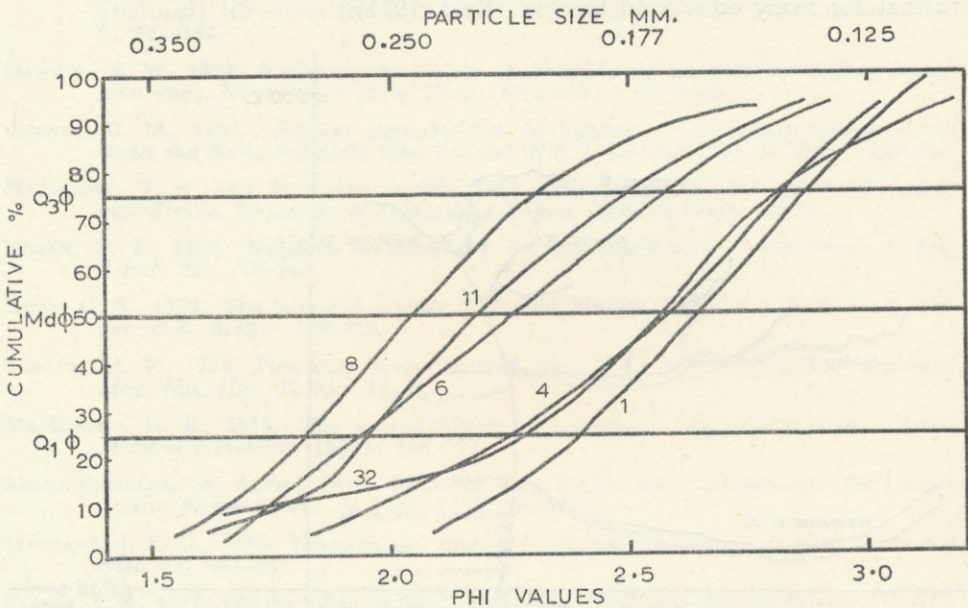


FIG. 3.—Cumulative curves of some Pegasus Bay sediments (1, 4, 6, 8, 11, 32) plotted against a Phi scale to show the mean grade of sand at these places.

At all regions the profiles showed that the beaches had a yearly cycle of build up and removal of sand. The amount of sand removed or added at each stake for the South Brighton profile was averaged, and the results in Fig. 4 show how the sand moved throughout the year. During May most of the sand was removed in a single storm, but at Kairaki during the same storm there was no sand removed at all. The overall effect in Pegasus Bay for the whole year has been a build up of sand.

#### (e) Organic content

The organic content of six samples of surface sand and six samples of sand at 60cm depth were determined by a method described by Morgans (1956). Instead of 1gm samples however, 500gm samples were shaken with water and the fine material in suspension was poured off and allowed to settle out, and the water decanted. The sediment which had settled was oven dried at  $120^{\circ}\text{C}$ . The organic content of the surface sand was higher (0.94%) than the sand at 60cm (0.58%). In the sands where the organic content was determined, there was no black sulphide layer and care was taken to ensure that there were no large particles of organic matter or animals which would have affected the results considerably.