

swiftness is retarded, since the sand which topples over has to cover a surface which measures about 165 m. in breadth from *f* to the base of the dune. Each successive layer of sand that descends is therefore extremely thin, and its advance is slower than that of the dune *e* which follows immediately after it, and which

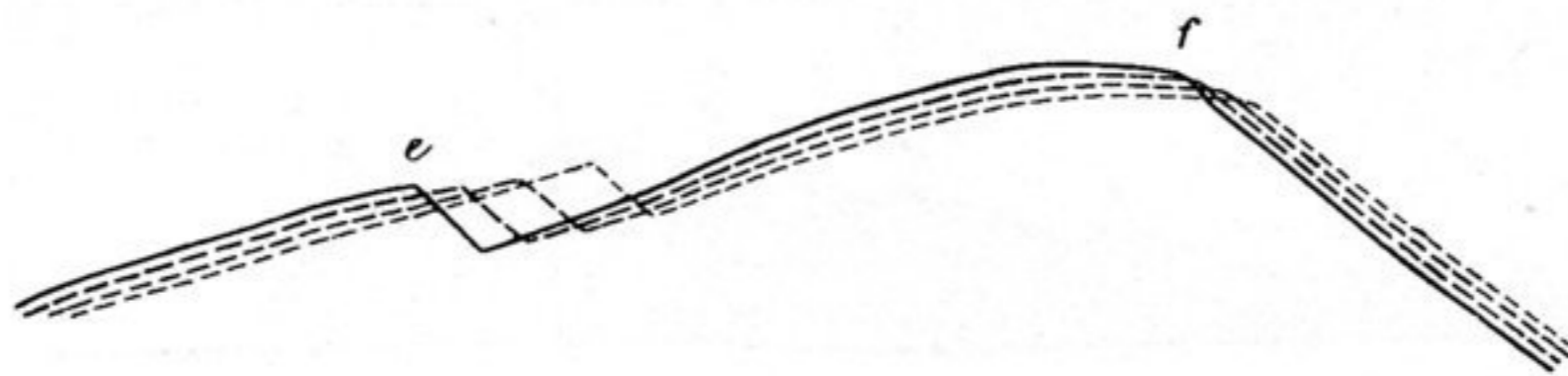


Fig. 241.

moves faster owing to its leeward flank being far shorter, not more than a dozen meters at the most, while in its case each succeeding sand-slide forms a much thicker layer than happens in the case of *f*. But as at this stage *f* lies more exposed to the wind, its windward slope becomes in consequence more and more flattened, until eventually as compared with *e* it lies in a more sheltered position than *e* does. This last then becomes the culminating-point of the dune-accumulation, while it and *f* become separated by a terrace, which has quite as ephemeral an existence as its predecessor. And if the dune-crest *d* (fig. 242) should rise to the culminating position before *e* overtakes *f*, then there would be two terraces.

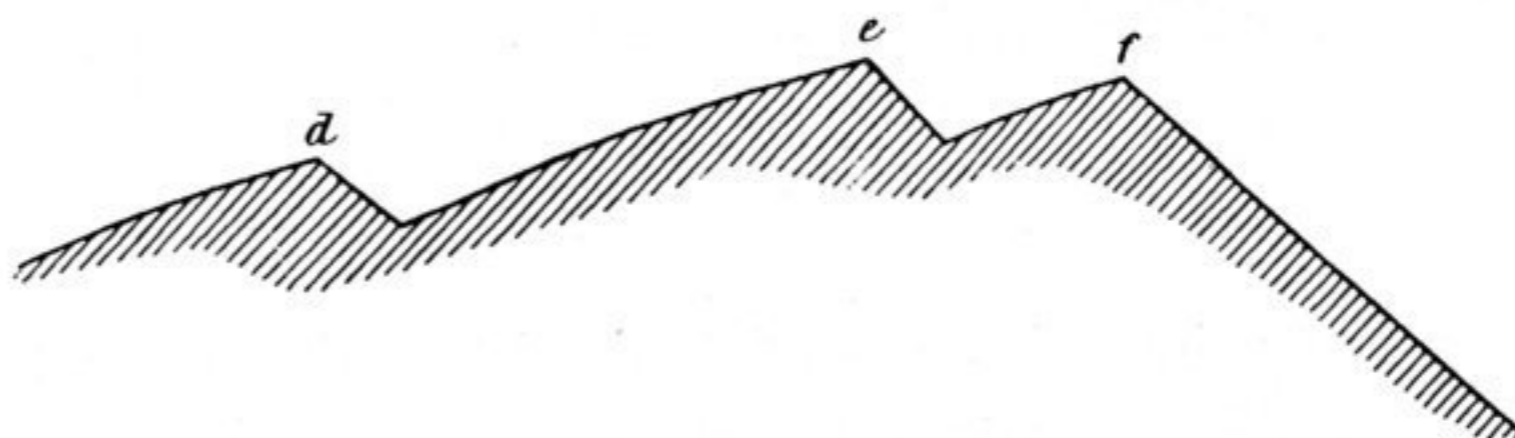


Fig. 242.

To return to fig. 238, *e* must move slower than *f*, because it is exposed to an atmospheric current which in its passage over the earth's surface has encountered more opposition than the current which sweeps over *f*. In a similar way *d* travels more slowly than *e*, and so on. Nevertheless this has no effect upon the general advance of the dune-mass, for as soon as *f* has overtaken *g* and *h*, its own forward movement becomes so retarded that the individual dunes which follow on behind it catch up with it. There is no need therefore to assume that the base of the leeward flank of the accumulation moves westwards intermittently, or by successive spurts as it were. The crest *h* (see fig. 240), lying under the shelter of *f*, does thus indeed travel more slowly, but it does not therefore necessarily follow that it advances generally at a slower rate than the crest *f* (fig. 241), because the slope of this last is longer than the corresponding slope of *h*.

The entire dune-mass moves therefore slowly towards the west. The individual dunes, which, under the driving impulse of the east wind, climb up upon its shoulders, travel far faster than it does, pass each in turn the culminating-point, and over on its leeward face are swallowed up by their comrades following on behind them.