

A Science Service Feature

Released upon receipt  
but intended for use  
July 4, 1934

? WHY THE WEATHER ?

Mailed June 27, 1934

TRAVELING DUST

By Charles Fitzhugh Talman,  
Authority on Meteorology.

In a great dust-storm fine dust is sometimes blown up to heights of a few miles, and dust that travels long distances is usually transported by high-level winds rather than by those close to the earth's surface. Thus it happens that the dust cloud of a great dust storm more often than not advances in a direction quite different from that of the lower winds.

The process by which the winds lift solid material from the ground, sometimes to great heights, deserves a word of explanation. If air always flowed in a smooth horizontal stream over dusty surfaces its friction would drag the dust along with it, but would not lift it. Such surface drifting, due to the horizontal component of the wind's motion, does, of course, occur, and its effects are strikingly visible in the shifting dunes that often form over a broad tract of sand or snow.

All winds near the earth's surface, however, are full of waves and eddies, and in many cases, as over a stretch of strongly heated soil, there are strong updrafts, sometimes extending miles upward. There are also long sloping updrafts along "fronts" and in the circulation of all cyclones or "lows." All kinds of dust are heavier than air and in a perfectly still atmosphere sink more or less rapidly toward the ground, the rate of fall depending on the specific gravity, size and shape of the particles. It is only because of upward movements of the air itself that the winds are able to charge the atmosphere with vast quantities of dust.

(All rights reserved by Science Service, Inc.)

-----  
SCIENCE SERVICE  
21st and Constitution Ave.  
Washington, D.C.