No. 107

Sept. 13

A Science Service Feature

? WHY THE WEATHER ?

Dr. Charles F. Brooks,
Secretary, American Meteorological Society,
describes:

BILLOW CLOUDS.

Billow clouds, sometimes called windrow clouds or wave clouds, are regularly spaced bands, shining white when the sun strikes them, with intervening strips of blue sky. They usually form in the lower cirrus region, three or four miles up in the air, but may form at any level, from that of surface fogs to the higher cirrus regions. They are caused by the flow of one layer of air over another of different temperature and density, and usually of different humidity.

Whenever two such strata meet, billows of great wave length and often of great amplitude are generated, in the same manner that wind produces ocean billows. As the waves advance the atmosphere rises and falls, producing maximum and minimum temperatures, that of the crests being lower than that of the troughs. If the ruffled layer is sufficiently humid the wave crests, being coldest, condense some of their water vapor as clouds, while the troughs, being warmer, remain clear, and through them we see the sky, thus giving us the visual wave effect. If, however, the humidity is low the wind billows exist without clouds, and are invisible to the airman. He can avoid billow clouds, for he can see them and fly above or below. But he cannot avoid the invisible except by chance, and once within the influence of the waves he experiences a series of disconcerting bumps, due to the quick transition from one billow to another, and sometimes he finds it difficult to rise out of them to a safer layer of air.

(Tomorrow: Heights of Clouds)

All rights reserved by Science Service.

Science Service,
1115 Conn. Ave.,
Washington, D. C.