

A Science Service Feature

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? WHY THE WEATHER ?

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Authority on Meteorology.

CONTROLLING THE WEATHER

In August, 1907, some attempts to break a drought by setting off explosives were made at Oamaru, New Zealand. D.C. Bates, in charge of the New Zealand meteorological service, observed the experiments and published an interesting report on them. In summing up the results, which he found to be negative, he makes a statement that embodies the most effective argument brought by meteorologists against the idea that, except in a small and local way, the weather can be altered by the undertakings of mankind. He says:

"The forces arrayed against artificial changes in the atmosphere are tremendous - almost beyond conception. A unit of heat is the amount needed to raise the temperature of a pound of water one degree Fahrenheit, but about a thousand units are needed to transform a pound of water into a pound of vapor. When vapor turns to water, latent heat is liberated in a corresponding amount. Now, an inch of rain corresponds to 22,635 gallons, or 101 long tons of water to the acre, or over 64,640 tons to the square mile. The heat developed or released under such conditions of condensation from vapor to water for an inch of rain to the square mile is estimated as equivalent to the work done by 100,000,000-horse power for half an hour. Consider again the sweep of a wind, five hundred miles across horizontally, and three miles high, blowing for an hour at the rate of twenty miles. The force of the mightiest explosion with all its gas put forth into the air is in comparison less than a drop in a bucket. Firstly and lastly, rainfall is concerned with temperature in its relation to the aqueous vapor. Until it can be shown that the temperature of the air can be controlled by gigantic cooling operations, we may look in vain for any alteration in the natural and well-established order of events by way of the production of artificial rain."

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