A Science Service Feature

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? WHY THE WEATHER ? Mailed August 10, 1926

THE HURRICANE INCUBATOR

Tropical cyclones require warmth, moisture, calm air, and a twist to start them on their career. Land surfaces are generally too uneven and cannot furnish so much moisture as the ocean; therefore, these storms start over warm oceans in the doldrums or equatorial belt of calms between the northeast and southeast trade winds.

Ordinarily when convection occurs it takes place irregularly and on a small scale, small bodies of heated muggy air are pushed upward by surrounding heavier and cool air masses. But in the warm sultry doldrums the process assumes larger proportions. So wide a belt of stagnant air becomes heated and expanded that it cannot be readily displaced, or dissipated by small interchanges. Instead, a general flow starts towards the heated area from all sides. The trade winds on either side of the doldrums are already somewhat opposing, which favors the development of a whirl; moreover, the inflowing winds cannot move straight towards the center of the low because they are deflected to the right by the earth's rotation. A counter- clockwise spiral of winds towards the center is then built up.

Less than eight degrees from the equator these tropical cyclones can hardly start, because there is not enough deflective effect in such low latitudes. The best season for our hurricanes then is late summer or fall when the doldrums are well north of the equator.

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