No. 424 A Science Service Feature

Sept. 19 ? WHY THE WEATHER ?

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TROPICAL CYCLONES AS MOISTURE ENGINES

A tropical cyclone requires an enormous amount of water vapor for its proper development; if it leaves the ocean and runs on land it soon weakens, apparently because of the dryness and, in part, the greater friction. The air on all sides of such a tropical storm contains up to three and four per cent. of water vapor, two or three times as much as the air in an ordinary "low". A large West Indian hurricane may draw in towards its center air from 500 miles on either side, but the rain area extends in such a storm only to about 250 miles from the center in all directions. The moisture, then, from a belt 1000 miles wide is largely precipitated in an area 500 miles across. And the tropical cyclone is a very efficient precipitator, condensing probably three fourths of the total moisture brought into it.

The chief source of the tropical cyclone's tremendous energy is this rapid condensation of moisture. A rainfall of five inches a day is common in such storms. The latent heat from this condensation releases an amount of energy sufficient to overcome friction and to keep the air moving at hurricane velocity. Moreover, the centrifugal tendency of the millions of tons of drops of water whirling about the center of the hurricane is thought to be an important cause of the lowness of the atmospheric pressure at the central eye.

(Tomorrow: Manufactured Climate)

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