

A Remarkable Whirlwind

'DUST-DEVILS', or rotating columns of sand travelling rapidly across open spaces, are not uncommon objects to desert travellers. Their height and breadth is often very considerable and the violence of the eddies causing them very great.

The smallest of this type I have seen was only about 5 ft. high, that is, the visible column of sand, and less than a foot in diameter. It passed so close to me that it was easy to see its narrow cycloidal path marked on the sand, which was deposited and lifted as the eddy travelled on at not less than 15 miles an hour, although the wind was actually very light.

I recently encountered a much more remarkable example while walking over a smooth surface of desert on a flat calm day. Hearing a swishing sound behind me, I turned and observed a large revolving ring of sand less than a foot high approaching me slowly. It stopped a few feet away and the ring, containing sand and small pieces of vegetable debris in a sheet less than one inch thick, revolved rapidly round a circle of about 12 ft. diameter while the axis remained stationary. It then moved slowly round me after remaining in one spot for at least thirty seconds, and slowly died down. It would be interesting to know if others acquainted with the desert have come across similar examples of a broad, flat eddy.

The ancient superstition among desert tribes that these whirlwinds are spirits, called 'afrit' or 'ginni' (the 'genii' of the "Arabian Nights"), would seem to have a reasonable foundation in face of such an 'inquisitive' apparition.

Cairo.

J. L. CAPES.

Thermal Decomposition of Acetaldehyde

IN a letter in NATURE of January 12, Mr. Hinshelwood stated that further work in his laboratory by Dr. Winckler on the thermal decomposition of acetaldehyde had refuted the criticism of his work contained in a communication to the Royal Society of May 10, and in letters in NATURE of October 13 and 27, 1934. The results of this work appear in a paper which he communicated to the Royal Society at a meeting held on March 7, at which it was read in title only. The results are held to yield no evidence that the reaction represented by the equation, $\text{CH}_3\text{CHO} = \text{CO} + \text{CH}_4$, is appreciably heterogeneous, or that it depends upon a chain mechanism.

Mr. R. V. Seddon and I have also been engaged in a research on the same subject, with results which appear to us to point in exactly the opposite direction. The work is not completed, and the results may not be published for some time, so we ask permission to point out that the last word has not been said upon this subject.

M. W. TRAVERS.

Points from Foregoing Letters

THE half-life period of radioelements formed when metallic zinc, caesium nitrate, thallium acetate and bismuth carbonate are submitted to bombardment by slow neutrons is given by Prof. J. C. McLennan, Mr. L. G. Grimmett and Mr. J. Read. The authors also describe a way of plotting the observed activity, which allows of a more exact determination of the life period of relatively long-lived radioelements.

Prof. E. F. Burton and Mr. W. F. Oliver submit photographs of X-ray diffraction patterns indicating that at very low temperatures (below -110°C .) water vapour solidifies in amorphous form, while above that temperature it forms crystalline ice.

Galactose, a constituent of the milk sugar molecule, is apparently formed in the animal body from glucose, which has the same chemical composition, but different structure. Prof. Robinson has suggested that the change from glucose to galactose occurs through a relatively simple rearrangement of the atoms (brought about by phosphoric acid). Prof. J. Kenner now suggests that the glucose molecule is first broken up and then recombined to form galactose.

Molecular weights were first determined from combining ratios, osmotic and gas pressure, etc. Recent physical methods (for example, ultracentrifuging) sometimes give results differing from those obtained by the original methods. A way of obtaining the maximum molecular weight from density and X-ray crystallographic data is described by Dr. J. Monteath Robertson, Dr. R. P. Linstead and Mr. C. E. Dent. They show that, in the case of metallic compounds of phthalocyanines, it gives values agreeing with those obtained by the combining ratio method.

Prof. F. H. Newman and H. J. Walke adduce reasons supporting Klemperer's view that the natural

radioactivity (emission of electrons) of rubidium is due to the presence of an isotope of mass 86.

From the fact that independent intelligence test-scores fit 'tetrad' formulæ which equate to zero, Spearman has deduced that a general intelligence factor g must exist in addition to special abilities. Prof. G. H. Thomson explains that though such hierarchical tetrad sets may prove the existence of g , they cannot in general measure it unless one of the tests measures general intelligence alone, or unless a 'singly-conforming' test is added.

In the case of animals which can live under various temperature conditions (non-stenothermic) there may be temperatures which are favourable for growth and not for breeding. Prof. J. H. Orton finds that the oysters in the Fal Estuary show a larger spring growth than those in the River Blackwater; he ascribes this to the fact that the temperature in the Fal Estuary remains longer in the spring between 10° and 15°C . (which promotes growth), while that of the River Blackwater rises more quickly to 15° to 20°C . (which facilitates reproduction).

Dr. H. A. Shapiro has investigated the effect of extracts of the anterior pituitary, of pregnancy urine, and of male urine, upon the mating instinct of the South African clawed toad. He finds that coupling is induced by the first two extracts. He deduces, among other things, that the anterior pituitary is involved in the mating reflex and that a female stimulus initiates the response in the male.

Mr. A. J. Butler describes the technique of preparing cellulose film casts from the etched surface of corals and other fossils. Such casts show structural details and have the advantage that a number of identical reproductions can be readily obtained to serve as type specimens.