should show only a slightly greater latitude effect than at sea-level up to the heights corresponding to a pressure of 100 millibars. The difference in the geometry of the counter telescopes used by the different authors and the statistical accuracy of the results do not yet permit a quantitative comparison.

A detailed report of this work together with other results will be published shortly elsewhere.

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H. J. Bhabha.
S. V. Chandrashekhar Aiya.
H. E. Hoteko.
R. C. Saxena.

Cosmic Ray Research Unit,
Indian Institute of Science,
Bangalore,
April 10, 1945.

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EFFECT OF THE RATE OF TRICKLE ON THE MASS OF THE DROP

In determining the surface tension of a liquid by the drop weight method it is necessary that the drops should be formed sufficiently slowly so that the conditions at the time of separation of each drop from the nozzle of the tube are truly static or very nearly so. The rate of formation of drops in Lord Rayleigh's[1] experiments was about a drop per minute, while Edser[2] and Worsnop and Flint[3] recommend a rate even as high as 60 drops per minute. An interesting point was revealed when actually an experiment was performed to bring out the effect of the rate of trickle on the mass of the drops formed. The results (Fig. 1) show that for small rates of trickle, the mass of the drop increases very slowly, but for larger rates it increases very rapidly to large values when the discrete drops are about to merge into a continuous jet.

A drop separates from the main bulk of the liquid at the nozzle when its weight just exceeds the pull due to Surface Tension. With increasing rate of trickle the liquid rushes out with an acceleration; this effectively reduces the weight of the drop and the drop grows to larger dimensions till the effective weight pulls it down. According to Lord Rayleigh for static conditions (*i.e.*, rate of trickle $n = 0$) $m_0 g = 3{\cdot}8\,rT$ where m_0 is the weight of the drop when $n = 0$; r is the external radius of the capillary orifice and T is the surface tension of the liquid. If "a" represents the equivalent acceleration of the liquid when the rate of

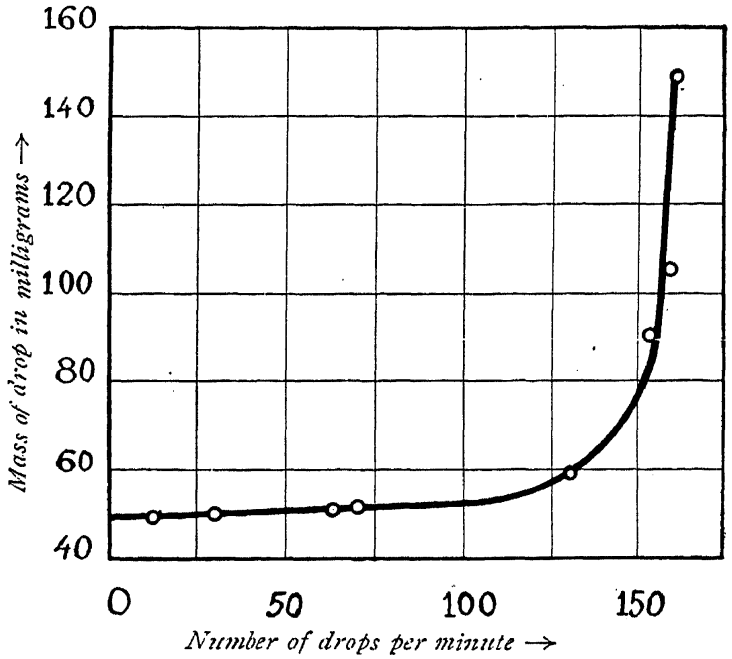

FIG. 1. Variation of the mass of drop with the rate of trickle

trickle is n drops per minute and m is the corresponding mass of the drop, we may write

$$m(g - a) = 3{\cdot}8rT = m_0 g \quad \therefore m\left(1 - \frac{a}{g}\right) = m.$$

Now the acceleration "a" depends on "n" the rate of trickle. Therefore we write $m[1 - f(n)] - m_0$ where $f(n) = 0$, when $n = 0$. Since the experimental curve is nearly a rectangular hyperbola $f(n)$ probably has the form kn^x where k and x are constants.

In order to confirm the above explanation qualitatively experiments were carried out using strong electric fields to aid the acceleration of gravity. The drops actually separate out at an earlier stage of growth than when such an aiding force is absent.

Department of Physics,
Nowrosjee Wadia College,
Poona 1, V. N. Kelkar.
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OCCURRENCE OF FLUORSPAR NEAR MALHAN, JUBBALPUR DT., C.P.

This note reports the occurrence of a workable deposit of fluorite near Malhan (N. 80° 31′; E. 23° 40′), in the Jubbalpur District, C.P. The place is about 7 miles S.W. of Rupaund Railway Station on the Katni-Bilaspur branch of B.N.R. The country rock consists of dolomite with intercalations of slate and chlorite schists of Dharwar age. The strike varies from E.-W. to N.W.-S.E. and the dip is northwards varying from 30° to 90°. The dolomite is often found to be intruded by quartz veins which vary in width from 4′ to ½″. There are also basic dyke rocks intruded into the country rock.