

All relevant data such as the number of convolutions, the distance travelled, and the time required are thus obtained at one stroke.

Increase in the quantity of air let out through the generating tube brings out generally a number of vortex rings at once. By suitably controlling the conditions of flow only two rings would be obtained.

Fig. 2 shows two stages of the rings obtained on a film kept in continuous rotation.

It was observed that the two rings were essentially different in their origin. The first one started from the very end of the tube and travelled on, the number of convolutions increasing.

The second one, however, originated at a fixed distance (as far as could be ascertained visually) away from the tube. Its progress was not so rapid as that of the first.

To the knowledge of the authors the difference is striking and further work in this connection is in progress.

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<sup>1</sup> *Phil. Mag.* 1931, 11, 1057.

#### A New Method of Oximation.

HAQ, RAY AND TUFFAIL-MALKANA<sup>1</sup> showed that anthraquinone and histazarine dimethyl ether readily gave oximes in pyridine solution. Later on, Cook, Hewett and Lawrence<sup>2</sup> prepared the oxime of *trans*-hexahydroanthrone by following an identical procedure but made no reference to the earlier work. They, however, gave publicity to the usefulness of this method of oximation in difficult cases. This method is particularly suitable for the preparation of those oximes which are formed with great difficulty.

It has now been found that flavone and  $\alpha$ -naphthylflavone react with hydroxylamine in aqueous pyridine solution under the following conditions:

A mixture of flavone (0.1 g.), hydroxylamine hydrochloride (0.15 g.) in water (0.5 c.c.), pyridine (1 c.c.) was refluxed on a sand-bath for 4 hrs. and then poured into dilute acetic acid when cold. The precipitated solids

crystallised from hot dilute acetone in colourless needles, m.p. 237°. Yield quantitative. Found: N, 5.95;  $C_{15}H_{11}O_2N$  requires N, 6.19%. Similarly,  $\alpha$ -naphthylflavone gave the substance  $C_{19}H_{13}O_2N$  (colourless needles, m.p. 181° after crystallisation from hot dilute acetone) on similar treatment. Found: N, 4.85;  $C_{19}H_{13}O_2N$  requires N, 4.8%.

The structure of these substances are under investigation but presumably they are true oximes.

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<sup>1</sup> *J.C.S.*, 1934, 1328.

<sup>2</sup> *J.C.S.*, 1936, 79.

#### Nutritive Value of Parboiled Rice.

IN recent years, considerable amount of attention has been drawn to the high nutritive value of parboiled rice. Evidence has been adduced to show that during the process of parboiling vitamin B<sub>1</sub> penetrates into the endosperm layers so that in spite of even high polishing, the anti-neuritic vitamin is not entirely lost.<sup>1-5</sup>

The basis of the general nutritive value of parboiled rice has so far remained rather obscure. The observations of McCarrison and Norris,<sup>6</sup> Joachim and Kandiah,<sup>7</sup> Codd and Peterkin,<sup>5</sup> Basu and Sarkar<sup>8</sup> and others would indeed suggest that parboiled rice is not very different in composition from raw rice derived from the same variety. Recent studies by the present authors would show that parboiled rice polished to the same degree is generally slightly richer in both Nitrogen and Phosphorus than the corresponding specimens of raw rice.

This would not however entirely account for the superior nutritive value of parboiled rice to that of raw rice.

It is well known that irrespective of the variety chosen, parboiled rice is generally darker in colour than the corresponding raw rice. The colouring matter (which is derived in part from the husk) can be removed to some extent by polishing, but the final product rarely ever attains the desired degree of whiteness. In view of this and the fact that parboiled rice is generally consumed by the poorer classes of people,