If μ denotes the integral molecular concentration of the solution and α the ratio x_2/x_1, then the term $x_2 - x_1$ varies, during the transformation (1)→(2), from the value $\mu(\alpha - 1)$ to $\mu\left(1 - \frac{1}{\alpha}\right)$. The phase (2) appears at the temperature

$$\vartheta + \frac{R\vartheta^2}{L}\mu(\alpha - 1);$$

the phase (1), however, does not disappear entirely until the temperature

$$\vartheta + \frac{R\vartheta^2}{L}\mu\left(1 - \frac{1}{\alpha}\right)$$

is reached. In the case of nitrobenzene we may probably admit that $\alpha < 1$.

In Fig. 1 are shown the probable coexistence lines

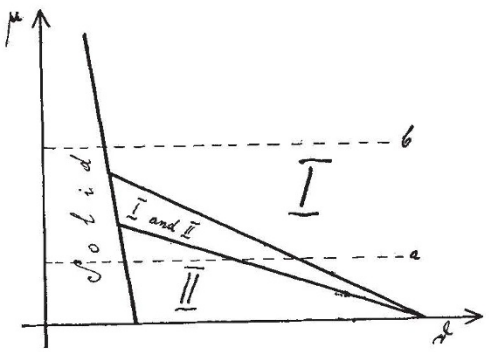

FIG. 1.

of the various phases of nitrobenzene. The dotted line *a* corresponds to Mazur's numerical data, the line *b* expresses results which would be found with samples of a less degree of purity.

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Proof of Stability of Poiseuille's Flow

IN some recent papers[1] it is shown that there exists an absolute analogy concerning the question of stability of

(1*a*) disturbances being symmetric about the axis, of P.'s flow (= steady flow through a straight pipe of uniform circular section).	(1*b*) two dimensional disturbances of the steady flow between two parallel planes, the velocity being a linear function of the distance y from the axis.
(2*a*) three dimensional disturbances of P.'s flow.	(2*b*) two dimensional disturbances of the steady flow between two parallel planes, the velocity being a parabolic function of the distance y from the axis.

It was, therefore, concluded that the investigation of (2*b*) would elucidate also the question of stability of (2*a*). To make the investigation of (2*b*) possible, the problem was divided into four parts according to the following scheme:

(1) α small, αR large	(2) α large, αR large
(3) α small, αR small	(4) α large, αR small

$\alpha = 2\pi/\lambda$ being determined by the wave-length, λ, of the disturbance (R = Reynolds's number). Since in the limit of vanishing viscosity (that is, $\alpha R \to \infty$) there exists the solution $\alpha = c = 0$, $\psi = 1 - y^2$, which can be regarded as representing a degenerate oscillation of the undisturbed flow, the most important case will be α small, αR large.

It was possible to integrate the problem approximately by dividing the stream function ψ into an even and an odd part, by reducing the differential equation of the fourth order to a differential equation of the second order and by complex (Laplace) integration of the latter equation, expanding asymptotically the particular solutions, parameter and argument both being large. The even part gives the following transcendental equation for $c = \beta/\alpha$: $e^{(1+i)z} = i$, z being $\left[\sqrt{c} - (1-c)\,ln\,\frac{1+\sqrt{c}}{\sqrt{1-c}}\right]\sqrt{\frac{\alpha R}{2}}$, that is, when c is small, $z = \frac{1}{3}c^{3/2}\,(2\,\alpha R)^{1/2}$.

The roots are in this limit

$$c = \left[\frac{3\pi}{2}\,(2n + \frac{1}{2})\right]^{2/3} \Big/ (\alpha R)^{1/3} \cdot \frac{\sqrt{3} + i}{2}.$$

Since something similar is true for the odd part and also for α large, αR large, the absolute stability of Poiseuille's flow is established.

The detailed proofs and a discussion of the streamlines of the disturbed motion will be given in a paper to appear in the *Ann. d. Phys.*

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Science Teaching in Schools

IN his letter to NATURE of October 1 Mr. Shearcroft accepts the gloomy picture of the state of science teaching in schools with which we are becoming familiar. He writes as a teacher of science, but there are many other teachers of science who will not agree with him. Writing with the authority of the Committee of the Science Masters' Association I wish to put on record our opinion, shared we are certain by most of our members, that the science teaching in the schools of to-day is making an important and valuable contribution to the educational development of our young people and is helping them towards an understanding of their future surroundings which they would not obtain without it. We make no extravagant claims, but we do claim that we are giving those who leave the schools some insight into the method of separating the important from the unimportant, the true from the false, and we ask for a more just appreciation of the contribution of the science teacher to the intellectual make-up of the pupils in the schools.

The Science Masters' Association exists for the advancement of science teaching in schools and