Errata: Statistical Mechanics of Transport Processes I. General Theory

John G. Kirkwood

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entire isotherm has been determined, the "liquid intermediate" phase transforms into a condensed phase at a film pressure of about 20 dyne cm^{-1}. The nature of this transition has not as yet been determined.

The second-order change reported here has also been found with other solids when n-heptane is the adsorbate, and also with n-butane and triptane at 0°C on several solids. The work done to date with n-butane indicates that the observed phenomena are the same as those found for graphite above the critical temperature. The work of Orr[7] strongly suggests that similar transformations take place when argon, nitrogen, and oxygen are adsorbed on ionic solids at temperatures in the neighborhood of 77°K. The writers are planning to repeat his work and, by

[7] W. J. C. Orr, Proc. Roy. Soc. London **173A**, 349 (1939).

taking more points, to determine whether or not these are phase transitions of the second order in the low pressure region. First-order transitions with nitrogen at these temperatures have been observed.

The results with graphite show, even when the adsorbed film is above the critical temperature of the liquid expanded film, that the increase of the pressure of the film transforms the gas into a phase which, below the critical temperature, does not appear until much higher pressures are attained. This behavior has its counterpart in the solidification of helium and other gases above their critical temperatures. Thus, in films formed on the surfaces of solids by adsorption, phase transformations from the gas are possible, even above the critical temperature of the liquid expanded.

Errata: Statistical Mechanics of Transport Processes

I. General Theory

JOHN G. KIRKWOOD
Baker Laboratory, Cornell University

IN this article an important distinction was made between the distribution function $f^{(n)}$ (**p**, **q**; t) at time t and its time average $\bar{f}^{(n)}$ (**p**, **q**; t) over an interval τ subsequent to the instant t. The two functions are related in the following manner,

$$\bar{f}^{(n)}(\mathbf{p}, \mathbf{q}; t) = \frac{1}{\tau} \int_0^\tau f^{(n)}(\mathbf{p}, \mathbf{q}, t+s) ds.$$

Unfortunately, serious confusion was caused by a series of typographical errors introduced between galley and page proof, in which the bar was omitted at random from the functions $\bar{f}^{(n)}(\mathbf{p}, \mathbf{q}; t)$. These errors are to be corrected as follows:

1. $\bar{f}^{(N)}$ to replace $f^{(N)}$ on the left side of the second of Eqs. (14).
2. $\bar{f}^{(n)}$ to replace $f^{(n)}$:
   (a) On left side of second of Eqs. (20).
   (b) In integrand of Eq. (21).
   (c) On left side of the third of Eqs. (46).

(d) On left side of the differential equation, Eq. (47).
(e) On right side of the first of Eqs. (48).
3. $\bar{f}^{(1)}$ to replace $f^{(1)}$:
   (a) In the integrands on the right sides of Eqs. (23), (24), (25), (26), and the second of Eqs. (60).
   (b) On the left side of the differential equation, Eq. (49).
   (c) On both sides of the differential equation, Eq. (59).
   (d) First sentence, last paragraph, page 194.

Two additional errors of a minor character are also to be noted:

4. In the first of Eqs. (70), C_l, the concentrations in moles/cm^3 should replace C_l, the concentrations in molecules/cm^3.
5. The expression $6\pi\eta\mathbf{p}_i/m_i$ should replace $6\pi\eta m_i\mathbf{p}_i$ at the end of the eighteenth line from the bottom of the second column, page 198.