this procedure was repeated every few days. The results are shown in Figure 7 where the volume change, $V_t/V_{2\ days}$, is plotted vs. the pigment ratios. Again, the largest increase occurred in the same region of composition as observed previously. The decrease at low ratios results because all the pigment was not settled out at the time of measuring. However, this experiment proves definitely that tridimensional structures slowly build up between ZnO and TiO_2 and are unable to pack as closely together in water as do the individual particles.

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• *Letter to the Editor*

Glyceride Type Distribution Rule Calculations

With reference to the letter of Hammond and Jones on the calculation of Restricted Random Glyceride Distribution (1) I wish to state the following:

1) The principle underlying the calculation of glyceride type structure according to the Glyceride Type Distribution Rule (2a) (Restricted Random Distribution is an extension of the G.T.D. Rule to the detailed structure of the individual glycerides in the glyceride types) consists in the interchange, according to chance, of one saturated acid in the trisaturated glycerides factor (i.e., trisaturated glycerides required by chance distribution minus trisaturated glycerides actually present) with the unsaturated acids in the monosaturated and triunsaturated glycerides required according to chance distribution, the former being partly converted to disaturated glycerides and the latter to a mixture of mono- and disaturated glycerides. The proportions of disaturated glycerides thus formed from triunsaturated glycerides is uauslly small and may be left out for practical calculations (2a). The equations given (2b,1) are only for these practical calculations for usual ranges of saturated acid contents which is rarely between 60 and 67% with simultaneous minimum proportions of trisaturated glycerides.

2) When the percentage proportions of saturated acids to be thus interchanged with triunsaturated glycerides become equal to, or more than, one third of the latter, the non-trisaturated portion of the fat automatically becomes converted to a mixture of mono- and disaturated glycerides, and their proportions may be calculated as shown elsewhere (3). For natural fats with no trisaturated glycerides, and saturated acids between 61.8 and 66.6%, as also for various other possibilities, this is the procedure according to the G.T.D. Rule.

The possibility of triunsaturated glycerides having negative values and the glyceride types adding to more than 100% hence do not exist, according to the G.T.D. Rule as defined by the author (2a). This rule has now been found to hold good for as many as 70 different natural fats without a single exception so far.

3) The distribution suggested by Hammond and Jones (1) differs from the G.T.D. Rule in the following respects: a) The former assumes two separate independent equilibria, one for trisaturated glyceride formation and the other for non-trisaturated glyceride formation in the same droplet of depot fat, whereas there is only a single equilibrium according to G.T.D. Rule. b) The former does not take into consideration the fact that the proportions of mono- and diglycerides formed in the earlier stages will be those required according to chance distribution, whereas the latter takes care of this. As such, any partial agreement between the values by the two distributions appears to be purely fortuitous and is devoid of theoretical significance.

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