absorption spectrum taken in nujol showed a character-istic strong peak at 1,100 cm⁻¹ attributable to 'C–O–C' deforming, a strong ester carbonyl absorption at 1,740 cm⁻¹, and a medium absorption at 1,650 cm⁻¹ which is attributable to 'C = C' stretching. There was no band in the hydroxyl region near 3,600 cm⁻¹. The combined alkaline and acid hydrolysis gave a mixture of fatty acids and aldehydes. They were converted into both methyl esters and dimethyl acetals and subjected to vapour-phase chromatography. The gas-chromatographic analy-sis was carried out on an Aerograph Wilkens A–90 C instrument. A silicone 5-ft. column was operated at 225° with hydrogen at a flow rate of about 30 ml./min. The records indicated the presence of hexadecanoic acid, octadecanoic acid and octadecan-1-al.

The present evidence, taken in conjunction with the results reported previously[1-3], gives the structure I for the lipide from egg yolk. On the basis of the investigations reported so far, it is likely that this new class of lipids is widely distributed in Nature.

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Electrical Conductivity of Solutions of Aluminium (III), Gallium (III) and Indium (III) Iodides in Alkyl Iodides

SEVERAL investigations have been devoted to the electrical conductivity of aluminium halides in alkyl halide solutions[1-5]. The conductance of these solutions has been attributed to the formation of some complexes or addition compounds composed of both interacting mole-cules. No investigations on analogous systems with gallium and indium halides have hitherto been per-formed. In order to gain more information of the nature of interaction of MI_3 with RI, where M is alumi-nium, gallium or indium and R is an alkyl radical, the conductances of the solutions of aluminium, gallium and indium triiodides in anhydrous methyl, ethyl and propyl iodides were studied. It should be noted that particular attention has been directed to a thorough purification and drying of the reagents, the electrical conductivity being very sensitive to even small concentrations of various impurities.

The determined values for seven investigated solutions, the molar ratio MI_3 : RI being always $4·2 × 10^{-3}$, are presented in Table 1. From the experimental results it can be readily seen that MI_3 are weak electrolytes in alkyl iodides, and that the complex compounds in these solu-tions, if actually present, have a very weak polar character.

Since the electrical conductivity of the systems under investigation increases with time (rapidly during the first 20–40 min, then slowly during a long period of time), the specific conductivity values given in Table 1 were obtained

Table 1. SPECIFIC CONDUCTIVITY OF MI_3–RI SOLUTIONS ,(M = Al, Ga, In, R = METHYL, ETHYL, PROPYL)

Solution	Specific conductivity × 10⁻⁷ ohm⁻¹ cm⁻²
AlI₃—CH₃I	5·4
AlI₃—C₂H₅I	6·2
AlI₃—C₃H₇I	3·1
GaI₃—C₂H₅I	5·1
GaI₃—C₃H₇I	2·3
InI₃—C₂H₅I	7·0
InI₃—C₃H₇I	6·0

by using the extrapolation method (for $t = 0$) described by Fairbrother and Scott[5]. These authors have attributed the increase of the conductivity of AlBr₃—C₂H₅Br solution to a certain chemical reaction leading to the formation of hydrogen bromide, which could be volatilized off with the ethyl bromide and detected. In order to test this hypo-thesis as regards AlI₃—C₂H₅I solution we have investi-gated the chemical composition of the vapours in equilib-rium with the solution, using a mass spectrometric tech-nique. However, the proportion of the peak heights of ethyl iodide and hydrogen iodide undergo only very slow changes during more than 70 h. Thus, the rapid rise in conductivity of AlI₃—C₂H₅I system cannot be explained in the way proposed by Fairbrother and Scott.

A more detailed description of the present work will be published shortly.

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Effect of Electron Donors on the Isotopic Exchange between Aluminium (III), Gallium (III) and Indium (III) Iodides and Alkyl Iodides

VERY few investigations have been devoted to the isotopic exchange reactions of halogens in AlX_3—RX solutions[1], where X is a halogen atom and R is an alkyl radical. No work on analogous systems with gallium and indium halides has hitherto been published. In the work recorded here, the isotopic exchange reactions of iodine between aluminium, gallium and indium triiodides and methyl, ethyl and propyl iodides have been studied. It should be noted that the reagents were purified and dried with the greatest possible care. The experiments have been carried out in 'all glass' vacuum apparatus, at tem-perature $20 ± 1°$ C, the molar ratio MI_3 : RI varying from $4 × 10^{-3}$ to $6 × 10^{-3}$. The metal iodides were labelled with iodine-131.

The exchange rate was notable in each of the nine investigated systems. In the Al¹³¹I₃—CH₃I solution (the fastest exchange) the equilibrium is reached within less than one minute, while in the In¹³¹I₃—C₃H₇I solution (the slowest exchange) the fraction exchange is equal to 0·11 at the end of the first minute. The exchange rate de-creases with the increase of the atomic number of the metal and the size of the radical.

The addition of small amounts of an electron donor substance (for example, ethyl alcohol, ether, etc.) to the alkyl iodide causes strong 'exchange blocking'. For example, if per each mole of aluminium triiodide 4 moles of ethanol had been added to ethyl iodide, the fraction exchange reached 0·50 in 5 min, while without the addition of ethanol the exchange equilibrium was attained in 3 min. Moreover, within the next 25 min the fraction exchange remained practically constant. The 'exchange blocking' was also observed after adding small amounts of water, n-butyl amine or ether; in the first two cases a precipitate is produced, making the quantitative determ-inations impossible.

The fraction of the radioiodine atoms which do not participate in the exchange when the electron donor is