Correction to "The Stability of Metal Halide Complexes in Aqueous Solution III. The Chloride, Bromide and Iodide Complexes of Bismuth" *

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An error has crept into the calculations of the last column of Table 3B, where the head should read $X_5 \cdot 10^{-6}$ M^{-5} instead of $X_5 \cdot 10^{-7}$ M^{-5}. As a consequence, the values of β_5 and β_6 for the chloride system have come out one power of ten too high. In Table 11, the correct values of log β_5 and log β_6 should therefore read 6.72 and 6.56 (instead of 7.72 and 7.56, respectively).

This correction means that the complex formation curve of the chloride system is much less steep in its upper part than was reported before. It is gratifying however that the new course, presented in the Fig. 1, fits much better than the previous one to the experimental values of $\bar{n}$ which are found from the slope of the C_M, C_A lines of constant E_M. In spite of their considerable random error, these values are therefore on the whole much more reliable than was once believed.

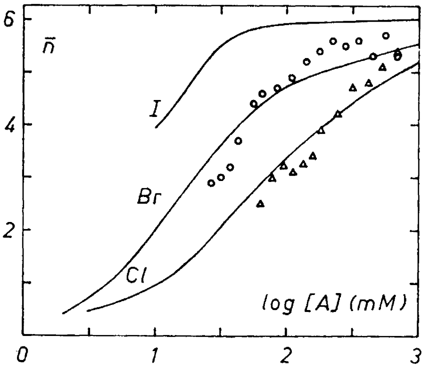

Fig. 1.

The correction also implies that the range of existence of the third and, especially, the fourth complex is in reality wider and that of the fifth complex narrower than was reported in Fig. 3 of the original paper.

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A Convenient Synthetic Route to ^{36}Cl-labelled Aromatic Compounds

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The method generally applied [1] for introducing isotopically labelled chlorine into aromatic compounds is based on the well-known reaction

$$ArH + Cl_2 \rightarrow ArCl + HCl \qquad (1)$$

which has been carried out with chlorine gas containing the isotope in question, generally ^{36}Cl (ArH meaning, in general, any suitable aromatic compound). It is evident from formula (1) that half the amount of chlorine taking part in the reaction is lost as hydrochloric acid. For the sake of economy, it is generally necessary to recover the hydrochloric acid when working with ^{36}Cl in view of the high price [2] of this isotope, the recovered material being used in subsequent runs.

In the present communication, an alternative method of introducing ^{36}Cl into aromatic compounds will be described. This method has the advantage of utilizing in a single step almost all of the radioactive starting material (hydrochloric acid-^{36}Cl) taking part in the reaction, albeit at the price of dilution with inactive chlorine. In the author's work, the latter circumstance does not cause any inconvenience, as the starting material obtained from The Radiochemical Centre, Amersham, England, has a sufficiently high specific activity to allow for about a tenfold dilution with inactive chlorine. Another advantage of the method suggested below is that the somewhat intricate preparation and handling of radioactive chlorine gas is completely circumvented, the aqueous solution of hydro-