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ABSTRACT FORM

PROTEIN EXCLUSION ERROR IN THE ESTIMATION OF
PLASMA OR SERUM ZINC

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On deproteinising a sample, species distributed chiefly in the aqueous phase become relatively more concentrated since they are confined to a volume which is less than the total volume. The effect is small if there is substantial dilution during the deproteinising step, but may be of the order of +5% in the case of Zn, because sensitivity limitations of flame atomic absorption spectroscopy and of colorimetric methods require deproteinisation to be done by mixing the sample with an equal volume of precipitant. There may be considerable amplification of this effect if an attempt is made to recover more Zn by washing the precipitate, and in this case errors of the order of +25% can easily occur. This is most readily understood by noting that the water finally left behind in the precipitate is no longer representative of the aqueous extract, being relatively depleted of Zn. The same principles apply to any species and to any bi- or poly-phasic distribution system.