Corrigendum

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The ratio of the lateral diffusion coefficient to mobility for electrons in argon at 294 K

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An error has been found in the calibration of the pressure gauge used for our experiments. The correction for this error has two consequences: an adjustment of all values in the published Table 1 by an amount ranging from 1·5% to 0·7%, and the elimination of the small (<1%) pressure dependence exhibited by the data in the table and referred to on page 58.

The error arose from the omission of the weight of the unloaded floating element of the dead-weight primary pressure standard in calculating the pressures used for calibrating the quartz spiral manometer. The error was found by G. N. Haddad when the gauge was being recalibrated for a further set of experiments. The omission resulted in a pressure-dependent systematic error which ranged from 3·3% at the lowest pressure (~300 kPa) to 0·9% at the highest pressure (~1200 kPa). Fortunately the errors in the tabulated data for D_T/μ are considerably less, since the lowest pressures (subject to the largest errors) were used for the measurements at the highest values of E/N where D_T/μ is least dependent on E/N.

Table 1. Corrected values of D_T/μ for electrons in argon at 294 K

The percentage differences between these revised values and the values published originally are shown in the 'Correction' column

E/N (Td)	D_T/μ (volt)	Correction (%)	E/N (Td)	D_T/μ (volt)	Correction (%)
0·0010	0·0407	0·7	0·010	0·511	1·0
0·0012	0·0473	1·1	0·012	0·575	0·8
0·0014	0·0561	0·9	0·014	0·633	0·8
0·0017	0·0725	1·4	0·017	0·708	0·8
0·0020	0·0914	1·4	0·020	0·773	0·9
0·0025	0·1253	1·5	0·025	0·865	0·9
0·0030	0·1608	1·5	0·030	0·944	0·9
0·0035	0·1956	1·4	0·035	1·012	0·9
0·0040	0·229	1·4	0·040	1·070	0·9
0·0050	0·290	1·2	0·050	1·173	0·9
0·0060	0·344	1·3	0·060	1·261	1·0
0·0080	0·434	0·8	0·080	1·408	1·2
			0·100	1·525	1·1

Table 1 here shows the corrected data. Unfortunately, application of the corrections means that the entries in Table 1 of the original paper no longer correspond exactly to the values of E/N listed in the table. Accordingly the data were plotted on a large scale and the 'best estimate' values determined from the curve of best fit. The maximum deviation of any experimental point from this curve was 0·3%, and the systematic pressure dependence already referred to was removed.

The e–Ar momentum transfer cross section derived in the companion paper (Milloy *et al.* 1977) is not significantly affected by the error. Haddad has redetermined the cross section from the revised data using the procedure described by Milloy *et al.* but with a least-squares fitting routine based on the MERT formula of O'Malley (O'Malley and Crompton 1980) in the energy range 0–1·0 eV (Haddad and O'Malley 1982, present issue pp. 35–9). The maximum difference between the cross sections derived with the original data and with the corrected data is about 2% in the energy range 0·25 to 0·4 eV. These differences are less than those that result from applying the different fitting procedures to the same set of experimental data, and considerably less than the estimate of uncertainty in the cross section quoted in the original paper.

The authors are grateful to Dr Haddad for finding the error in the pressure gauge calibration and for reanalysing the experimental data.

References

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