and the results are given in table 5 and 6. In fig. 4 the experimental values of the solubility function are compared with calculated values.

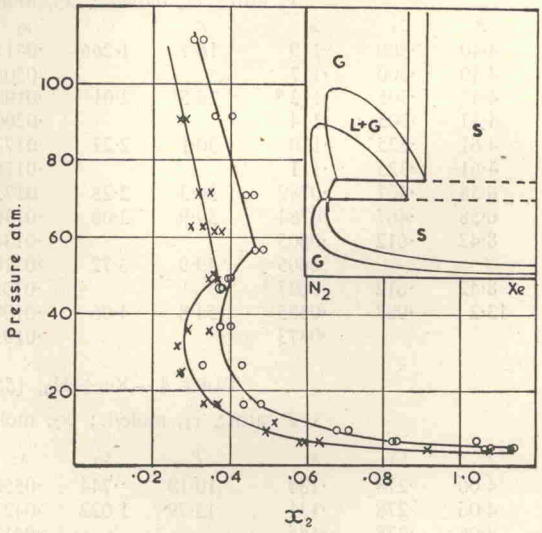

FIG. 2.—Solubility isotherms of Xe + N_2.

× 150° K.

⊙ 155° K.

Inset : extrapolated complete isotherms, not to scale.

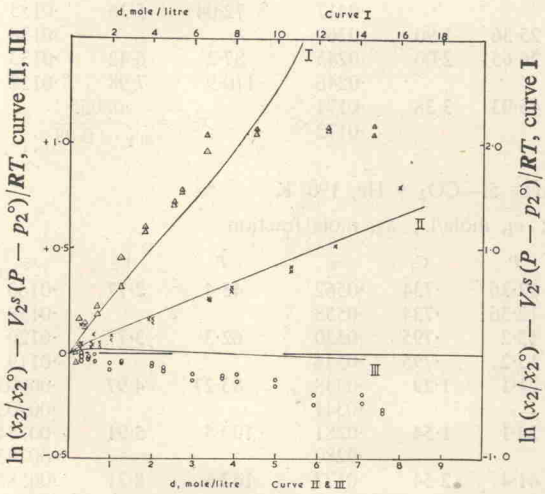

FIG. 3.—Solubility functions of Xe systems, 155° K.

Curves calculated by eqn. (5), points, experimental values.

I, △ Xe + N_2, scale on right.

II, × Xe + H_2, scale on left.

III, ⊙ Xe + He, scale on left.

In tables 2 and 4, P is the pressure in atm at which the solubility was measured, c_1 the concentration in mole/l. of the solvent gas, and x_2 the measured concentration, as mole fraction, of the heavy component in the gas phase.

TABLE 2.—Xe + N_2, 155° K P, atm; c_1, mole/l.; x_2, mole fraction

P	C_1	x_2	P	C_1	x_2	P	C_1	x_2
4·74	·303	·108	16·2	1·34	·0473	56·6	6·60	·0462
4·81	·307	·107			·0439			·0482
4·9	·321	·114	26·6	2·47	·0432	70·4	9·01	·0438
4·9	·321	·114			·0330			·0459
6·92	·500	·104	36·6	3·64	·0402	91·3	12·47	·0358
6·92	·500	·0830			·0376			·0404
6·92	·500	·0822	46·1	5·01	·0377	111·6	14·69	·0328
9·5	·731	·0714			·0371			·0305
		·0682	48·9	5·41	·0393			
					·0400			

$$x_2^\circ = \frac{1{\cdot}1194}{c_1 + 1{\cdot}12} \simeq \frac{0{\cdot}039956}{C_1 + 0{\cdot}04}$$

TABLE 3.—Xe + He, 155° K

P, atm; c_1, mole/l.; x_2, mole fraction

P	C_1	x_2	P	C_1	x_2	P	C_1	x_2
4·40	·300	·119	16·7	1·266	·0311	81·8	5·91	·0067
4·40	·300	·117			·0308			·0070
4·47	·305	·113 *	26·5	2·01	·0198	99·9	7·09	·0059
4·47	·305	·114			·0200			·0062
4·61	·325	·110	30·1	2·27	·0173	107·5	7·59	·0055
4·61	·325	·111			·0176			·0054
6·58	·467	·0789	30·3	2·28	·0175 *			
6·58	·467	·0784	39·9	3·00	·0130			
8·42	·612	·0605			·0134			
		·0605	49·9	3·72	·0110			
8·42	·612	·0627 *			·0109			
13·2	·987	·0385	54·8	4·06	·0100			
		·0373			·0103			

$$x_2^\circ = \frac{0.1599}{c_1 + 0.16} = \frac{0.03996}{c_1 + 0.04}$$

* analyzed by mass spectrograph

TABLE 4.—Xe + H_2, 155° K

P, atm; c_1, mole/l.; x_2, mole fraction

P	C_1	x_2	P	C_1	x_2	P	C_1	x_2
4·06	·278	·134	10·19	·744	·0550	52·58	3·93	·0158
4·06	·278	·131	13·79	1·022	·0425			·0160
4·06	·278	·145			·0417	72·04	5·36	·0135
4·47	·317	·118	25·36	1·90	·0260			·0138
4·47	·317	·118	26·65	2·00	·0245	87·2	6·42	·0133
6·92	·511	·0762			·0246	110·9	7·98	·0152
6·99	·521	·0764	45·03	3·38	·0171			
7·87	·565	·0700			·0172			

$$x_2^\circ = \frac{.08055}{c_1 + 0.08} = \frac{0.03996}{c_1 + 0.04}$$

TABLE 5.—CO_2 + He, 190° K

P, atm; c_1, mole/l.; x_2, mole fraction

P	C_1	x_2	P	C_1	x_2	P	C_1	x_2
4·7	·255	·141	12·36	·734	·0562	45·4	2·77	·0160
		·140	12·36	·734	·0558			·0158
4·7	·255	·148	13·2	·795	·0530	62·3	3·77	·0120
4·7	·255	·139	13·2	·795	·0536			·0119
4·9	·270	·140	21·1	1·29	·0338	83·27	4·97	·00903
5·0	·275	·136			·0341			·00905
5·29	·295	·124	25·1	1·54	·0281	100·5	5·91	·00784
5·29	·295	·124			·0280			·00793
8·8	·515	·0774	41·4	2·54	·0177	142·5	8·21	·00583
8·8	·515	·0796			·0178			·00576

$$x_2^\circ = \frac{0.1700}{c_1 + 0.17} = \frac{0.04247}{c_1 + 0.04}$$

TABLE 6.—CO_2 + H_2, 190° K

P atm; c_1, mole/l.; x_2, mole fraction

P	C_1	x_2	P	C_1	x_2	P	C_1	x_2
5·32	·298	·128	27·3	1·69	·0288	76·5	4·60	·0137
5·32	·298	·128			·0289			·0134
5·6	·317	·131	36·3	2·24	·0238	99·7	5·90	·0117
5·6	·317	·123	43·9	2·70	·0203	101·0	5·98	·0116
10·2	·610	·0697			·0202			·0117
10·2	·610	·0693	60·6	3·69	·0169	111·6	6·55	·0110
15·6	·957	·0484			·0160			·0115
		·0478						

$$x_2^\circ = \frac{.0856}{c_1 + .086} = \frac{0.04247}{c_1 + 0.04}$$