Fifth Report of the Committee on Atoms of the International Union of Chemistry.

Chairman: F. W. ASTON.

Members: N. BOHR, O. HAHN, W. D. HARKINS, F. JOLIOT, R. S. MULLIKEN, M. L. OLIPHANT.

The following changes in the Table are recommended:

The symbol (*M*) for Mass Number is replaced by symbol (*A*) in conformity with general usage.

LITHIUM.—The figure 7·9 for the percentage abundance of ^{6}Li is probably too high owing to the uncertain correction for the isotope effect in free evaporation. A lower value 7·5 is now recommended in accordance with the measurements of HOFF LU (*Physical Rev.*, 1938, **53**, 845).

CARBON.—The very complete investigations of NIER and GULBRANSEN (*J. Amer. Chem. Soc.*, 1939, **61**, 697) show that the percentage abundance of ^{13}C varies appreciably in Nature. The mean value 1·1 is now recommended, which is in excellent agreement with the earlier work of BROSI and HARKINS (*Physical Rev.*, 1937, **52**, 472).

CHROMIUM and IRON.—Percentage abundances calculated from the work of NIER are recommended (*ibid.*, 1939, **55**, 1143).

MOLYBDENUM.—More accurate photometric results are now available from the work of MATTAUCH and LICHTBLAU (*Z. physikal. Chem.*, 1939, *B*, **42**, 288).

EUROPIUM.—The work of LICHTBLAU with improved plates indicates that the heavier of the twin isotopes of this element is slightly the more abundant (*Naturwiss*, 1939, **27**, 260).

HAFNIUM.—A new rare isotope has been discovered by DEMPSTER, and its abundance estimated to be 0·3% (*Physical Rev.*, 1939, **55**, 794).

URANIUM.—The measurements of NIER indicate the presence of the third rare isotope 234 (U II), and provide accurate figures for the abundances of the other two (*ibid.*, 1939, 150).

INTERNATIONAL TABLE OF STABLE ISOTOPES FOR 1940.

(Numbers in italics are rough or indirect measurements, in parentheses doubtful. w = weak isotope, abundance not determined.)

Symbol.	Atomic number, *Z*.	Mass number, *A*.	Relative abundance, %.
H	1	1	99·98
D		2	0·02
He	2	4	100
Li	3	6	7·5
		7	92·5
Be	4	9	100
B	5	10	20
		11	80
C	6	12	98·9
		13	1·1
N	7	14	99·62
		15	0·38
O	8	16	99·76
		17	0·04
		18	0·20
F	9	19	100
Ne	10	20	90·00
		21	0·27
		22	9·73
Na	11	23	100
Mg	12	24	77·4
		25	11·5
		26	11·1
Al	13	27	100
Si	14	28	89·6
		29	6·2
		30	4·2
P	15	31	100
S	16	32	95·1
		33	0·74
		34	4·2
		(36)	(0·016)
Cl	17	35	75·4
		37	24·6
A	18	36	0·31
		38	0·06
		40	99·63
K	19	39	93·4
		40	0·01
		41	6·6
Ca	20	40	96·97
		42	0·64
		43	0·145
		44	2·06
		46	0·0033
		48	0·185
Sc	21	45	100
Ti	22	46	7·94
		47	7·75
		48	73·45
		49	5·52
		50	5·34
V	23	51	100
Cr	24	50	4·49
		52	83·78
		53	9·43
		54	2·30
Mn	25	55	100
Fe	26	54	6·0
		56	91·6
		57	2·1
		58	0·28
Co	27	57	0·2
		59	99·8
Ni	28	58	66·4
		60	26·7
		61	1·6
		62	3·7
		64	1·6
Cu	29	63	*68*
		65	*32*
Zn	30	64	50·9
		66	27·3
		67	3·9
		68	17·4
		70	0·5
Ga	31	69	61·2
		71	38·8

Symbol.	Atomic number, *Z*.	Mass number, *A*.	Relative abundance, %.
Ge	32	70	21·2
		72	27·3
		73	7·9
		74	37·1
		76	6·5
As	33	75	100
Se	34	74	0·9
		76	9·5
		77	8·3
		78	24·0
		80	48·0
		82	9·3
Br	35	79	50·6
		81	49·4
Kr	36	78	0·35
		80	2·01
		82	11·53
		83	11·53
		84	57·11
		86	17·47
Rb	37	85	72·8
		87	27·2
Sr	38	84	0·56
		86	9·86
		87	7·02
		88	82·56
Y	39	89	100
Zr	40	90	48
		91	11·5
		92	22
		94	17
		96	1·5
Nb	41	93	100
Mo	42	92	15·5
		94	8·7
		95	16·3
		96	16·8
		97	8·7
		98	25·4
		100	8·6
Ru	44	96	*5*
		(98)	
		99	*12*
		100	*14*
		101	*22*
		102	*30*
		104	*17*
Rh	45	101	0·1
		103	99·9
Pd	46	102	0·8
		104	9·3
		105	22·6
		106	27·2
		108	26·8
		110	13·5
Ag	47	107	52·5
		109	47·5
Cd	48	106	1·4
		108	1·0
		110	12·8
		111	13·0
		112	24·2
		113	12·3
		114	28·0
		116	7·3
In	49	113	4·5
		115	95·5
Sn	50	112	1·1
		114	0·8
		115	0·4
		116	15·5
		117	9·1
		118	22·5
		119	9·8
		120	28·5
		122	5·5
		124	6·8
Sb	51	121	56
		123	44
Te	52	120	w
		122	2·9
		123	1·6
		124	4·5
		125	6·0
		126	19·0
		128	32·8
		130	33·1
I	53	127	100
Xe	54	124	0·094
		126	0·088
		128	1·90
		129	26·23
		130	4·07
		131	21·17
		132	26·96
		134	10·54
		136	8·95
Cs	55	133	100
Ba	56	130	0·101
		132	0·097
		134	2·42
		135	6·6
		136	7·8
		137	11·3
		138	71·7
La	57	139	100
Ce	58	136	w
		138	w
		140	89
		142	11
Pr	59	141	100
Nd	60	142	25·95
		143	13·0
		144	22·6
		145	9·2
		146	16·5
		148	6·8
		150	5·95
Sm	62	144	3
		147	17
		148	14
		149	15
		150	5
		152	26
		154	20
Eu	63	151	49·1
		153	50·9
Gd	64	152	0·2
		154	1·5
		155	21
		156	22
		157	17
		158	22
		160	16
Tb	65	159	100
Dy	66	158	0·1
		160	1·5
		161	22
		162	24
		163	24
		164	28
Ho	67	165	100
Er	68	162	0·25
		164	2
		166	35
		167	24
		168	29
		170	10
Tm	69	169	100
Yb	70	168	0·06
		170	2
		171	9
		172	23
		173	17
		174	37
		176	12
Lu	71	175	97·5
		176	2·5
Hf	72	174	0·3
		176	5
		177	19
		178	28
		179	18
		180	30
Ta	73	181	100
W	74	180	0·2
		182	22·6
		183	17·3
		184	30·1
		186	29·8
Re	75	185	38·2
		187	61·8
Os	76	184	0·018
		186	1·58
		187	1·64
		188	13·3
		189	16·2
		190	26·4
		192	40·9
Ir	77	191	38·5
		193	61·5
Pt	78	192	0·8
		194	30·2
		195	35·3
		196	26·6
		198	7·2
Au	79	197	100
Hg	80	196	0·15
		198	10·11
		199	17·03
		200	23·26
		201	13·17
		202	29·56
		204	6·72
Tl	81	203	29·1
		205	70·9
Pb	82	204	1·5
		206	23·5
		207	22·7
		208	52·3
Bi	83	209	100
Th	90	232	(100)
U	92	234	0·006
		235	0·71
		238	99·28