

9. Very Slight Earthquakes.

In Tables XV and XVI, I give the elements of motion of those earthquakes, in which Tokyo was exactly, or very nearly, on the boundary of the area of disturbance ; the average results being as follows :—

Hitotsubashi (23 earthquakes) :

Mean $2a=0.47$ mm, $T_o=0.74$ sec.

Hongo (22 earthquakes) :

Mean $2a=0.35$ mm, $T_o=0.64$ sec.

Central Meteorological Observatory (46 earthquakes) :

Mean $2a=0.44$ mm, $T_o=0.83$ sec.

It will be noticed that the $2a$'s thus found are nearly identical with the values of the constants j found respectively for the three places of observation. (See § 13.)

The maximum accelerations corresponding to the above mean values of $2a$ and T_o are as follows :—

For Hitotsubashi,.....	$A=17.0$ mm/s ² .
„ Hongo.....	„ 16.9 „
„ Central Met. Observatory.,	„ 12.6 „

The mean value of the accelerations thus found is

$$A=17.0 \text{ mm/s}^2, *$$

which is to be regarded as the acceleration of the earthquake motion just sufficiently strong to be perceptible to us without instrumental aid, that is to say, the acceleration of the slightest *macro-seismic motion*. (See the *Publications*, No. 10, p. iv.)

* The results for the Central Meteorological Observatory excepted. See the foot-note to Table XVI.

TABLE XV.—SLIGHTEST EARTHQUAKES.

Hitotsubashi and Hongo.

Hitotsubashi.				Hongo.			
Group.	No.	2a (mm).	T ₀ (sec.)	Group.	No.	2a (mm).	T ₀ (sec.)
V	19	1.70	0.84	III	17	0.05	0.60
II	29	0.30	—	V	19	0.50	0.50
„	38	0.35	0.90	II	20	0.16	0.60
VI	48	1.00	0.57	„	29	0.20	0.70
III	49	0.25	0.60	V	44	0.20	—
II	50	0.25	0.62	II	50	0.15	0.50
VI	56	0.45	0.78	VI	56	0.24	0.79
II	56	0.40	0.70	II	60	0.10	0.23
„	61	0.32	0.86	„	61	0.32	0.30
V	71	0.35	0.91	V	43	2.00	1.30
II	76	0.35	0.75	VI	103	0.50	—
IV	92	0.25	0.57	III	124	0.14	0.34
VII	94	0.45	0.83	V	174	1.20	1.13
V	97	0.43	0.73	„	192	0.20	0.67
IV	82	0.25	0.71	II	194	0.40	—
V	43	5.00*	—	VII	197	0.50	1.16
VI	103	1.10	0.81	V	212	0.14	0.84
III	115	0.10	—	„	214	0.10	0.56
IV	126	0.25	0.82	VII	215	0.20	1.14
V	131	0.75	0.75	II	216	0.24	0.43
IV	137	0.63	0.79	„	219	0.10	0.20
VI	138	0.17	0.68	IV	220	0.10	0.25
IV	161	0.13	0.51				
Mean.	.....	0.47	0.74	Mean.	.....	0.35	0.64

* Excepted in taking the means.

TABLE XVI.—SLIGHTEST EARTHQUAKES.

Central Meteorological Observatory.

Group.	No.	2a (mm).	T ₀ (sec.).	Group.	No.	2a (mm).	T ₀ (sec.).
III	17	0.2	1.2	III	115	Small.	—
IV	18	0.2	0.3	„	118	„	—
V	19	1.0	1.8	V	122	1.2	0.5
II	20	0.4	—	III	124	0.3	0.5
„	29	Small.	—	V	131	0.2	0.9
V	44	0.7	1.4	VI	134	0.4	1.4
VI	48	1.6	2.1	IV	137	0.2	1.8
III	49	Small.	—	V	144	0.8	1.5
II	50	Very small.	—	II	152	Small.	—
„	53	„	—	IV	161	„	—
V	54	„	—	„	163	Very small.	—
VI	56	0.7	—	V	173	0.2	0.2
II	59	Small.	—	II	188	0.2	0.6
„	60	„	—	V	189	0.2	0.6
„	61	0.4	0.2	„	192	Small.	—
V	71	0.2	1.5	II	194	0.4	0.5
II	76	0.2	0.5	III	195	Small.	—
IV	79	Small.	—	II	208	0.2	0.5
„	89	0.2	0.8	V	212	Small.	—
VII	94	Small.	—	„	214	0.5	0.6
VI	103	0.4	1.2	II	216	0.3	0.5
V	104	0.2	1.0	„	219	Small.	—
IV	114	0.4	0.4	Mean.*	.....	0.44	0.83

* In deducing the mean values of 2a and T₀, those earthquakes whose 2a was *small* have been excluded. This would cause the value of the 2a to be slightly larger than the true one. As, moreover, the T₀ is for these earthquakes are not given, the mean values of the 2a and T₀ here found have not been taken into account in the deduction of the general mean value of A (page 60).