

## 2. Distribution of the Earthquake Origins.

Pl. I shows the geographical distribution of the origins of the earthquakes which were observed in Tokyo between Sept. 1887 and July 1889, each of the red points marking the position of a seismic epicentre; except for Tokyo, where there were 96 local shocks, these being represented by a single sign (X).

The majority of the epicentres are grouped into five zones II, III, IV, V and VI (shaded in the map) whose boundaries have been determined by drawing free-hand curves through the mean positions of the broken lines connecting the successive outer-most points of each group.\* The axes or lines drawn through the middle of these zones may be regarded as marking the weak places in the Kwanto provinces and under the sea to the north-east of the Honshiu, along which earthquakes disturbing Tokyo most frequently originate.

Of the five zones, II coincides with a part of the *Tone-gawa* valley; while III and IV extend, also in nearly the same direction, respectively from the south-eastern part of Shimosa to the north-western part of Musashi, and from the north of Kazusa to the centre of Kai. On the other hand the zone V is situated under the sea at a mean distance of about 55 km from the coast of Kazusa, Hitachi and Iwaki, to which it is parallel. VI is to be regarded as the northern continuation of V. Strong and large earthquakes most frequently originate from the zone V.

Pl. II shows the distribution of the origins of the earthquakes which happened between Sept. 1887 and July 1889 in Central Japan, but were not felt in Tokyo. The origins are grouped into six zones A, B, C, D, E and F. The last zone is really composed of two branches  $F_1$  and  $F_2$  joined normally to each other. C, D, and

---

\* The zone VI is not indicated in the map.

$F_1$  are identical respectively with the zones I, II and III in Pl. I, while A is nearly identical with the zone V.

From Pl. I and Pl. II it will be seen that the earthquake origins in the central and eastern portions of Honshiu are distributed in two systems of zones ; one nearly in the direction ESE—WNW and the other in the direction NEN—SWS. The former may be regarded as being radial and the latter concentric, or parallel, to the arc formed by the group of the Japanese Islands.

The division into seven groups, I to VII, of the 220 earthquakes given in Table I, which is in accordance with the geographical distribution of the origins as indicated in Pl. I, is as follows.—

Group	I.	Local earthquakes, recorded only in Tokyo.			
„	II.	Earthquakes which originated in zone II.			
„	III.	„	„	„	III.
„	IV.	„	„	„	IV.
„	V.	„	„	„	V.
„	VI.	„	„	„	VI.
„	VII.	„	of miscellaneous origins.		

### 3. Origins and Areas of Disturbance of the different earthquakes.

In Table II, I give the data relating to the position of the origins and the areas of disturbance of the different earthquakes, arranged in the following order.—

- (1) Earthquake Number and Group.
- (2) Intensity of motion at epicentre, or, in case of a submarine origin, that at the most strongly shaken district ; the intensity for non-destructive earthquakes being distinguished as *strong*, *weak* or *slight*.\*

---

\* See the *Publications*, No. 10, p. iii.