9. 伊豆大震調査概要

昭和五年十一月二十六日の伊豆大震に關し本所は其發生以前及以後に於て次記の如き調査を完了し又は之れに從事しつつある。既に其二三のものは彙報第八號第三册以降に報告せられてゐる。其他は調査終了次第本彙報に報告する筈である。

（イ） 地震計測

昭和五年二月伊豆伊東地方に地震が頻發するに及び兼任所員今村教授指導の下に地震教室那須信治及當研究所の岸上冬彦兩氏により三月六日より網代、宇佐美、伊東、川奈、初島ノ五個所に於て地震觀測を開始し七月上旬迄之を繼續してゐた。伊東地方の地震が一時稍鎭靜したので伊東外の地震計を一時取り外したが大震發生の直前に再び地震が續發するに及び觀測を再始するの必要を認め十一月二十五日に前記の那須、岸上の兩氏は地震計を携へて伊豆に赴き岸上氏は網代に於て那須氏は伊東に於て觀測を開始し其翌朝大震に遭遇した。現今は上記の伊東、網代二個所の外尙冷川、吉原、小山の各地に於て地震觀測が爲されてゐる。尙丹那に於ては地表及其直下の隧道內に各一個づつの不銹鋼製の全然同一型の地震計を据附けて地表及地中の振動の比較研究を爲してゐる。

（ロ） 地殼傾斜計測

大震發生前に於ては昭和五年三月中旬より伊東及川奈に石本式熔融水晶製傾斜計を据附け十月下旬迄石本、高橋兩所員により觀測が繼續せられた。其結果は既に前號に報告してある。止むを得ざる事情から大地震の直前に觀測を中絶した事は甚だ遺憾とするところである。大地震發生後五日目より丹那隧道內に於て西側に三揃東側に一揃を据附けて觀測をしてゐる。

（ハ） 隧道內の精密水準測量

水管式水準器による丹那隧道內全長に涉る水準測量は高橋所員により地震發生後直ちに準備に着手せられ既に昨年十二月二十五日より計測が實施せられてゐる。

（ニ） 丹那斷層兩側の相互移動測定

丹那隧道内に顯れた辷り鏡面には「ダイヤルゲージ」を取附け辷り面の相互移動が計測せられつつある。此計測は昨年十二月二十日から高橋所員の手により開始せられた。

尙之れと同時に地表に於ける斷層兩側の相互移動を計測する爲め丹那盆地の一地點に自記微動計を取附くる事は坪井所員の手により計畫されつつあり。今月下旬より測定に着手し得る見込である。

（ホ） 丹那盆地に於ける水準及三角測量

丹那盆地に於ける地殻變動を見出す目的を以て該地に多數の水準點及三角點を設置し坪井所員により時々檢測が繰返へされつつある。

（ヘ） 地質調査

大震發生前に於ては伊東を中心とせる伊豆東海岸地方地質調査が昨年四月津屋所員によりて行はれ其報告は彙報第八號第四冊に揭載されてゐる。

大震直後より今日尙引續き津屋、大塚兩所員により震災地方の地質調査が行はれてゐる。

（ト） 建築物調査

地震直後齊田所員及所長により震災地の建物の調査が行はれた。

（チ） 伊東地方水準測量

昨年中に於て伊豆東海岸地方の水準測量が二回施行せられ其成果は彙報第八號第三冊及本號に揭載してある。伊豆國全體に涉る測量は現今陸地測量部の手により行はれてゐるから本所は之れを計畫せぬ。

（リ） 三角測量

伊豆國全體に涉る二等三角測量を二等點十七點に對して行ふ外尙該地及四圍にある一等點十二點に對し一等三角測量を施行して土地の水平移動を見出す計畫である。此作業は陸地測量部に委囑した。同部に於て近々之れに着手する筈である。

（ヌ） 光現象調査

今回の大震には光現象殊に著しかりし爲め寺田所員及武者囑託により之れに關する研究及調査が行はれてゐる。其研究の一部は既に帝國學士院記事第六卷第十號に報告せられてゐる。

（昭和六年一月二十日　所長）

9. *Outline of Investigations of the Great Idu Earthquake.*

Our investigations of the Idu Earthquake of November 26, 1930, previous to and after its occurrence, are as described below. Some of them have already been reported in our Bulletin Vol. VIII, Parts 3 and 4; others will be reported as soon as the investigations are completed.

(a) Seismometry.

As swarms of earthquakes occurred near Itô in the province of Idu since February, 1930, Mr. Nasu and Mr. Kishinouye started seismometrical observation from March 6, under the supervision of Professor Imamura, at five places comprising Aziro, Usami, Itô, Kawana and Hasima and continued the observation until early in July. The occurrence of earthquakes in the Itô district having become less frequent the observation was temporarily discontinued, except that in Itô. Owing to the fresh occurrence of swarms of earthquakes, however, the necessity of re-opening the observation was realised, just before the outbreak of the great earthquake. Accordingly the above mentioned gentlemen were again despatched to Idu on November 25 and one of them began observations at Itô, and the other at Aziro and the next morning they encountered the great earthquake. At present, the seismometrical observation is being carried out at Hiyekawa, Yosiwara and Koyama, besides at Itô and Aziro. Moreover at Tanna two seismometers made of stainless steel and of exactly the same type are placed, one on the ground surface and the other in the tunnel directly below it, and the comparative study of the after shocks on the crustal surface and in the interior of the crust is being done.

(b) Measurement of the Tilting of the Crust.

Previous to the occurrence of the great earthquake the Ishimoto tiltmeters made of fused silica were set in Itô and Kawana, and Mr. Ishimoto and Mr. Takahasi continued the observation from the middle of March 1930 until last October. This result has already been reported in the last issue. It is very regrettable that the observation was discontinued just before the great earthquake, owing to unavoidable circumstances. From the fifth day after the occurrence of the great earthquake three sets of the instruments were placed on the western side of the interior of the Tanna Tunnel and one set on the eastern side, and the observation is still being carried on.

(c) Precise Levelling in the Tunnel.

The levelling along the whole length of the bored portion of the Tanna Tunnel with water tube levels was contemplated directly after the occurrence of the earthquake by Mr. Takahasi and the measurement was carried out from the 25th. of last December.

(d) Measurement of the Relative Movement of Both Sides of the Tanna Fault.

To the slickenside appearing in the Tanna Tunnel, dial gauges have been fitted, and the mutual movement of the sliding surfaces is under observation. This measurement was started by Mr. Takahasi from

December 20, 1930. At the same time, in order to measure the relative movement of both sides of the fault on the surface of the ground, the setting of self-recording micrometers at the Tanna Basin is now under preparation by Mr. Tsuboi; the measurement is expected to be started towards the end of this month.

(e) Levelling and Triangulation in the Tanna Basin.

In order to investigate the movement of the crust, numerous bench marks and triangulation points have been set and Mr. Tsuboi is repeating the survey.

(f) Geological Investigations.

Previous to the occurrence of the great earthquake, the geological investigation of the eastern district of Idu with Itô as the center was carried out by Mr. Tsuya in April, 1930, and the report was published in the Bulletin Vol. VIII, Part 4. The geological investigation of the whole province of Idu is now being carried on by Mr. Tsuya and Mr. Otsuka.

(g) Investigation of Buildings in the Disturbed Area.

The investigation of buildings in the devastated area was carried out by Mr. Saita and the Director, just after the great earthquake.

(h) Levelling of the Itô District.

The precise levelling along the eastern coast line crossing Itô was done twice last year, and the results are published in Vol. VIII, Part 3 and in the present issue.

The survey over the whole province of Idu being at present carried on by the Land Survey Department, this Institute does not take further steps.

(i) Triangulation.

The secondary triangulation over the whole province of Idu will be carried out for 17 secondary points, and further the primary triangulation will be executed for 12 primary points in this district and surroundings. This work having been entrusted to the Land Survey Department, they will begin the work immediately.

(j) Luminous Phenomena.

An investigation into luminous phenomena accompanying earthquakes, which were particularly remarkable on the occasion of the great Idu earthquake is being done by Mr. Terada and Mr. Musha. A preliminary report was published in the Proceedings of the Imperial Academy Vol. VI (1930), No. 10.

(January 20th., 1931. The Director.)