

12. Tripartite Observations of Microseisms in Shōnai Plain, Yamagata Prefecture.

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Amplitude of microseisms is generally considered to be larger on alluvial plain than on hard rocks. Shōnai plain is thickly covered with alluvial soils. This observation was made to find the relation between microseisms and subsoil condition, and between microseisms and damage of Shōnai earthquake of 1897. The method and instruments used were the same described in the former papers about microseisms in Yama-

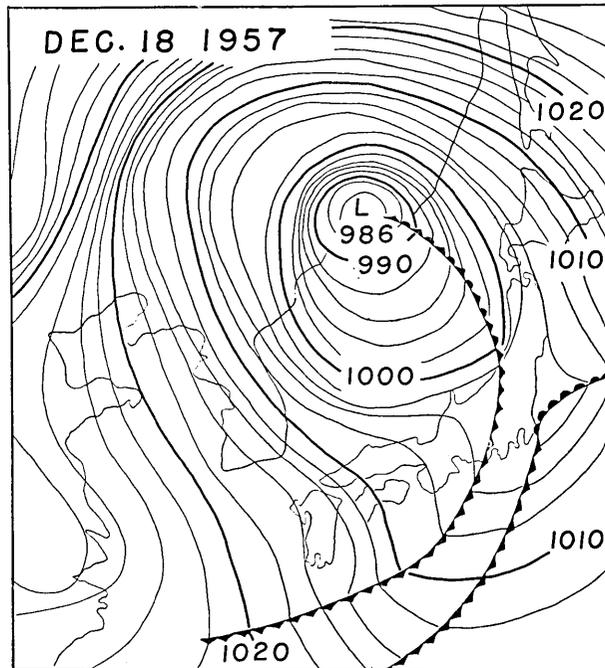


Fig. 1. Weather map.

gata Prefecture¹⁾.

On Dec. 12, 1957, a cyclone appeared on the northern part of Eastern China Sea, and on 13 it passed Japan Sea becoming violent (986 mb at the centre). After then it went north east in direction to the Kuriles (Fig. 1). Microseisms grew large on 13, but unfortunately observations could not be made for the electric supply was disrupted by the storm.

The stations were set at the Nakasone public hall A, the North-Hirata branch office of the Sakata city office B, and a farmer's warehouse C (Fig. 2).

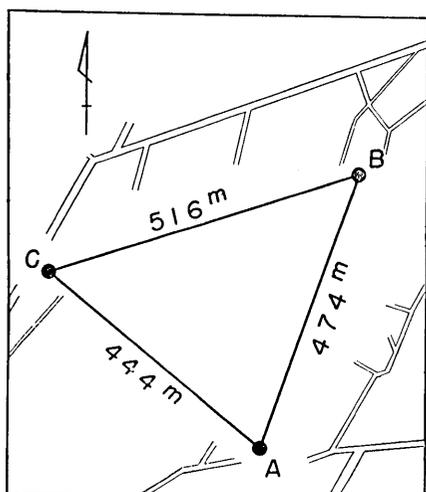


Fig. 2. Observation net.

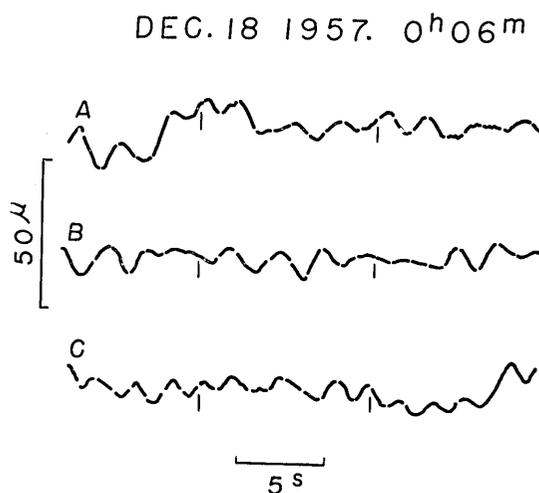


Fig. 3. Records of microseisms.

A portion of the record is shown in Fig. 3, and results of tripartite observations in Fig. 4. The direction of microseismic waves were almost opposite to the position of the cyclone centre. The velocity of propagation was calculated as 820 m/s. The value was small as expected. Mean period of vibration was obtained as 2.4 seconds, then mean wave length was reduced as about 2 km. The value was not different from those obtained at Sakata city²⁾. The results may show characteristics of weak ground for earthquake.

Data at 0^h16^m On Dec. 18 were treated under two different reference points A and C in the triangle ABC to check the difference of

1) F. KISHINOUE and I. SHIDA, *Bull. Earthq. Res. Inst.*, **34** (1956), 301-306.

2) F. KISHINOUE and I. SHIDA, *Bull. Earthq. Res. Inst.*, **24** (1956), 301-306; **37** (1959).

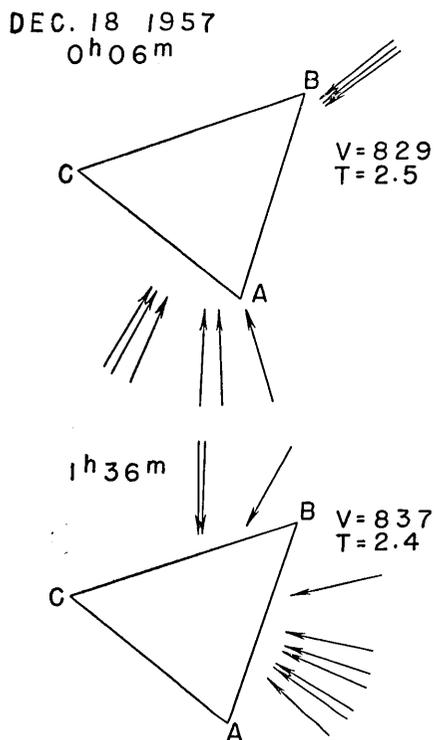


Fig. 4.

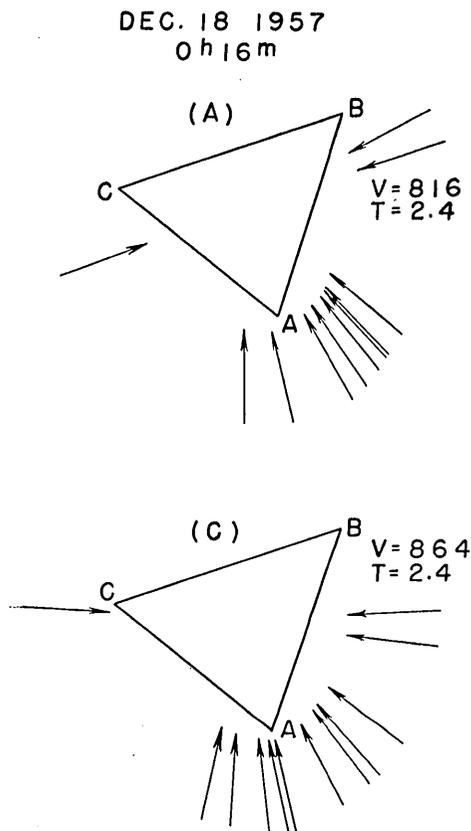


Fig. 5. Check of calculation.

calculation process. The results are shown in Fig. 5, and the difference may be small.

Lastly the authors express their thanks to the staff of the Office of Sakata City for their aid in the study.

12. 庄内平野における土地脈動三点観測

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厚い沖積層の上にあると考えられる庄内平野の平田において脈動の測定をした。ここは 1897 年の地震の時に被害の大きかった所である。1957 年 12 月で著しい大風が吹いたが、その時は電線が切

れて停電があつたり故障が多く十分な観測はできなかつた。12月18日に漸く測定ができた。その結果、脈動の伝播方向は低気圧の中心の方に向かない。伝播速度は 820 m/s で、周期は 2.4 秒となり波長は約 2 km と計算される。この値は酒田市の第 2 回目の測定の結果に近い。

計算の仕方によつて、どの程度の誤差がでるか 0^h16^m の観測結果をつかい、A を中心として計算した場合と C を中心として計算した場合を示した、見られる通り大差はない。
