157. *Results of Revision of Precise Levelling in Tohoku Districts.*¹⁾

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Revision of precise levelling was recently carried out along the routes, Fig. 1, (1) Hunabasi, via Mito, Taira, Sendai, Isinomaki, Kamaisi to Miyako along Pacific coast, (2) Kamaisi via Tôno to Kurosawaziri, and (3) Kurosawaziri via Yokote to Akita. The last two routes connect the Pacific side with the Japan Sea side, across NE-Japan. The vertical displacements of bench-marks obtained by the comparison of the recent results with the results of earlier levellings are shown in Fig. 2 in which the years of the two surveys are given at the bottom of the diagrams.

Detailed discussion of the results will be given later. Here, we may point out some salient features of the vertical movement of the earth's crust revealed in the present result.

(i) In the segment Hunabasi to Mito a down-warping is conspicuous, suggesting that the region near the Lake Kasumiga-ura is still subjected to gradual depression.

(ii) Between Hiragata and Taira a remarkable V-shaped depression is detected. This corresponds to the vicinity of Iwaki coal mine where land-slides are frequent. Besides, the axis of depression seems to lie on the elongation of the valley of R. Natui along which a zone of frequent earthquake origins is located.

(iii) To N of Sendai, the route Sidukawa to Yamada shows a conspicuous northward tilting. This is interesting as this region is conspicuous as regards very large positive anomalies of g .

(iv) As for the route Akita to Kamaisi across the land, we notice a very remarkable tilting between Akita and Yokote, amounting to about 0.3×10^{-5} in 33 years. This suggests a possible explanation of the origin of the conspicuous valley of R. Omonogawa running parallel to the axis of Honsyû. It may be pointed out that the Lake Tazawa is situated on the northern extension of this valley. From Yokote to

1) The full numerical data will be later given in the report to be published in the Bull. Earthq. Res. Inst.

Kamaisi a mode of deformation somewhat like step-faults may be suggested.

Fig. 1.

Fig. 2.

The epochs of the earlier and recent surveys are respectively given below the diagrams. The arrows mark those B.M.'s which were found to be defective for some or other reasons so that they were reconstructed or removed to other places after the recent survey.

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Addendum :—At the reading of the present paper, Prof. Imamura remarked that the remarkable discontinuity shown in the midway between Akita and Omagari corresponds to the fault associated with the severe earthquake on March 15, 1914, at Kowakubi.