great variation at Mommark is presumably to be explained by the following circumstances:

(1) The bench marks at Mommark are established by only 1/8 m^3 concrete (Fælledparken 1 m^3) and at a depth of only 1·4 m (Fælledparken 2·5 to 2·9 m);

(2) A tree was standing very close to bench mark V at Mommark;

(3) A very warm and dry period prevailed during the measurements at Mommark 1947 so that the soil moisture was perhaps influenced during the day because of the suction of the tree roots or otherwise.

Further important details, e.g. concerning *soil temperature* and *soil moisture*, are indicated in a paper distributed during the meeting in Rome, 1954.

THE LAND UPLIFT IN FINLAND DETERMINED WITH TWO LEVELLINGS AS WELL AS WITH WATER LEVEL OBSERVATIONS

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The First Levelling of Finland was carried out in 1892–1910 with a low probable error of ±1·0 mm per km. In the Second Levelling which was started in 1935, the essential part of the common lines with the First Levelling has already been measured and will be completed in 1956. This Second Levelling shows an accuracy of 0·32 mm per km.

By comparing these levellings the first evaluation of land uplift in southernmost Finland was carried out already in 1939. Now, during the last year, Dr. KÄÄRIÄINEN has computed the land uplift for the whole Finnish levelling network which reaches until latitude 66°.

The approximating computation method has been used here. The changes of the observed elevation differences between the First and Second Levellings divided by the interval time have been used as the first approximation to the uplift values. By the aid of these values, each levelling has been reduced to its middle epoch and then adjusted in the usual way.

The differences between the above adjusted elevations give new land uplift values. The second reduction and adjustment are made with these values. The third reduction and adjustment did not change the result significantly and so its result is considered final. The probable error of these relative land uplift values varies between 0·12–0·36 mm per year.

The absolute uplift values have been computed on the basis of the uplift values of the tidal stations. The twelve tidal stations used by Dr. Kääriäinen give the absolute uplift for the whole levelling net with an accuracy of 0·15 mm per year. Thus the accuracy of the absolute uplift values determined by the aid of the levellings varies between 0·18–0·39 mm per year.

The land uplift in Finland increases from 2·2 in the south-east to 9·0 mm per year in the north-west. The curves of equal uplift run very regularly and deviations of 0·5 mm per year appear in only a few areas.

The land uplift values of the tidal stations have been determined by Dr. I. HELA, who has carefully reduced the sea-level records considering first, the eustatic change of the sea level of the oceans, second, the changes of

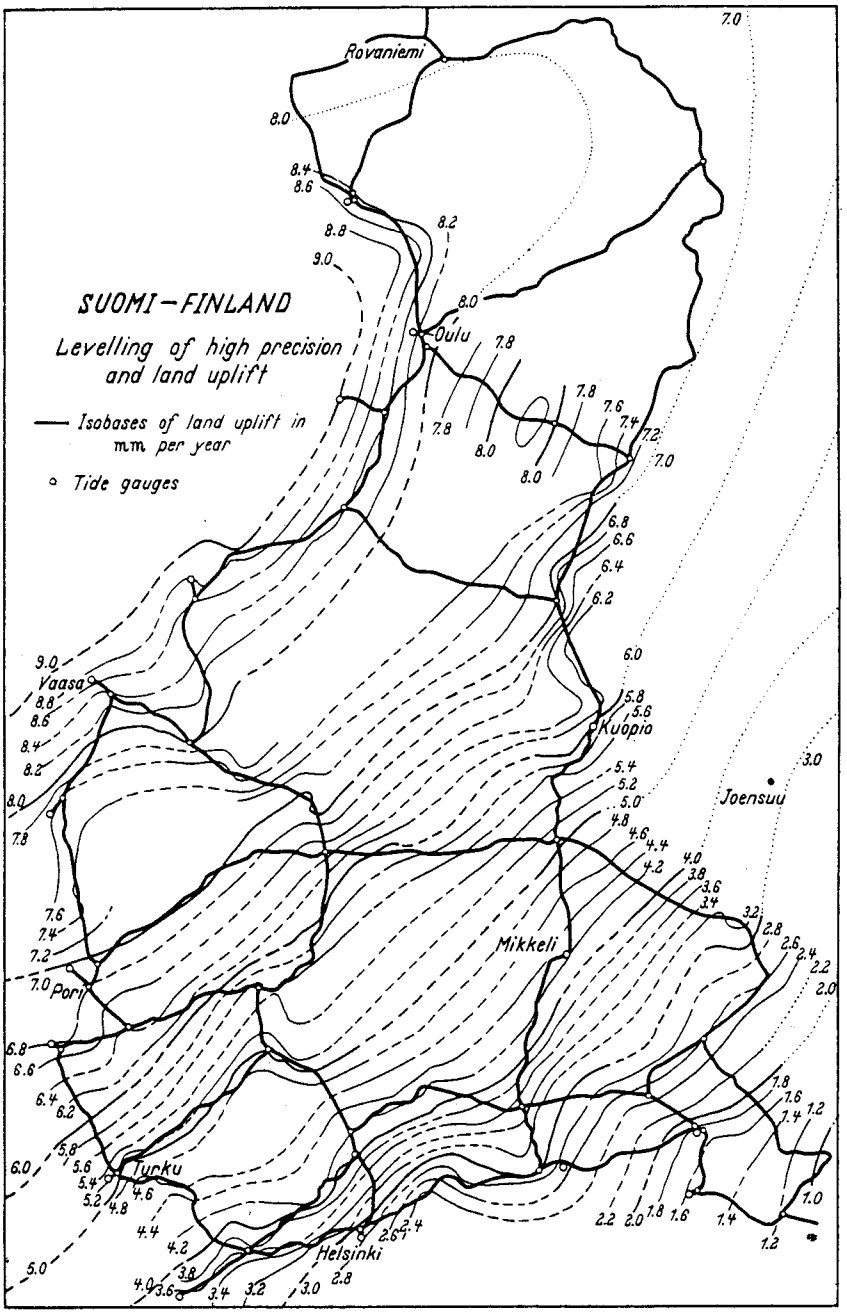

Figure 1. Land uplift in Finland computed by E. Kääriäinen on the basis of the levellings 1892–1910 and 1935–1953.

water amount in the Baltic Sea because of changes in the wind and air pressure and third, the changes of the water amount because of changes in precipitation and evaporation, fourth, the changes in the mean slope of the Baltic Sea because of the changes in wind, air pressure, salinity, and water temperature. The land uplift values of the 13 tidal stations treated by Dr. Hela have a probable error between 0·4–0·8 mm per year.

A very interesting determination of the land uplift has been carried out by Dr. A. SIRÉN, who has compared the water gauge readings in the different ends of the great lakes on the Lake Plateau of Finland. These readings he has reduced empirically according to the wind and the air pressure. By using short levellings as completions, he has found some eight lines, many hundreds of km long, along which he obtains the relative land uplift values. These values agree very well with the levelling values. The deviations are only 0·3 mm per year on an average.

The three investigations, carried out recently by Kääriäinen, Hela, and Sirén, have given us very reliable and accurate values for the land uplift in Finland.

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NOTE SUR LES MOUVEMENTS SÉCULAIRES DANS LE BASSIN MINIER DE VALENCIENNES

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La Section du Nivellement de Précision a eu l'occasion, il y a quelques années, de reprendre des nivellements anciens pour étudier certains mouvements de l'écorce terrestre. Il s'agissait d'examiner s'il s'était produit des variations d'altitudes, dans la région du bassin minier de Valenciennes, en des lieux où l'extraction de la houille ne devait pas avoir d'influence.

À cet effet on a repris des nivellements exécutés précédemment vers 1898 et déjà refaits vers 1934. On a trouvé qu'en dehors des gros affaissements provoqués par l'extraction de la houille, les repères, dans une certaine région, avaient subi des variations d'altitude de quelques centimètres. (Les lignes de nivellement reprises débordaient largement, des deux côtés, la région du bassin minier qu'il s'agissait d'étudier).

Les résultats sont en accord avec ceux qui ont été déduits en Belgique de la comparaison des réseaux de nivellement anciens et nouveaux pour la région située à proximité immédiate du bassin de Valenciennes.