April 30, 1937

Dear Fraser Roberts,

If $d$ stands for density of persons per room, $w$ the number of rooms in the ward, and therefore $wd$ the number of persons, and if $h$ is the measure of incidence of rheumatic heart disease, you can make an analysis based on the identity

$$Sw(h - \bar{h})^2 = Sw(h - \bar{h})^2 + \frac{\sum w(d - \bar{d})^2}{Sw(d - \bar{d})^2}$$

dividing the total variability in heart disease incidence into two portions, the second of which is accounted for by variation in density per room.

If I have your numbers right, the total is 22 degrees of freedom for 23 wards, of which one is absorbed by regression, leaving 21 for deviations.

2. I should not hesitate to do as you suggest in respect of the Otis tests, giving the Otis figures separately for these 30 children.

3. I should certainly be glad to consider a joint paper by Professor Perry and yourself on Rheumatic Heart Disease, but of course Professor Perry must choose what he considers the most suitable medium of publication.

Yours sincerely,