AN
AVERAGE OR "COMPOSITE" TEMPERA-
TURE CHART OF SMALLPOX.

BY

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DURING the smallpox epidemic of 1871 I had charge, as resident medical officer, of a temporary smallpox hospital opened in Shoreditch. The nursing was superintended by sisters of St. Saviour's Priory, Hackney Road (a branch house of St. Margaret's, East Grinstead), and thermometric observations were taken and recorded by them. They were educated ladies who understood what was required and did it conscientiously, and I am satisfied of the accuracy of their temperature records. My colleague, Dr. Sutton, who acted as visiting physician to the hospital, permits me to say that he concurs with me in this.

From their observations, made under my own supervision, I have constructed the average or "composite" charts which are appended.

The first one is based on thirty-one cases, all of which recovered. In none of them was there any evidence of

vaccination, and in each of them the course and characters of the disease were those of smallpox unmodified by vaccination. In each case the temperature was throughout taken three times daily, morning, afternoon, and evening. The chart has been made by adding together the figures indicating the temperatures in the different cases for the same day of the disease and period of the day, and dividing the total by the number of observations forming it. The average temperature for each day of the disease and period of the day thus obtained has been set down on the chart. It does not begin till the third day of the disease, because none of the patients were admitted before that day; and the average temperatures for the early days are based on somewhat fewer cases than the rest of the chart, because some patients were not admitted till later in the disease than others.

So far as I can find no similar chart has been constructed before. The text-books illustrate the course of the temperature by specimen charts of individual cases. But in any individual case the temperature must be modified by circumstances special to that case. In an average chart such as this, the temperature variations due to the peculiarities of any individual case will be almost entirely neutralised by the larger number of other cases in which those peculiar modifying causes were not present. Therefore an average or "composite" chart, such as this, displays what may be called the typical temperature better than the chart of any individual case can do.

Chart II is intended to show the course of pyrexia in smallpox with the greatest possible clearness. It is simply Chart I with the slighter variations entirely neglected and the course shown in a diagrammatic form.

Chart III is based upon thirteen cases in which the temperature was taken every two hours for the period of twenty-four consecutive hours. These observations have been averaged in the same manner as those forming Chart I. In order to show the amount of variation from the average dependent simply on the time of day, as distin-

guished from that due to the different amount of pyrexia in the individual cases, the temperatures have been transposed, so that the lowest temperature in each case should stand at 101° . The dotted lines show the maxima of variation above and below the average.

Chart IV bears the same relation to Chart III as Chart II to Chart I, showing the diurnal fluctuation with the greatest possible clearness.

THERMIC CHARTS.

CHART 1.

Average, or "Composite" Chart of Smallpox.

The average temperatures, morning, afternoon and evening of 31 cases of Smallpox unmodified by vaccination.

CHART 2.

Diagrammatic chart of typical smallpox temperature.

Western Bros. Lith.

CHART 3.

(Period that of Secondary fever.)

Average daily fluctuation of temperature in smallpox with range of variation.

Based upon 13 cases, in each of which the temperature was taken every two hours in the axilla, during 24 consecutive hours.

CHART 4.

Diagram of diurnal variation of temperature in smallpox.