

this thread oscillates from side to side. The thread, which is made either of quartz with a silver coating or of platinum, is extremely delicate, being only one-third or one-half the thickness of a red blood corpuscle, and is so light that it cannot be weighed. A magnified image of the thread is thrown by means of a projection microscope upon the slit of a photographic recording apparatus, strongly illuminated by an electric light. A moving photographic film records the oscillations of the string in the form of a curve of which the ordinates correspond to the intensity of the current in one or the other direction, while the abscissa marks the time. I shall not enter at this time into the details of the construction of an electrocardiographic station, as I deal with the subject fully elsewhere, but I may say that, thanks to the researches of Einthoven and to the mechanical ingenuity of Edelmann in Munich, it is now a comparatively easy matter to set up an electrocardiographic station in a hospital or in a physician's office, and once such a station has been organized it is a relatively simple matter to obtain satisfactory electrocardiograms from normal and abnormal hearts. In Fig. 1 the galvanometric part of Edelmann's electrocardiographic station is illustrated.*

THE TYPICAL ELECTROCARDIOGRAM.

The apparatus is so arranged that upward waves are recorded on the photographic curve when the region of the base of the heart is electro-negative as regards the apex, or when the right side of the heart is electro-negative as regards the left; while downward waves on the curve correspond to times when the apex of the heart is electro-negative as regards the base, or when the left side of the heart is electro-negative as regards the right. The term electro-negative here is used in the sense of the negative pole of a galvanic element; that is to say, when the base of the heart is electro-negative as regards the apex, the action currents will pass in the heart muscle itself from the base of the heart toward the apex, while in the outer part of the circuit the action current will pass from the region of the apex of the heart through the galvanometer toward the base of the heart.

*Only eight of the twenty illustrations accompanying the article could be published, but it is believed that these will be sufficient to make the nature of the methods discussed, understood.—Editor