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### An Intracutaneous Methylene Blue Reaction.

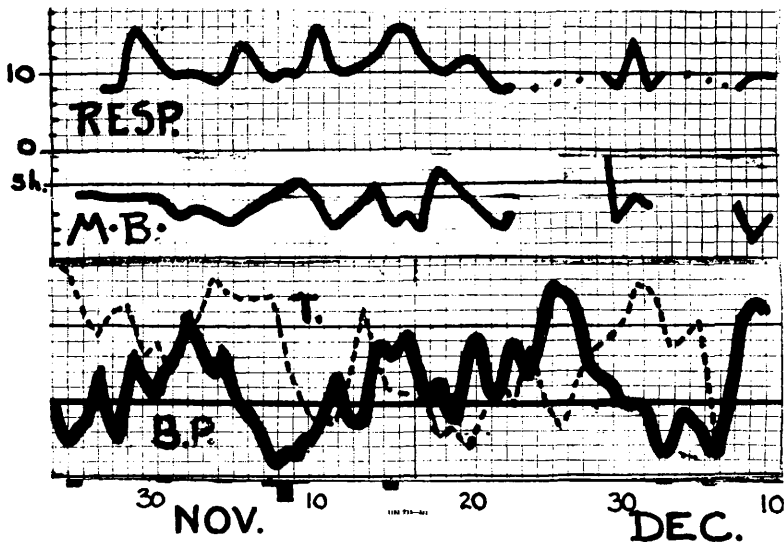
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We have made use of intracutaneous injections of methylene blue to determine relative oxidation-reduction potential of the epithelium, using 2 different dilutions (1-1000 and 1-4000) in distilled water and injecting approximately 0.01 cc. by means of a tuberculin syringe. Two different dilutions are used merely as a matter of convenience for different patients in whom the oxidation reduction potential may show great fluctuations.

When so injected the disappearance time should afford some index of the rapidity of reduction and we have carried out a large number of observations on normals as well as on patients with various diseases.

In a study of individual patients as well as of normal individuals observed day by day, an appreciable difference in the disappearance time can be determined. In an effort to determine the cause of these differences we have noted that meteorological factors apparently are closely associated. Thus the barometric depression of the cyclonic wave is followed by an increase in reduction time (greater oxida-



GRAPH 1.

tion) while a rise in barometric pressure is associated with a reduction in the disappearance time. The respiratory rate of the person (even when kept under uniform temperature conditions) is frequently opposite in trend, *i. e.*, the rate increases when the methylene blue disappearance time is diminishing.

We append a graph of an autonomically unstable patient on whom observations were made from a period of October 25th to December 10th. In this graph the upper curve represents the respiratory rate taken in the morning. It will be noted that it ranges from 8 to 16 per minute. The curve immediately below labeled M.B. represents the disappearance time of the injected dye. The two curves at the bottom of the chart are of meteorological observations. The heavier line marked B.P. being the Chicago barographic record and T, the dotted line, the average daily temperature.

The disappearance time of the injected methylene blue forms almost a mirror image of the barograph.

Without entering into a discussion of the underlying mechanisms we wish at this time merely to call attention to the probable usefulness of methylene blue as an indicator of oxygen reduction potential when so injected.

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### Measurement of the Action-Potentials in the Peripheral Nerves of Man Without Anesthetic.

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Our method to secure records of nerve currents in man is to insert one or both electrodes directly into a peripheral nerve. Two types of electrodes are used: (1) A fine wire of platinum-iridium is inserted into the ulnar nerve while a second wire is inserted under the skin at the point of the elbow. The second wire is the so-called indifferent electrode. (2) The tip of a hypodermic needle containing 2 very fine and well-insulated wires, the electrodes, is inserted into the ulnar nerve. The needle itself is connected to ground, while the electrodes are connected with the amplifier input. Possible advantages of this type of electrode over the well-known form of Adrian are under investigation. Electrodes described under (2) are particularly suitable for measuring action-potentials from a