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Meteorological Reflections in Blood Pressure Rhythm.

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When daily blood pressure reactions of normal persons or patients ill from a variety of diseases are studied, distinct periodic fluctuations can readily be determined. These periods reveal a distinct association with the meteorological status of the time. Depending principally on the cyclonic circulation of the atmosphere, increase in systolic blood pressure is normally associated with increase in barometric pressure (cold front). This period of relative arteriolar and capillary constriction is associated with a shortening of the methylene blue disappearance time previously described[1] and represents a phase of relative tissue anoxemia. This is in turn followed by arteriole and capillary dilatation as tissue stimulation becomes apparent. During this phase the diastolic blood pressure

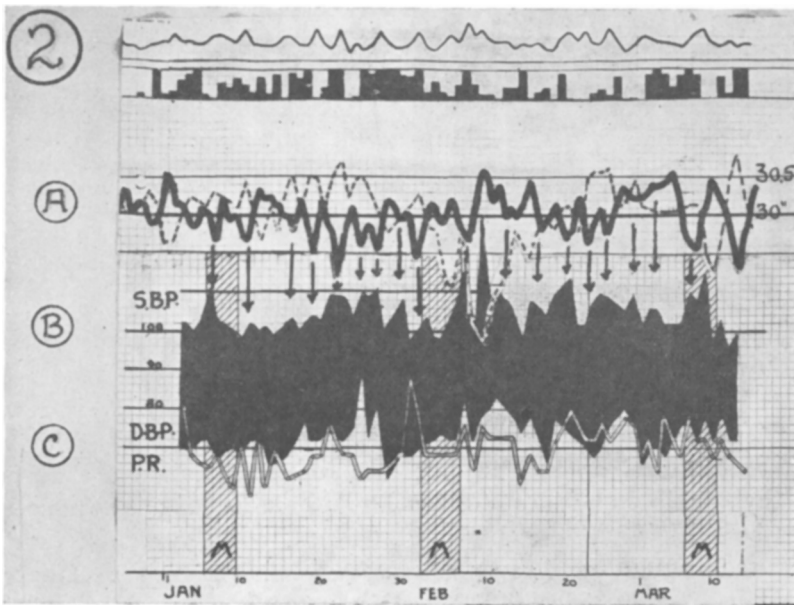

FIG. 1.

[1] Petersen, Wm. F., and Appelman, B., PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 712.

diminishes. Obviously the external temperature would play a rôle in this mechanism.

The appended graph illustrates the close coincidence with alterations in the barometric pressure. The pressor determinations were made in a young woman whose only abnormality is a moderate albuminuria. Studies were made that cover 3 menstrual periods (January 1 to March 13) and the menstrual periods are indicated by 3 cross hatched areas of the chart and marked M. A is the barograph (heavy line). Temperature is indicated by the dotted line. B indicates the systolic blood pressure, and C indicates the diastolic blood pressure. The pulse rate is indicated by the double white line. Arrows have been subtended from low barometric levels to the pressure curves below.

It will be noted that each barometric decline is associated with a systolic pressure increase, the only exception being that of the unusually high pressure recorded on February 9 (unusual cold and psychic effect of a major scholastic examination).

In addition to the meteorological effects which are obvious, the pressor level is of course influenced by the endocrine tide of the sex rhythm. This becomes apparent in this individual in the premenstrual diminution of the diastolic level (January 28 and March 1) and reflects the premenstrual period of stimulation.

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Oxidation-Reduction Studies on the 2, 3-Butylene Glycol-Acetyl-Methyl-Carbinol System in a Fermentation.

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Dissimilation of glucose is brought about by bacteria of the genus *Aerobacter* and among the products of fermentation are acetyl-methyl-carbinol and its reduction product, 2, 3-butylene glycol. It has been suggested that these substances form a reversible oxidation-reduction system. In this case the methylene blue may replace the acetyl-methyl-carbinol as a hydrogen acceptor providing its redox potential lies above that of the carbinol-glycol system. The substances acting as hydrogen donators include the reduced constituents of all the reversible systems present in fermentations whose