their hearts are functionally tested. These people are able to flex or extend heavy dumb-bells until their arm muscles are exhausted and yet the heart muscle will show no exhaustion. That is, no delayed rise in the systolic blood-pressure is obtained. Here it is necessary to use more powerful muscles, capable of doing much greater amounts of work, in order to tire the heart. We employ in these people the 25-pound steel bar which is lifted from the floor to the shoulder, and above the head until the arms are fully extended. Then it is lowered quickly to the floor and raised again above the head. An adult will raise the bar between 6–7 feet, performing thus between 150 and 175 foot-pounds with each raising. In addition to the work arising from the bar movement, the raising of the trunk of the body each time from a stooping to an erect position is equivalent to a certain number of foot-pounds. The exact number is very difficult to estimate, but from some comparative experiments we are now carrying out it apparently lies between 40 and 50 per cent. of the body weight. That is, a man who weighs 150 pounds does between 60 and 75 foot-pounds of work each time that he raises his body from a stooping to an erect position.

The testing of these hearts is necessarily at the present time a comparative matter, and we are unable to obtain absolute values, unless we have a bicycle ergometer at our disposal.

We are much indebted to Dr. Horatio B. Williams, of the department of physiology of Columbia University, for his assistance in supervising the experiments conducted with the bicycle ergometer and for many valuable suggestions made during the course of the work outlined above.

30 (1094)

The influence of infantile scurvy on growth (length and weight).

By ALFRED F. HESS, M.D.

[*From the Board of Health Laboratories, New York City.*]

Infants fed on milk that has been pasteurized (heated to 145° F. for 30 minutes) develop scurvy, provided fruit juices or other anti-scorbutic food is not added to their diet. This scurvy is of a

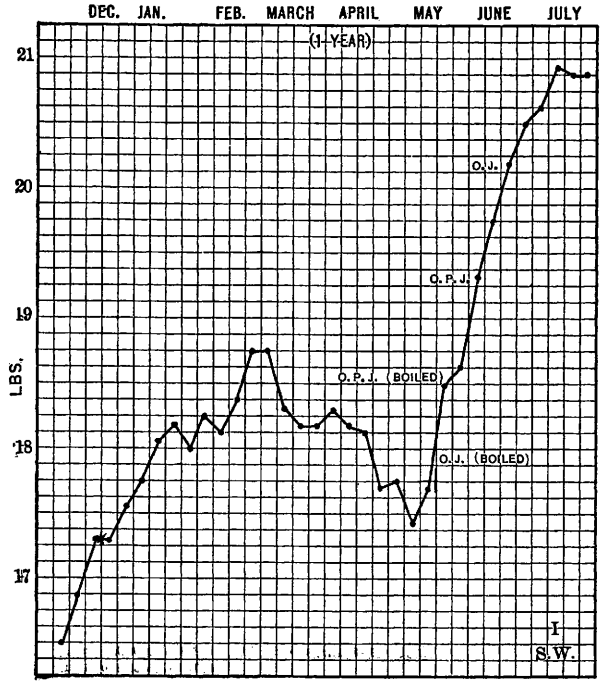

Chart 1.

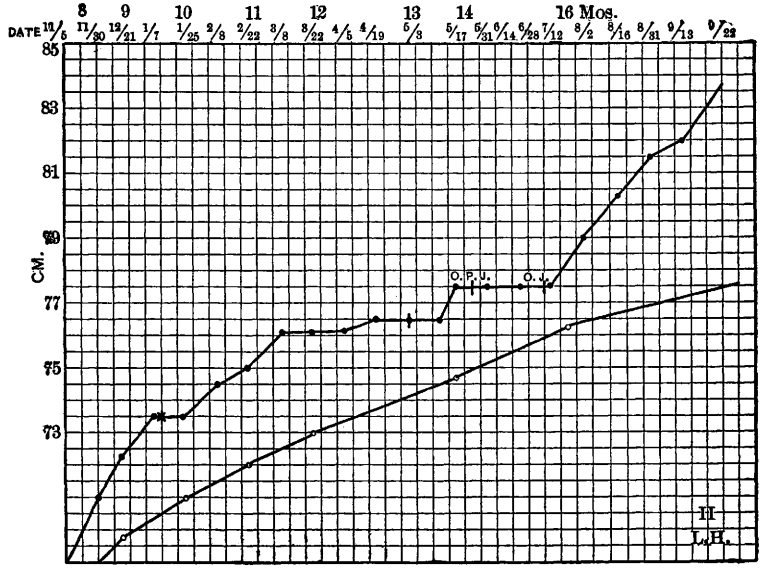

Chart 2.

O. J. = orange juice. O. P. J. = orange peel juice.

* Orange juice stopped.

subacute type, requiring two or more months to manifest itself. Under otherwise excellent surroundings it developed among infants in an asylum, where the babies are weighed daily and measured fortnightly. Its effect on growth could thus be carefully followed. In this connection, three periods may be distinguished: one of about three months when orange juice was given, a second of about four months when the infants did not obtain fruit juice, and a third extending over about a half year, where they once more obtained orange juice.

It was found that in almost every instance a gradual failure to gain in weight accompanied the absence of orange juice from the diet, and that this failure was corrected when the juice of the orange, or the orange peel (even though boiled) was again given (Chart 1). In most cases increase in length was likewise retarded by the scorbutic condition and this stunting was corrected by means of the fruit juices; a notable instance may be seen in Chart 2.

31 (1095)

The action of the depressor nerve on the pupil.

By JOHN AUER.

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Stimulation of the depressor nerve in white rabbits, narcotized by the subcutaneous injection of 5–10 milligrams of morphine sulphate per kilo, usually causes a definite diminution of the pupil. This contraction in typical cases is composed of two stages: a sharp, prompt, short, initial contraction followed by a slower gradual one. Often only the initial contraction is observed, at other times only the slower gradual contraction.

The initial contraction, when present, is obtained as soon as the nerve is stimulated, before the blood pressure begins to fall. The slower contraction occurs while the bloodpressure is falling, and the iris blanches at the same time.

Stronger stimuli are necessary to cause this contraction of the