The same result was obtained on man. The starvation nitrogen was obtained by analysis of the urine and feces during a fasting period of three days, and equilibrium was then established at this level on a mixed diet containing two thirds of the nitrogen in meat, the other one third in cereals. Then for two days the meat nitrogen was replaced entirely by gelatin nitrogen, the other one third remaining the same, and the potential energy supplied was increased from 40 to 48 cal. per kilo of body-weight by giving more cane-sugar, which served at the same time to make the gelatin more palatable. The nitrogen equilibrium was not disturbed during these two days nor on the two following days, when the diet was exactly the same as before the gelatin period.

12 (58). **"The reductions in the body in fever,"** with demonstrations: **C. A. HERTER.**

The author called attention to the influence of temperature on the activity of reduction in the living organism as indicated by intravital infusion of methylene blue. Elevation of the body temperature greatly accelerates the rate of reduction in the tissues. This was demonstrated by means of an intravital infusion of methylene blue in a rabbit, whose body temperature had been elevated to 42° C. through the external application of heat. Simultaneously with this infusion, another infusion was made in a rabbit of approximately equal weight, in which the temperature was maintained at about 39° C. In other respects, the conditions of the infusion were as nearly alike as possible in the two animals. A definite contrast was noted at the close of the infusion between the organs of the two animals as respects their color, the normal rabbit showing more color than the one in which the temperature had been elevated. The differences in the nervous system and the muscles were particularly striking. Even during life, an inspection of the muscles indicated that the reduction was carried on with greater rapidity in the heated rabbit than in the normal one. Previous observations on the reducing action of the animal body under the influence of cold were referred to.

13 (59). **"The measurement of the reducing processes of cells in vitro,"** with demonstrations: **C. A. HERTER.**

An apparatus was demonstrated which had been devised for the purpose of measuring the reducing processes of the different

kinds of cells *in vitro*. Definite quantities of organ pulp were placed in specially constructed tubes and anærobic conditions were established by the passage of nitrous oxid gas. Definite quantities of methylene blue of known strength were then added. The rate of reduction was indicated by the disappearance of the blue color owing to the reduction of the animal cells. It was shown that *in vitro* the influence of temperature is the same as that observed in the living organism. The influence of alkali in accelerating reduction was also shown. The action of salts and various poisons is at present the subject of investigation.

14 (60). **"Some medical applications of the naphthoquinon sodium mono-sulfonate reactions,"** with demonstrations: **C. A. HERTER.**

The author demonstrated a substance of singularly great powers of condensation with other organic substances, this condensation resulting in the formation of colored bodies. He demonstrated especially the reactions of naphthoquinon sodium mono-sulfonate with anilin and various amins, with nicotin, conin, piperidin, and finally with indol, skatol and pyrrol. The reactions with indol, skatol and pyrrol possess unusual physiological and chemical interest and will form the subjects of future publications.

The reaction with pyrrol occurs in the cold and is evidenced by the deepening red which on the addition of alkali changes to purple, violet, blue and finally reddish-brown. The addition of acid to the red solution obtained without alkali is followed by the development of a green and finally brown color. These color reactions (and particularly the one dependent on acids) occur with such rapidity if one uses concentrated heated solutions of pyrrol, that the characteristic color stages may be of extremely short duration. This reaction with pyrrol is a highly characteristic one, and should prove of service to chemists.

Among the biological and medical applications of the naphthoquinon sodium mono-sulfonate reactions, the author mentioned the study of various aromatic compounds in the organism, the occurrence of certain intravital syntheses, the detection in the urine of organic compounds, such as para-amidophenol, and the development of a method of staining the bile capillaries by means of intravenous infusion of the derivatives of the naphthoquinon