10 (56). **"A new form of float for water or alcohol manometers,"** with demonstration: **HAVEN EMERSON.** (By invitation.)

The float consists of an aluminium cylinder with very thin wall, supporting a writing arm of fine aluminium wire. For manometer tubing of $\frac{9}{32}$ in. inside diameter, $\frac{3}{16}$ in. or $\frac{1}{4}$ in. aluminium tubing $2\frac{1}{2}$ in. long is used. This is bored out until the walls are sufficiently light. In the upper end is forced a solid cap of aluminium with a small hole in the center into which the wire for the writing lever is driven. The lower end is plugged with cork. Both ends are painted over with hot paraffin to prevent leaking. For use in alcohol a somewhat larger tube is necessary. Three crossed hairs held in place across the open arm of the manometer tube by a strip of adhesive plaster keep the writing arm centered with sufficient accuracy.

The value of the float consists in its cheapness, the ease with which it can be made, its very slight inertia, and its convenience in estimating delicate changes in pressure for which a water or alcohol manometer is needed.

11 (57). **"Gelatin as a substitute for protein in the food": J. R. MURLIN.**

In a series of experiments on dogs the starvation nitrogen was first determined during fasting periods. Varying amounts of gelatin, containing from one fourth to two thirds of this amount of nitrogen were then fed, the remaining three fourths to one third of the starvation quantity being supplied in meat or other proteins. The calorific requirement of the animal, estimated from Rubner's tables, was made up in each experiment with fats and carbohydrates. Results show an equal sparing of the body-protein, whether one fourth, one third or one half of the starvation nitrogen was fed in the form of gelatin, the coincident sparing of protein by fats and carbohydrates being the same. When the coincident sparing of protein by non-nitrogenous food was increased by feeding a larger percentage of carbohydrates and less fat, the fraction of the starvation nitrogen fed in the form of gelatin could be raised to two thirds, the other one third being fed in meat. Nitrogenous equilibrium was maintained on this diet for several days.

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