carried out under the direction of Professor Schmiedeberg. Microscopic examination of the tissues of rabbits killed by lethal doses of this salt shows the deposition of metallic gold in and immediately about the nuclei of the cells of the kidney, liver, spleen, mucosa of the gastrointestinal tract, and cardiac muscle. By chemical analysis it was found that the greatest amounts of gold were deposited in the kidney and liver, only traces having been recovered from the other organs.

On account of the ease of reduction of this salt, and the possibility of accurately estimating the metallic gold, it was recommended as an indicator of the *quantitative* relationships of the reducing processes in the various organs.

19. "Effect of ligation upon the vital staining of nerves," with demonstration: **S. J. MELTZER.**

The author demonstrated pieces of dried sciatic nerves of rabbits which, *intra vitam*, received intravenous infusions of methylene-blue. Single ligatures of the nerve, no matter where applied, are without any influence upon the color of the nerve on either side of the ligature. When the nerve is ligated at two places the section between the two ligatures remains free of color, while the central and peripheral ends of the nerve turn blue in the usual manner. The effect is the same even if the ligatures are applied near either end of the nerve. This fact shows that, in the vital staining, the methylene-blue reaches the nerve only from its central and peripheral ends.

20. "Effects of bloodletting on metabolism": PHILIP B. HAWK and **WILLIAM J. GIES.**

The author reported the results of some experiments recently conducted by him in collaboration with Dr. Hawk. The experiments were carried out on dogs in a state of nitrogenous equilibrium. The withdrawals of blood were made while the animals were under the influence of ether-chloroform. The metabolic effects of anæsthesia and of operation were carefully controlled.

It was found that hemorrhages of about 3 % of body weight caused, among other effects, (1) diminished secretion and decreased specific gravity, of the urine at first, the reverse in

twenty-four to forty-eight hours afterward; (2) increased elimination of nitrogen and sulfur, and decreased excretion of phosphorus, in the urine. The amount and consistency of the feces were unaffected.

Repeated hemorrhages from the same animal resulted in (*a*) cumulative quantitative metabolic effects in harmony with those indicated above, and were followed by (*b*) steady decline in body weight, and (*c*) gradual increase in average daily volume of urine, even when the animal ate the same amount and kind of food as at the beginning.

After successive hemorrhages at intervals of a few days the content of nitrogen, sulfur, and phosphorus in the blood, as well as specific gravity and number of red corpuscles, gradually diminished, whereas the leukocytes steadily increased in number.

These data confirm the general metabolic results obtained in the earlier experiments by Bauer and others, and disagree with the opposite conclusions, as to effects on proteid catabolism, announced two years ago by Ascoli and Draghi.

Fourth meeting.[1]

Physiological Laboratory of Columbia University, at the College of Physicians and Surgeons. December 16, 1903.

21. Changes in the viscosity of the blood produced by various experimental procedures," with demonstrations: **RUSSELL BURTON-OPITZ.**

The author described and demonstrated the apparatus used in determining the viscosity of the blood. This demonstration was followed by a discussion of the changes in the molecular friction of the blood after intravenous injections of distilled water, and of saline, dextrose, and alcoholic solutions. The effect of alcohol, when introduced into the stomach and small intestine, was also noted. Next were considered the changes following subcutaneous administration of curare and the differences in the viscosity of arterial and venous blood. K, the coefficient expressing the viscosity, was determined before and after each experimental procedure, two or three determinations being made in each case.

[1] Reprinted from *Science*, 1904, xix, p. 104; *American Medicine*, 1904, vii, p. 111; *Medical News*, 1904, lxxxiv, p. 238.