sixth periods, succeeded by a rise in the next period. In the second experiment the rate of secretion remained practically steady during the fifth, sixth, seventh, and eighth periods. In the third experiment there was a variation, but the average rate of secretion was about the same in the fifth, sixth, and seventh periods as in the preceding experiments. It would seem, therefore, that the diminished secretion of bile following the intravenous injection of alcohol may be due to the influence of that substance.

A study of the effect of alcohol on biliary secretion after injection into the stomach was also begun. It would seem *a priori*, in the light of recent investigations by Bayliss and Starling, Fleig, and Henriot, on the relation of secretin to the secretion of bile, that the author's method of administering alcohol ought to provoke secretion of bile. In the few experiments the author has made thus far, he has observed that when 60 % alcohol was introduced into the stomach, there was a slight, transitory increase of biliary secretion. With 30 % alcohol there was in some cases an increase, in some a decrease of the secretion of bile as compared with pre-alcoholic periods. At this stage of the work it would be premature to form any conclusion regarding this point. Whether this slight increase is due to increased gastric secretion and consequent formation of secretin, or is reflex in nature, will next be investigated.

43. "The influence of repeated external hemorrhages on the general composition of the blood": GUSTAVE M. MEYER and WILLIAM J. GIES.

Various observers have noted the fact that the composition of the blood changes after hemorrhage, but no systematic study has been made of these modifications. The authors have begun such an investigation for the purpose of establishing a more definite basis for comparative blood analysis. They reported the results of their observations on posthemorrhagic changes in the percentage content of water, total solids, organic solids, and ash. Further study is in progress.

Healthy, well-nourished or fasting dogs in light morphin-atropin narcosis were used, and quantities of blood ranging from 0.2 % to 1.0 % of body-weight were taken. These amounts were drawn from the femoral artery, and approximately the same

quantity was taken in each experiment at regular intervals, varying from fifteen minutes to two hours until death ensued. In one experiment a continuous fatal hemorrhage was effected and the blood analyzed in portions. Thus far twenty experiments have been carried out. In some of them the serum was also analyzed.

The following conclusions were reported: Hemorrhage causes increase of water and decrease of solids in the remaining blood. *Hemorrhages of about 0.6 % of body-weight,* cause little or no change in general composition of the blood until after 2.5 % has been taken. Under the conditions of these experiments it was generally found that the longer the intervals between withdrawals the less the maximal differences between composition of the first and last fractions. Short intervals between bleedings, all other conditions being equal, favored the largest total withdrawals before death ensued.

The differences in the serum ran parallel with those in the blood, but were less marked. The ash did not vary materially in either the blood or serum, no matter how much blood was taken. The blood ash and that from the serum were practically the same in relative amount, though different in composition.

When *small* quantities of blood, *equal to about 0.2 % of body-weight,* were removed at intervals of about a half-hour, little change was noted in either blood or serum until after 3 % had been taken. After this quantity had been lost the changes following further hemorrhage were such as usually occur.

The maximum differences between the percentage composition of the first and last fractions varied somewhat. The differences in the amounts of solids, for example, ranged from 1.5 % to 3.5 %. In *fasting animals* the influence of hemorrhage on chemical change in the remaining blood was somewhat more marked than in well nourished ones. The effect on the serum was about the same.

Other influences in the experiments were carefully controlled. The observed effects were due only in *slight* degree to the narcotics and the conditions attending the operations.

44. "Demonstration of a new portable sphygmomanometer": THEODORE C. JANEWAY.

The author's instrument was designed with the object of securing a thoroughly portable clinical sphygmomanometer, in which nothing essential to accuracy should be sacrificed. It em-