tocic principle of the posterior part of hypophysis (Pitocin, Parke-Davis). 3. The activity of the choline esterase is somewhat decreased by Follutein, Estrone Suspension, Progestin, Testosterone Propionate, Pitressin, but not by Pitocin. 4. The potassium sensitivity of the muscle is potentiated by Follutein, Estrone Suspension, Estradiol, Theelin, Progestin, Progesterol, Testosterone Propionate, Doca (desoxycorticosterone, Roche-Organon), cholesterol, Pitressin, but not by Pitocin. 5. A correlation between threshold of excitability of the effector cells and the presence of the above substances was suggested.

The author wishes to express her gratitude to Abbott Laboratories, Ciba Pharmaceutical Products, Inc., Parke-Davis and Co., Roche-Organon, Inc., Schering Corporation, and E. R. Squibb and Sons for the generous supply of hormones.

14215 P

A Simple Method for the Concentration of Blood Plasma and Serum.

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In the course of the preparation of plasma for human use it was observed that on the thawing of frozen plasma, separation into a number of layers takes place; the lowermost deep-yellow layer is rich in proteins, while the uppermost, nearly colorless layer, contains only a small amount of protein. On repeated freezing and thawing, the separation becomes more distinct. A more rapid and sharp separation of plasma into layers is obtained by centrifuging the frozen material.

It is interesting that Bujwid[1] used the freezing method for the concentration of diphtheria and tetanus anti-toxin in 1897. His results were confirmed by Ernst, Coolidge and Cook.[2] Rossi[3] used the freezing and centrifuging procedures for fractionating plasma and other colloidal solutions, and Hati[4] used this technic for the concentration of complement, opsonins and anti-sera. In view of the above observations, the question arose as to whether these procedures might be employed for the concentration of plasma without excessive loss of solids.

The following is a representative fractionation and analysis of plasma: 100 cc were placed in a separatory funnel and frozen at —10°C; on partial thawing at 4°C, a deep yellow fluid was obtained with a colorless ice block floating on the surface. The freezing and thawing process was twice repeated. During the thawing which followed the third freezing, the melting fluid was collected directly into graduated cylinders. Three fractions were obtained in this manner. The first fraction of 25 cc was deep-yellow; the second

TABLE I.

	cc plasma vol.	% total protein	% albumin	mg% non-pro-N	mg% choles-terol	mg% chlor-ides	agglu-tinins
Original fraction	100	5.3	3.5	40	125	400	1:16
No. 1	25	15.0	9.3	83	255	1107	1:64
No. 2	17	6.5	4.3	40	185	382	1:32
No. 3	58	0.7	0.5	17	28	100	1: 8

1 Bujwid, *Z. f. Bakt.*, 1897, **22**, 287.

2 Ernst, Coolidge and Cook, *J. Boston Med. Soc.*, 1898, **2**, 166.

3 Rossi, G., *Arch. di Fisiologia*, 1904, **2**, 638.

4 Hati, S., *Z. f. Bakt.*, 1909, **48**, 203.

was 17 cc, and the third, derived from the colorless ice block, was 58 cc.

Quantitative determinations of proteins, albumin, chlorides, cholesterol and isoagglutinins were performed on the 3 fractions and on a sample of the original plasma. The results are presented in Table I. From these data, it can be seen that in the first fraction all the solid plasma constituents are contained in high concentration.

The percentage of each plasma constituent as compared with that of the original plasma are given in Fig. 1. From these, it is apparent that in the first fraction which represents only 25% of the original fluid volume, 70% of the proteins and chlorides is present, while in the third fraction, 58% of the original volume, only 8% of the proteins and 18% of the chlorides are present. Centrifugation of a frozen sample of plasma yielded similar results more rapidly and with a more distinct separation of the layers.

From the above findings, it is felt that these rapid and simple methods which do not require the use of chemicals may be of value in the concentration of plasma and serum constituents.

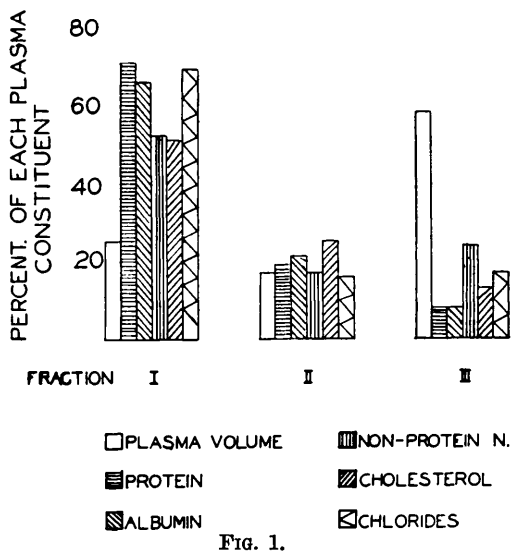

FIG. 1.

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Urinary Excretion of Acid-Decomposable Hydrocarbon Precursors Following Administration of Polycyclic Hydrocarbons.

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In 1934 it was shown[1] that when naphthalene is administered to rabbits there is excreted in the urine a compound which is decomposed by acid, but not by alkali, to yield naphthalene. Later work[2] revealed that such a compound is present in the urine of the rat and other species after the administration of naphthalene. Anthracene[3] and phenanthrene[4] when administered to rats and rabbits give rise to the excretion of compounds which yield anthracene and phenanthrene respectively when decomposed by acid. None of these hydrocarbon precursors has been isolated from urine. The present work was undertaken in order to obtain quantitative data on the excretion of these compounds and to study the question of whether analogous compounds are formed in the organism from other polycyclic hydrocarbons, namely, acenaphthene, chrysene, 3,4-benzpyrene, 1,2,5,6-dibenzanthracene and methylcholanthrene.

An isolation procedure was developed in

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1 Bourne, M. C., and Young, L., *Biochem. J.*, 1934, **28**, 803.

2 Stekol, J., *J. Biol. Chem.*, 1935, **110**, 463; 1935, **113**, 675; 1937, **121**, 87.

3 Boyland, E., and Levi, A. A., *Biochem. J.*, 1936, **30**, 1225.

4 Young, L., and Britton, A., unpublished observations.