A NOTE ON NORMAL BLOOD COAGULATION VALUES IN INDIAN RABBITS

By

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It was observed, during a study of the effect of certain drugs on blood coagulation in bbits, that the values of bleeding time, coagulation time and prothrombin time were much er here than those reported from other countries. A search of literature revealed scanty a on Indian rabbits (1,7). It was thought important, therefore, to establish the normal values Indian rabbits before studying drug effect on them. These values are being reported in s communication.

MATERIALS AND METHODS

Healthy inbred Indian albino rabbits of either sex and with a mean weight of 1.3 ± 0.23 (S.D.) were employed in the study. They were maintained on a standard diet and fasted ernight before use. No animal was used more than once in a week. The bleeding time was ermined by the method of Duke (4), coagulation time by the capillary tube method of Wright Cole-brook (9) and prothrombin time by the micro method of Montigel (6) using Thromplastin tablets (Geigy). All values were obtained correct upto 0.1 sec. The blood for coaguon time and prothrombin time determinations was collected from the marginal ear vein. ex capillary tube of 0.75 mm. internal diameter was used in all the experiments. Dupli- e determinations were carried out with each sample and if they differed by more than 0.2 onds, the observation was rejected. In case the two values were within 0.2 seconds, the an was obtained. Three such sets of observations were generally obtained for each rabbit weekly interval.

RESULTS

The values obtained from 93 rabbits were analysed and a summary of results is present- in Table I and Fig. 1-3. The mean values ±standard error of the bleeding, coagulation prothrombin time have been found to be 9.5 ± 0.6, 103 ± 0.8 and 7.3 ± 0.03 seconds res- ctively. The histograms in Fig. 1-3 show the frequency distribution of the various values ained for bleeding time, coagulation time and prothrombin time respectively.

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<div align="center">TABLE I</div>

Showing the mean values of bleeding time, coagulation time and prothrombin time in Indian rabbits. The standard deviation, standard error as well as the % of observation lying within ±2 S.D. from the mean are also shown in each case

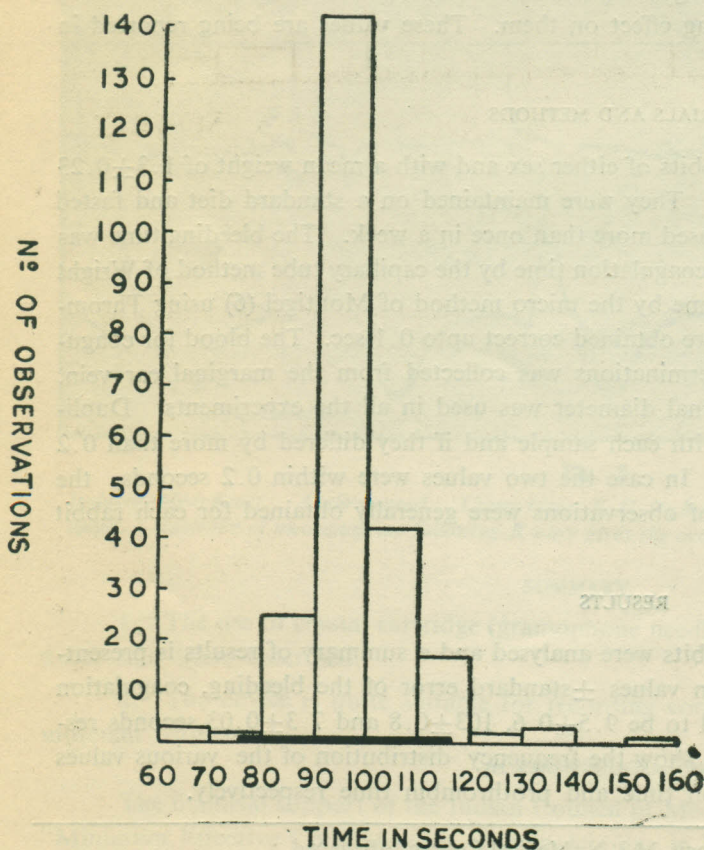| Value	Bleeding Time	Coagulation Time	Prothrombin Time
No. of observations	288	288	254
Mean	95 sec.	103 sec.	7.3 sec.
Standard Deviation	10.4	13.6	0.6
Standard Error	0.6	0.8	0.03
% observations lying within±2 S.D.	95.9%	92.5%	.77%

Fig. 1

Histogram showing the frequency distribution of the 288 values of bleeding time. The thick bar represents the values lying within ±2 S.D. of the mean.
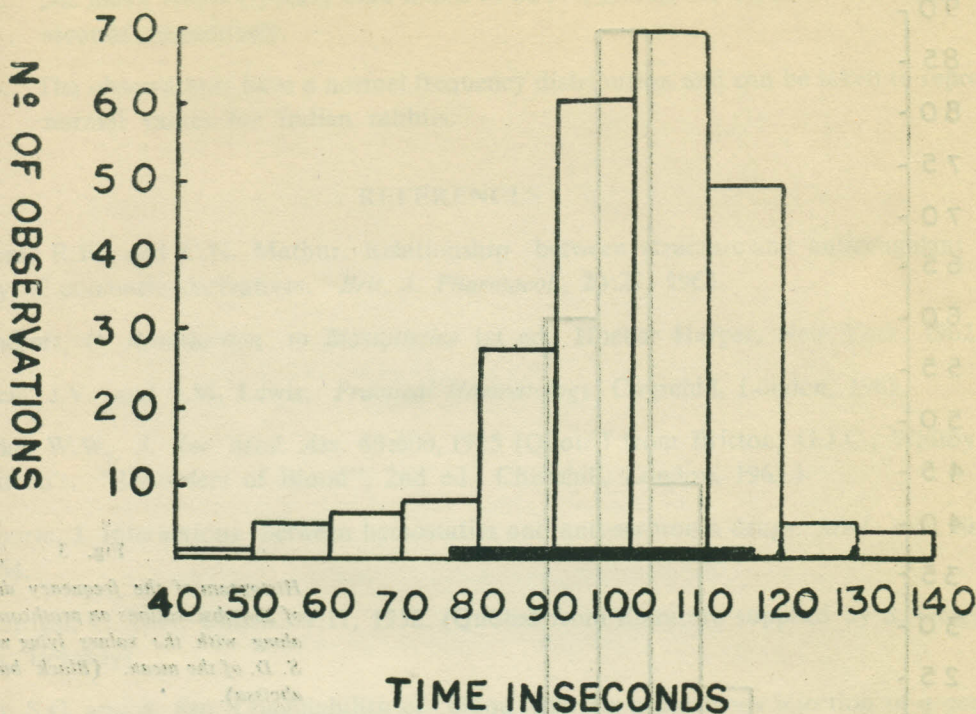
Fig- 2

Histogram of the frequency distribution of the observations on coagulation time.   Other details as in Fig. 1

DISCUSSION

The values of coagulation time and prothrombin time vary within certain limits with the technique of blood collection (*e.g.* capillary blood, venous blood or arterial blood) and the technique used for determination. The techniques employed in the present investigation have the advantage of requiring only small amount of blood making repeated determinations possible in every animal. Further, the end point employed is quite sharp in both the cases and results are reproducible.

The frequency histogram is slightly skewed to the right in the case of bleeding time (Fig.1) while in the case of coagulation time and prothrombin time the curve is skewed to the left (Fig. 2 and 3). According to Bancroft (2) in the case of a normal distribution 95.45% observations lie between the mean and within 2 times the standard deviation from the mean. The observations lying in this range are 95.90 and 95.77% respectively in the case of bleeding time and prothrombin time (Table 1). These values, therefore, show a normal distribution and can be taken to represent normal values for Indian rabbits. In the case of coagulation time
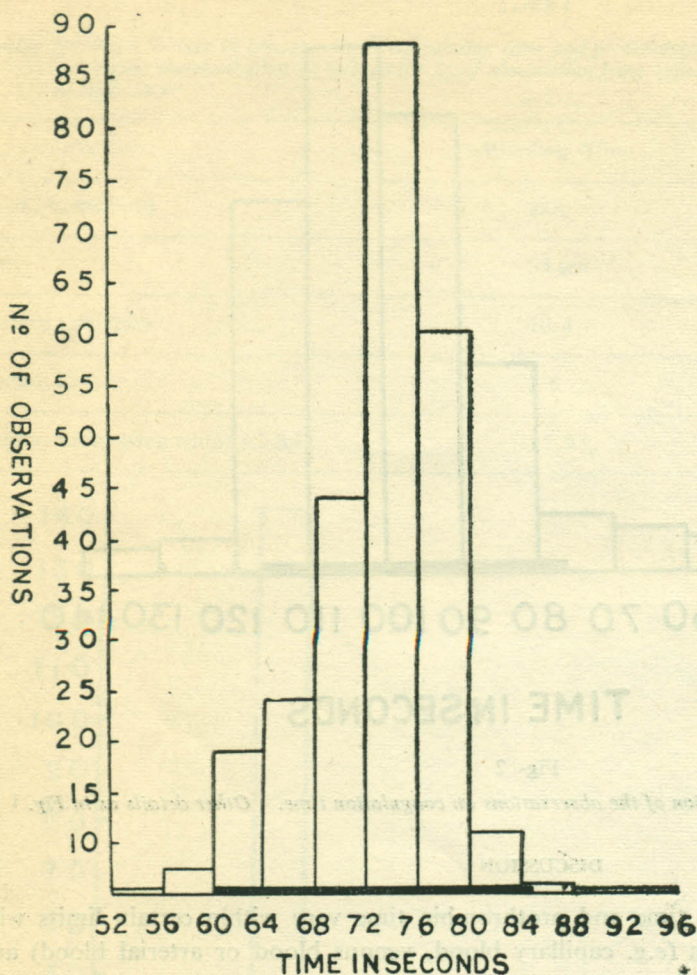
Fig. 3

Histogram of the frequency distribution of 254 observations on prothrombin time along with the values lying within ±2 S. D. of the mean. (Black bar on the abcissa).

92.5% observations lie within this limit (Table I). As this is quite close to 95.45% it may be taken to indicate an almost normal distribution.

These values are considerably lower than those reported from other countries, the usual values reported being : bleeding time, 278 seconds (5); coagulation time, 150-180 seconds (3) and prothrombin time, 10 seconds (8). It is difficult to explain the cause of this difference, though it could be due to a strain variation.

SUMMARY

1. Bleeding time, coagulation time and prothrombin time values have been determined in 93 inbred Indian rabbits.

2. The mean values ($\pm$S.E.) were found to be 95 ($\pm$0.6), 103 ($\pm$0.8) and 7.3 ($\pm$0.03) seconds respectively.

3. The observations have a normal frequency distribution and can be taken to represent normal values for Indian rabbits.

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