

Chapter IV

RESULTS

1. Effect of oral administrations of chlorpropamide. (Table 3 and Figure 4)

The hypoglycemic effect of chlorpropamide was confirmed in this experiment. There was in each group a marked reduction of blood sugar below the original control level. Statistical calculation confirmed these results. However, the appearance of the effect in both groups seemed to be different. The reduction was not significant in the first group during the first two hours after the administration of the drug; but this became statistically significant since the third hour up to the end of the experiment (the sixth hour). In the second group, on the other hand, the blood sugar was significantly reduced since the first hour until the sixth hour after the administration of the drug.

2. Effect of single-dose oral administrations of aqueous extract of *S. sanitwongsei* (Table 4 and Figure 5)

After the oral administration of the aqueous extract of *S. sanitwongsei* to the animals of the two groups, 5 g and 10 g per kg body weight, there was a slight and transient reduction in the blood sugar level of both groups. The reduction was statistically significant during the second and the third hours after the administration of the extract in the first group, and during the third and the fourth hours in the second group.

It should be pointed out at this point that in the calculation of the statistical data, the mean blood sugar level of the animals in each individual group was compared with the mean level of their own control at particular period of time. From Figure 5, it is apparent that there were relatively wide fluctuations of the mean blood sugar levels of the animals in both control groups. Therefore, the apparent, slight and only transient reductions of the blood sugar levels in this experiment are quite questionable. The hypoglycemic activity of this plant, if any, is relatively weak.

3. Comparative study on the effects of administrations of aqueous extract of *S. sanitwongsei* and of chlorpropamide on blood sugar levels of rabbits. (Table 5 and Figure 6)

Reduction of the blood sugar level was observed only in the group of the animals which received 125 mg of chlorpropamide per kg body weight (group III). The blood sugar level was reduced down to about half of the original fasting control and remained at that level until the end of the experiment at the sixth hour after the administration. The other two groups, on the other hand, revealed no significant change of the blood sugar levels (groups I and II), indicating the absence of hypoglycemic activity of distilled water and of the aqueous extract of the berries of *S. sanitwongsei* in this experiment.

4. Effect of single-dose oral administrations of alcoholic extract of *S. sanitwongsei*. (Table 6 and Figure 7)

The results obtained in this experiment seemed to indicate a weak, if any, hypoglycemic activity of *S. sanitwongsei*, in a similar manner as those obtained in the experiment number 2 when the aqueous extract of the herb was used. In the first group of the animals which received 5 g/kg of the alcoholic extract, there was a slight, yet significant reduction of the blood sugar during the third, fourth, and fifth hours after the administration of the drug, when the results so obtained are calculated against those of the control period. The animals in the second group which received 10 g/kg of the extract, on the other hand, revealed no significant reduction of blood sugar levels when similarly calculated. Relatively wide fluctuations of the blood sugar levels of the control groups were also noticeable in this experiment.

5. Effect of three-day oral administrations of aqueous extract of *S. sanitwongsei*. (Table 7 and Figure 8)

No significant change in the blood sugar level was observed in this experiment indicating the absence of hypoglycemic activity of the extract, which was given to the animals once daily for three days.

6. Effect of seven-day oral administrations of aqueous extract of *S. sanitwongsei*. (Table 8 and Figure 9)

In this experiment, the extract was given once daily

for seven days and the blood sugar levels were determined just before and then hourly after the seventh dose. Distilled water was also used as control and given to another group of animals in the same manner. No significant change in the blood sugar level was observed in either group, indicating the absence of hypoglycemic activity.

7. Effect of single-dose oral administrations of aqueous extract of *S. trilobatum*. (Table 9 and Figure 10).

In the group of animals receiving 5 g/kg of the aqueous extract of *S. trilobatum* there was a slight but statistically significant reduction of the blood sugar below the original control level since the second until the sixth hour after the administration, but this was not observable in the higher dosage group.

These results seem to indicate, therefore, that the aqueous extract of the berries of this plant possess weak, questionable, hypoglycemic activity, if any.

8. Comparative study of the effect of oral administrations of aqueous extract of *S. trilobatum* and of chlorpropamide.

(Table 10 and Figure 11)

In this experiment, the claimed hypoglycemic effect of the aqueous extract of *S. trilobatum* berries was studied against the distilled water and the chlorpropamide controls. Distinct hypoglycemic effect was observed only in those animals receiving

chlorpropamide; one of these animals died before the fifth hour sample of blood was taken. The fourth blood sample of this rabbit contained only 35.6 mg per 100 ml. No significant reduction of the blood sugar level was observed in the animals receiving either distilled water or the aqueous extract of S. trilobatum berries. The results of this experiment were thus comparatively similar to those of the experiment number 3, in which the aqueous extract of the berries of S. sanitwongsei was used against distilled water and chlorpropamide.

9. Effect of three-day oral administration of aqueous extract of S. trilobatum. (Table 11 and Figure 12)

After the third once-daily oral administration of 5 g/kg of the berries of S. trilobatum in the form of aqueous extract, there was a slight, yet statistically significant, reduction in the level of the blood sugar of the twelve animals used in this experiment. The statistical significance was observed during the second, the third, and the fourth hours after the third day administration.

10. Effect of seven-day oral administration of aqueous extract of S. trilobatum (Table 12 and Figure 13)

No significant change in the level of the blood sugar was demonstrated either in the animals receiving distilled water or in those receiving the aqueous extract of the berries of S. trilobatum in this experiment. This result, therefore, did not confirm the hypoglycemic activity observed in the preceding

experiment although the dosage used was higher and the number of the days of administration was also larger.