8 days while at normal temperature (24-26°C), and in the cold room (3°C). At normal temperature the insulin-treated animals showed a significant increase in mean acinar cell height of the thyroid, giving a picture of hypertrophy of the thyroid gland. When the insulin treated animals were exposed to cold the thyroid glands showed a decrease in average mean acinar cell heights, as compared with the cold controls.

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Received February 20, 1957. P.S.E.B.M., 1957, v95.

Effect of Cobalt Administration on Myoglobin Content.* (23120)

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The mechanism of action of cobalt in production of polycythemia is not fully known. It is widely held that cobalt exerts some active stimulus to erythropoietic tissue, since a distinct reticulocytosis precedes the rise in erythrocyte count(1). Van Dyke *et al.*(2) have shown that the life span of erythrocytes is not increased in rats made polycythemic with cobalt. Hyperplasia of the bone marrow occurs(3) with little or no alteration in the total or differential leukocyte count(4).

The work of several investigators suggests that the action of cobalt is mediated through interference with some of the enzymes of cellular respiration(5,6). Such interference may induce a tissue anoxia which in turn elicits compensatory erythrocytosis. If this is the case, myoglobin, which lies intermediate in the chain of respiratory events between the erythrocytes and the respiratory enzymes(7), might be expected to increase in amount so as to augment oxygen transfer. The present study was made to determine the effect of cobalt on myoglobin concentration.

Methods. Twenty-four Sprague-Dawley female rats weighing 118 to 144 g were divided into 2 groups of 6 pairs each. One member of each pair was randomly chosen to be treated while its mate served as the control. The animals were individually caged in air-conditioned quarters and were pair-fed on Purina laboratory meal. Water was available *ad libitum*. Cobalt chloride hexahydrate in aqueous solution was administered by subcutaneous injection. The 6 treated animals of Group 1 received daily 2.5 mg/kg body weight of the compound as a 0.25% solution and those in Group 2 received 5.0 mg/kg body weight as a 0.5% solution. All control animals were injected with a comparable volume of demineralized water. Hematological examinations were made weekly on tail blood. Erythrocyte and leukocyte counts were done by standard technics; hemoglobin was measured as oxyhemoglobin. The packed cell volume was determined by the micromethod of Guest and Siler(8).

At the end of 88 days all animals were sac-

* The material presented here is taken from thesis submitted by Willard R. Faulkner in partial fulfillment of requirements for Ph.D. degree from Vanderbilt University.

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TABLE I. Mean Initial and Terminal Hemoglobin Concentrations.

Level of cobalt, mg/kg	Treatment, days	Treated Initial	Treated Terminal	Controls Initial	Controls Terminal
		g/100 ml ± S.E.			
2.5	80	13.6 ± .3	21.2 ± .2	14.2 ± .4	15.9 ± .1
5.0	86	13.5 ± .3	21.3 ± .2	14.2 ± .5	15.5 ± .2

Six rats in each group.

rificed by decapitation. Myoglobin analyses were performed on the combined gastrocnemius and soleus muscles from each leg by a modification of the method of Poel(9).

Results. The degree of polycythemia which had developed at termination of the experiment is shown in Table I. Erythrocyte counts and packed cell volumes paralleled hemoglobin values closely throughout the experiment. The data in Table II compare myoglobin concentration of the treated and control animals at time of sacrifice and show that the amount present was not altered by treatment with cobalt.

TABLE II. Effect of Cobalt on Myoglobin.

Level of cobalt, mg/kg	Treatment, days	Myoglobin Treated	Myoglobin Controls
		mg/g ± S.E.	
2.5	88	1.26 ± .03	1.25 ± .05
5.0	88	1.22 ± .03	1.17 ± .02

Six rats in each group.

Summary. Administration of cobalt to rats at a level sufficient to produce a marked polycythemia did not alter myoglobin concentration.

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Received February 25, 1957. P.S.E.B.M., 1957, v95.

A Double Yoke Harness for Prolonged Immobilization of Small Animals.* (23121)

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Prolonged immobilization of a small animal is often required either for collecting products of metabolism or for continuous administration of solutions, drugs, blood etc. For these purposes technics have been developed(1,2,3) by which the animal is almost completely immobilized. However, extensive and prolonged muscular inactivity may lead to death. Movement is obviously essential for the physiologic processes of the organism. Motivated by these considerations we have developed the following method for immobilization of continuously infused rats, using a metal harness consisting of a double yoke.

Methods. The double yoke is formed of 2 galvanized iron plates having a large eccentrically placed hole (Fig. 1), through which the rat's body is passed. A stainless steel wire (W, Fig. 1) is welded along the inner edge of the hole to blunt it. G-clamps (Cl, Fig. 1)

* This work was supported in part by grant from Defence Research Board of Canada.