known experiments of Loeb, who employed KNC to prevent the disintegrative action of hypertonic sea water on sea urchin eggs. Second, hypertonic sugar solutions obliterate the differential susceptibility of the several regions of the embryo to cyanide disintegration. Observations on a possible similar action of strongly hypertonic Ringer's solution are incomplete.

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Effect on Blood Sugar of Direct Irradiation of Blood in Vivo.*

C. I. REED, J. I. PAYTE AND ROBERT W. LACKEY.

From the Department of Physiology, Baylor University Medical School, Dallas, Texas.

In a paper previously published[1] one of us described a method of irradiating the blood of etherized dogs by allowing a beam from a special carbon arc to fall on a quartz tube inserted in the carotid artery. By this method a series of studies has been undertaken on the effects of this procedure on blood pressure,[1] on leucocytes,[2] on electrophoretic potential of erythrocytes,[3] on blood uric acid,[4] blood calcium,[5] and CO_2 combining power.[6]

It is the purpose of this paper to report the results of this procedure on blood sugar, for the sake of a more complete picture of the effects of such a method of irradiation.

A control series was first run in which the dog was subject to ether anesthesia together with all the operative technic but without irradiation. The first sample of blood was drawn from the saphenous vein before anesthesia. Subsequent samples were drawn from the femoral vein at various intervals. All blood samples were heparinized either *in vitro* or *in vivo*. Determinations were made by the method of Tolin and Wu.[7] The results of the control experiments are shown in Table I.

Another series was made in which irradiation was begun after

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TABLE I.

Blood sugar, mg. per 100 cc. Time from 1″ blood sample. Ether anesthesia.

Minutes	3	5	10	15	20	25	30	35	40	45	50	55	60	70	80	85	90	95	100	105	110	120	150
1 —							138						154				160					190	210
2 87				95							143				154						154		
3 84			105						228					266					236				
4 60							146						139							153			
5 37			40								100				83						90		
6 93		93					102						113				122						
7 96		107	136		187				230								230						
8 —		63	60	55		60						60						60					
9 87	100		125		133			174			154				180								
10 85		100	125						150					222	235	222	210						
11 74		99		111			148						130				143			181		166	
12 74	76			79						80				80	90	88	95						
13 73					125						166			200			214		230		230	230	

TABLE II.

Blood sugar, mg. per 100 cc. ether anesthesia. Irradiation begun at *.

Minutes	5	10	15	20	25	30	35	40	45	50	55	60	80	85	90	95	100	105	110	115	120	125	130	135
1 60					166			*			200			222				285		285		285	285	
2 83		108					*			160			181			266		296						
3 75			*	143			133			136			187						214		230			
4 120	133					*				147			125						143			166		230
5 108			104					*		102			108						105			108		111
6 130			142						*			166			171						150			130
7 117						130*						136				150			158			—		
8 120		130					*	150									187			230				
9 115					122*							120			115			125	120	111	115			
10 97			142	*			166					120	142		131				136					
11 125				176*					230				250		250			272						

the second sample was drawn. The results of this series are shown in Table II.

Anesthesia usually produced a progressive rise in blood sugar values. Initial values in the two series ranged between 37 and 130 mg. per cc. In two instances (No. 8, Table I, No. 5, Table II) when the animals had not been fed for two days, the level remained practically constant throughout a period of 95 minutes of anesthesia. In all other cases the figures were distinctly higher within 5 to 10 minutes.

The initial figures are generally higher in the experimental series, for which no explanation is attempted, as the animals were selected at random from stock. Curves constructed from these tables, but not included in the paper, are so nearly identical that it can only be concluded in the basis of these experiments that irradiation with a special carbon arc emitting a high percentage of ultra-violet rays has no influence on blood sugar of etherized dogs.

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The Bacteriophagic Relationships Between B. Coli, S. Fecalis and S. Lacticus.

PHILIP HADLEY AND EUGENIA DABNEY.

From the Department of Bacteriology, University of Michigan, Ann Arbor, Mich.

The systematic relationships existing between *S. fecalis* and recognized streptococci of the hemolytic and viridans group, or with acid-forming organisms common to the intestinal tract, such as *B. coli, S. lacticus (B. acidi lactici), M. ovalis* or the "Enterococcus" of Thiercelin and others, have long been a subject of controversy. Andrews and Horder[1] attempted to establish the