labile combination, of which 4 mgm. % is broken down during asphyxia. If phosphocreatine is the substance there should be 40 mgm. % of bound creatine in fresh nerve, 23 mgm. % after asphyxiation. The observed values are 44 and 25, which leaves little doubt that the labile phosphorus and bound creatine are present in nerve as phosphocreatine. Similar agreement is obtained for muscle.

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Effects of Ligating the Bile Duct in the Rat.

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The experiment to be described was suggested by a finding reported by Buchbinder and Kern,[1] namely, that ligation of the common bile duct in the pup is followed by a decline in the blood calcium and by the development of an osteoporotic condition. Since the incisors of the rat are teeth of continuous eruption and relatively convenient for microscopic study, this animal could be expected to show the effects of an icteric calcium metabolism upon growing teeth.

In a series of rats, all of them males, white, weighed every day, and kept on a standard diet, ligation of the bile duct was done with asepsis and ether-magnesium sulphate anesthesia. The duct was found in the hepatoduodenal ligament and was divided between liga-

TABLE I.
Survival-times of Male Rats, Untreated, After Ligation of Bile Ducts.

			Weight	Survival	Remarks
			gm.	days	
1	RH	1	169	2.5	
2	RF	4	147	2.8	
3	LH	2	158	4	
4	LH	45	145	7	
5	RH	3	161	10	
6	LH	4	173	10	
7	LH	1	155	12	Smallest cyst.
8	LH	3B	185	14	Small cyst.
9	LH	34	172	23	Large cyst.
10	LH	5	132	30	Large cyst; ascites.
11	LH	3A	151	38	Large cyst; bleeding from nose, etc.

[1] Buchbinder, W. C., and Kern, R., PROC. SOC. EXP. BIOL. AND MED., 1927-8, XXV, 104.

tures. The survival-times of a series of 13 such animals are given in Table I.

The urine became bright yellow less than 12 hours after the operation and remained so, leaving yellow stains on the hair about the penis. The otherwise pink ears assumed a yellow tint. The feces became lighter in color. Ascites developed in only one rat; spontaneous hemorrhages were observed in one other.

Construction of weight curves showed that it was impossible to tell, from daily observations of the animal's weight, when death was imminent. The operation was always followed by a decline in weight lasting from one to 5 days. In some cases a period of recovery followed, with a normal daily increase in weight. In one striking case death occurred suddenly on the 14th day while the rat was gaining consistently and weighing 14 gm. more than at operation. There was no ascites in this rat. Comparison of weights at operation with survival-times reveals no correlation; this may be partly due to the narrow range of weights in the series studied (132 to 185 gm.).

The rat has no gall-bladder. The distension of the bile-duct proximal to the ligature slowly gives rise to a small sack which, in the beginning, contains bile. Rats autopsied 3 or 4 days after the ligation showed only a filling of the hepatic ducts with a clear yellow fluid. The sack increases continually in size. Rats autopsied after the 12th day showed no more of the clear yellow fluid; the contents of the sack were now colorless fluid containing black flaky material in suspension.

No gross changes were found in the teeth even of the rat which lived 38 days after the ligation. It seemed desirable, therefore, to see whether the combined depressing effects of icterus and thyropara-

TABLE II.

Survival of Rats After Thyroparathyroidectomy and Ligation of Bile Duct.

			Survival-time		Remarks
			After ligation	After thyroparathyroidectomy	
1		3	13 hours	13 hours	Severe convulsions.
2	LF	3	25 "	25 "	Mild tetany.
3	LH	1	3 days	3 days	Very severe tetany.
4	RH	12	4 "	12 "	Very severe tetany before ligation.
5	LF	4	6 "	6 "	Very severe tetany.
6	RH	13	32 "	40 "	Mild tetany before ligation.
7	LH	3C	64 "	64 "	Moderate tetany. The icterus cleared up in about a month, however.

thyroidectomy upon blood calcium would produce any changes.

Five rats were successfully ligated and thyroparathyroidectomized each at a single sitting. Two other rats which had survived thyroparathyroidectomy and had exhibited tetany had their bile ducts ligated at a second operation with the production of jaundice.

None of these rats showed gross dental defects. The microscopic findings will be reported in another paper (Skillen and Jung).

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Auto-Disinfecting Power of the Human Skin.

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The skin was cleaned with soap and warm water. Broth cultures of *B. prodigiosus, B. pyocyaneus, B. coli, B. typhosus, B. paratyphosus, B. enteritides, Staphylococcus aureus* and *albus* have been used as test micro-organisms. Roughly 90 to 95% of the number of bacteria applied to clean skin are rendered non-viable within 10 minutes. The coli-typhoid group are destroyed more rapidly than other bacteria. The endogenous *Staphylococcus epidermis albus* is removed slower than the air strains of the *Staphylococcus albus.*

When dirty or fatty skin is exposed to the same bacteria under similar conditions they are destroyed slowly, depending among other things, upon the thickness and impermeability of foreign fatty layer covering the skin. Viable bacteria can be determined several hours after being applied to such fat covered skin.

The finger-nail region is an exception to the self-disinfecting power of other skin area. The region under the finger-nail at the tips of the fingers always contains a large number of *Staphylococcus epidermis albus.* Test bacteria applied to this region remain viable for longer periods of time.