since pure cresol has a slight effect of concentration only or none at all.

It seemed desirable to perform more reliable quantitative experiments. Various samples of the cresol oleic acid mixture, 20 cc. each, were shaken for 2 hours either with 20 cc. of water or with 20 cc. of varying KCl solutions, in the same shaking machine. The aqueous fluid of each sample was then separated from the cresol mixture and cleared by filtration. In each case 10 cc. of this fluid was mixed with 3.0 cc. of a 1/10 molecular NaOH solution and titrated back to the neutral point with phenolphthalein as indicator.

In the sample shaken with water an equivalent amount of HCl was needed to reach the turning point of the indicator, showing that no acid had been formed. In the sample shaken with KCl solution less HCl was needed to titrate back the added NaOH, indicating the formation of acid. From the excess of NaOH the following quantities of acid were calculated per 10 cc. in the sample shaken

with 1/10 molecular KCl : 0.3 cc. 1/10 molecular HCl
" 1/50 molecular KCl : 0.18 cc. 1/10 molecular HCl
" 1/250 molecular KCl : 0.11 cc. 1/10 molecular HCl

(These figures represent the averages of two well-agreeing experiments.)

Control experiments have been performed to show that this difference cannot be due to a "salt error".

Conclusions. The experiments show that water soluble acid, manifestly HCl, is formed from KCl and fatty acid, whenever an electromotive effect of concentration arises at the phase boundary. It seems likely that a reaction of the kind described is also a factor in the formation of free HCl in the glands of the stomach.

The theory of phase boundary potentials, referred to above, cannot be set forth in detail in this preliminary communication.

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In the Rhesus Monkey Ovulation is Spontaneous.

GEORGE W. CORNER.

From the University of Rochester School of Medicine and Dentistry.

In most mammals ovulation is a spontaneous event, but as first pointed out by Heape in some species, including the rabbit, the European ferret *(Mustelus putorius)*, and the domestic cat, ova are

discharged from the ovary only after copulation. Such observations as these make it necessary to know the exact facts concerning each species which is used for experimental work. The common Indian monkey, *Pithecus (Macacus) rhesus,* for example is being studied extensively and used for experiments in the physiology of reproduction, but thus far the ripening and mature Graafian follicle has never been described, and no specific statement has appeared as to whether or not ovulation is spontaneous.

It is true that in the group reported by me in 1923, ovulation was shown to have occurred in females which were kept in a group with no males present, but this is not proof of strictly spontaneous ovulation because we know that ovulation may take place in rabbits kept in a common cage with other females without the presence of males. In such cases the stimulus to ovulation is provided by homosexual pseudo-copulation.

The erection in the summer of 1928 of new quarters for my colony, by aid of a fluid research fund granted to this school by the Rockefeller Foundation, permitted a direct experiment on this question.

On November 20, 1929, four fully mature female Rhesus monkeys were placed in separate cages. The animals were placed in isolation in a series of cages separated from each other by heavy wire netting. They could see each other and could touch each other by reaching their arms or legs through the meshes of the cages, but no other contact could take place. No sexual activity was observed during the experiment. We have never seen sexual contact between female monkeys by manual or pedal manipulations, homosexual activity always taking the form of pseudo-copulation. For this reason it is reasonably certain that in the experiment no sexual stimulation of other than psychic nature could have occurred. No male animals were visible from the cages in which these 4 females were housed. The animals were kept in isolation through the early winter. One of them was examined by laparotomy under ether on January 24, 1930; the others on January 27, February 14, and March 1. When explored all of them showed recent corpora lutea in their ovaries, thus indicating the occurrence of spontaneous ovulation.