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**Effect of an Injury Confined to One Rat Incisor and its Investing
Tissues Upon the Other Incisors.**

I. SCHOUR. (Introduced by W. F. Petersen.)

*From the Department of Dental Histology, University of Illinois, and the
Department of Anatomy, University of Chicago.*

The effect of experimental injuries to the lower incisors and their investing tissues was studied in 22 rats of 21-450 days of age and over a period of from 31 to 158 days. The experimental animals were selected at random from the normal rats of 4 different colonies and over a period of more than 2 years in order to avoid the possibility of using a susceptible strain. Litter-mate controls of 17 experimental animals were studied in addition to 63 normal animals obtained from similar sources.

The rate of eruption was measured and weekly records of the gross appearance of the teeth and jaws were kept throughout the duration of the experiments. A radiographic, anatomic and histologic study was made of the teeth after death. The experimental injuries were in the nature of fracturing of one or 2 lower incisors and their investing tissues. In some cases, one lower incisor and its investing tissues were fractured while the enamel epithelium of the other lower incisor was injured with a fine needle. In no case were the upper incisors injured.

The control animals showed a normal rate of eruption and a normal radiographic and histologic picture of the dental tissues. Those of the experimental animals that were studied preceding the injuries showed a normal rate of eruption and a normal appearance of the teeth.

In 85% of the experimental animals, the result of the injuries were: (a) Considerable retardation in eruption and (b) more or less severe histo-pathologic changes in the dental tissues, particularly the enamel and the enamel epithelium, in the injured teeth and in varying degrees in the uninjured teeth as well.

The changes were progressive and more or less permanent. In some cases they appeared within a week following the operations.

Series of histologic and experimental studies are being made to investigate the possible mechanical (functional), neural, cytolytic, or other explanations of this reaction, which reminds one of "sympathetic" ophthalmia. The first explanation seems to be ruled out in certain cases where practically normal function was maintained throughout the post-operative period.

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Relation of Induced Anoxemia to the Pain of Muscular Exercise.*

MILTON KISSIN. (Introduced by L. N. Katz.)

From the Heart Station, Michael Reese Hospital, Chicago.

Exercise of the forearm during the time that the arterial blood oxygen is progressively lowered will initiate pain in the exercised muscles. The pain disappears when the blood is suddenly saturated with oxygen although the exercise be continued. If the same exercise is performed at the same rate while the arterial blood remains saturated with oxygen, no pain appears. Increasing the frequency of the exercise may cause pain to appear even when the blood is saturated with oxygen. Decreasing the frequency of exercise while maintaining the arterial oxygen at a low level may result in no pain.

This work can be correlated with the reports of MacWilliam and Webster¹ and of Lewis, Pickering, and Rothschild,² who found that

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¹ MacWilliam, J. A., and Webster, W. J., *Br. Med. J.*, 1923, 1, 51.

² Lewis, T., Pickering, G. W., and Rothschild, P., *Heart*, 1931, 15, 359.