

The distribution of monocytes, eosinophiles, and basophiles did not vary significantly.

Discussion. From the study of the tabulations it appears that, contrary to expectations, there was an immediate decrease in the relative number of polymorphs in more than one-half of the cases studied immediately after exercise or at the onset of the fatigue phase. Among the lymphocytes the greatest change appears as a relative increase in numbers of large lymphocytes as well as a significant relative increase in the total lymphocytes in more than one-half of the cases studied.

It appears that at the onset of the fatigue phase there is a significant lymphocytosis suggestive of an "irritation phenomenon" such as is frequently found in infections or other depleting conditions.

11798

Location of Inhibitory Respiratory Center in Cerebral Cortex of the Dog.

PERCIVAL BAILEY AND WALTER HAYNES. (Introduced by Arthur Weil.)

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There is considerable discrepancy in the literature concerning the location of the inhibitory respiratory center in the cerebral cortex of the dog. Spencer¹ originally located it in the allocortex, medial to the sulcus rhinalis. Bucy and Case² located it just below the anterior extremity of the coronal sulcus and Smith³ farther posteriorly in the gyrus compositus anterior. Because of this uncertainty we have repeated these experiments using the technic of Bailey and Sweet⁴ which, by exenteration of the orbit, permits access to the entire orbital region of the frontal lobe without the necessity of retracting the brain. Under these circumstances, using either ether or nembutal for light anesthesia, the inhibitory respiratory region is found to be a very small area situated in the gyrus compositus anterior just lateral to the posterior extremity of the gyrus proneus. It is definitely lateral to the sulcus rhinalis and sulcus supraorbitalis.

¹ Spencer, W. G., *Philos. Trans.*, 1894, B **185**, 609.

² Bucy, P. C., and Case, T. J., *J. Nerv. and Ment. Dis.*, 1936, **84**, 156.

³ Smith, W. K., *J. Neurophysiol.*, 1938, **1**, 55.

⁴ Bailey, P., and Sweet, W. H., *J. Neurophysiol.*, 1940, **3**, 276.

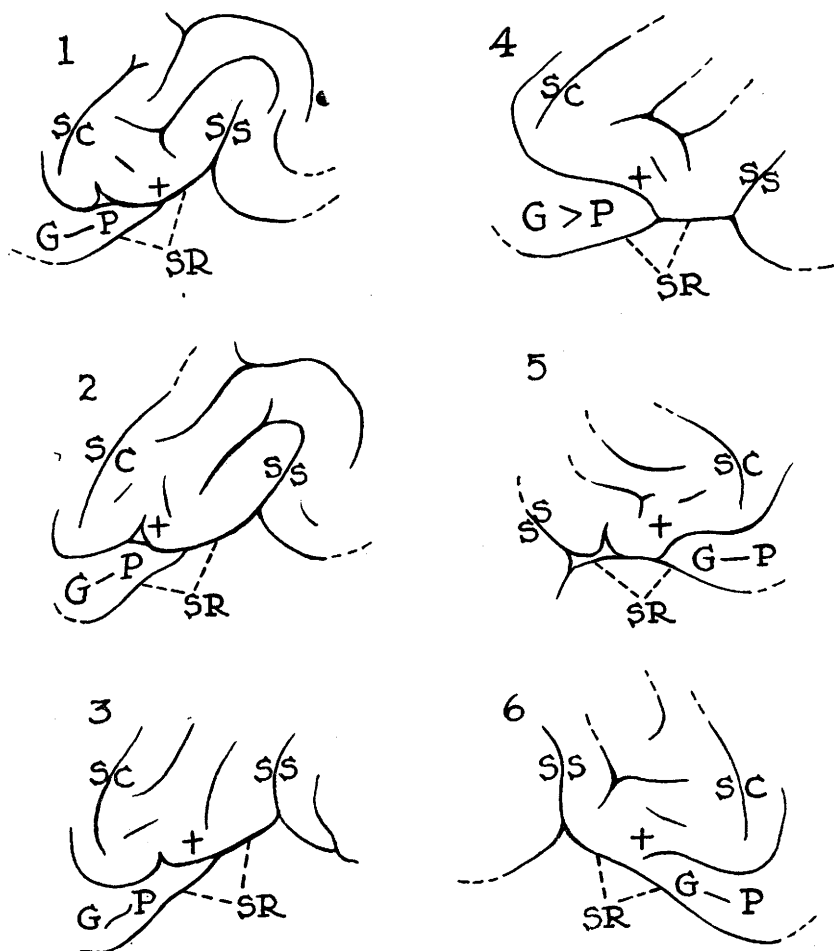


FIG. 1.

The inhibitory respiratory center is marked by a +. SC—sulcus coronalis; SS—sulcus Sylvii; SR—sulcus rhinalis; GP—gyrus proreus.

We have never obtained slowing or arrest of respiration by stimulation medial to the sulcus rhinalis. There is considerable variation in the pattern of gyri and sulci in this region of the dog's cortex. The accompanying diagram (Fig. 1) shows the location of the inhibitory respiratory center in 6 dogs. It lies always in the gyrus compositus anterior just posterior to the area indicated by Smith. This seems to be the area 4 c of Klempin.⁵ We have never obtained inhibition from any other area of the lateral, orbital or medial surface of the frontal lobe.

⁵ Klempin, D., *J. Psychol. u. Neurol.*, 1921, **26**, 229.