group does not take part in the binding to the amino-acids. A similar conclusion is suggested by the results of Wang *et al.*⁷, who obtained urea by alkaline hydrolysis of the flavin peptide.

The quenching due to the peptide chain, which in flavin peptides partly overlaps that of purines, may account for the smaller difference of molar fluorescence between dinucleotide and mononucleotide and for the weaker effects of adenosine.

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PHYSIOLOGY

Interaction of Slow Rhythmic Changes in the Nervous System

It is fairly well known that there are slow rhythmic changes in the nervous system with frequencies less than 1 hertz which are supposed to be due to the irradiation of excitation from the respiratory centre during inspiration and/or expiration^{1,2}. Some of these changes manifest themselves as rhythmic movements of the extremities.

We were able to show in chronic experiments with 44 unanaesthetized and trained dogs, that there are rhythmic changes in shivering in slightly cooled animals, which are definitely related to respiration. It is possible to observe bursts of shivering connected with each inspiratory movement. By slight warming of the mentioned animals (29.4°–35.5° C up to 33.0°–38.9° C), in most cases the synchronism with respiration of the shivering movements

Fig. 1. A, Dog. Rectal temperature, 36° C. Synchronism of the movements of the limbs with respiration in relation, 1:2. Registration (from above): EMG left hind limb, respiratory movement of the chest (inspiration up), EMG right hind limb. Time: 1 sec, 15 mm. B, Dog. Rectal temperature, 36.1° C. Synchronism in relation, 2:1. Inhibitory action during expiration. Registration: EMG right hind limb, respiration, EMG left hind limb. Time: 1 sec, 15 mm.

Fig. 2. A, Dog. Rectal temperature, 33.5° C. Burst of shiver independent from the respiratory movements. Registration: EMG left hind limb, respiration, EMG right hind limb. Time: 1 sec, 15 mm. B, Dog. Rectal temperature, 37.1° C. Independent rhythm of the shivering movements, synchronizing later the inspirations. Registration: Respiration, EMG right hind limb. Time: 1 sec, 15 mm.

is changed, remaining in relation of the whole numbers (Fig. 1A). At last the movements were fully abolished in all experiments. Occasionally we observed synchronisms in other relations, 1:3, etc., or even 2:1 (Fig. 1B). Rarely an independent rhythm of bursts of shiver could be recorded fully asynchronous with the respiratory frequency (Fig. 2A) or functioning as a pace-maker of respiration (Fig. 2B).

In most cases it is the inspiration which plays a facilitatory part in producing changes in the muscular tonus; we never observed such facilitation in conjunction with the expiration. On the other hand, it was possible to observe an inhibitory action during the expiration (Fig. 1B).

Evidently the observed rhythmic changes of the muscular tonus are due to interaction of two slow rhythmic events in the nervous system, one connected with thermoregulation, the other with respiration.

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Conjugation of Plasma Aldosterone and Tetrahydroaldosterone after Administration of 1,2-Tritiated-d-Aldosterone

ALDOSTERONE (11 β ,21-dihydroxypregn-4-ene-3,20-dione-18-al), its acid-labile conjugate¹⁻³ and tetrahydroaldosterone (3 α ,11 β ,21-trihydroxy-5 β -pregnan-20-on-18-al)^{4,5} have been found in human urine. Only aldosterone has been found in the peripheral blood of man⁶⁻⁸. We now wish to report the isolation of tetrahydroaldosterone from human plasma.

Three normal subjects received 10 μ c. of 1,2-tritiated-d-aldosterone (specific activity 100 μ c./ μ g) by injection into the antecubital vein and 50 min later 200 ml. of blood were drawn into heparin. Radioactivity was measured in an automatic liquid scintillator (Tri-carb model 314 EX,