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LETTERS TO THE EDITOR

To the Editor:

The April, 1971 J.I.D. carries a report on the effect of Aldosterone on Sweating in the Cat[1], which purports to show that aldosterone induced changes in sweat rate and solute concentration result from action of aldosterone on the secretory process. The investigation is predicated on the assumption that "the glands have a nonfunctioning duct," which is inferred from the observation that sweat from the cat foot pad preparation is hypertonic.[2] However, there are data which indicate that the duct may be functional: water reabsorption does occur in this preparation and because it occurs while the secretory process is active, it probably occurs at a site other than the secretory locus, i.e., the duct.[3]

Sincerely yours,

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Stanford, California

April 29, 1971

REFERENCES

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2. Brusilow, S. W. and Munger, B.: Comparative Physiology of Sweat. Proc. Soc. Exp. Biol. Med. *110:* 317. 1962.
3. Lloyd, D. P. C.: Secretion and Reabsorption in Eccrine Sweat Glands. Advances in Biology of Skin. Vol. III. Eds. Montagna, W., Ellis, R. A. and Silver, A. F. Pergamon Press, New York, 1962.

To the Editor:

Dr. Chimoskey is correct when he states that our study on the effect of aldosterone on sweating in the cat is predicated on the assumption that the sweat glands in this species have a nonfunctioning duct. Although Lloyd's data suggest that the sweat duct in the cat is functional this is clearly not the case since in the cat sweat collected from the skin surface has the same ionic composition as the fluid produced by the secretory coil. Since the fluid does not change in composition during its passage through the duct the conclusion is inescapable that the sweat duct in the cat is acting merely as a passive conduit. The apparent discrepancy between Lloyd's data and the true state of affairs can be appreciated if the conditions of his experiment are understood. Lloyd noted that the time elapsing from stimulation of the nerve supplying the sweat gland in the cat to the time of emergence of sweat on the skin surface was directly related to the duration of time elapsing between stimulations. This seemed to indicate that the water within the duct was being reabsorbed since, the longer the time, the more water that would be reabsorbed and the longer it would take for sweat to re-emerge on the skin surface after stimulation. The validity of these observations is unquestionable but the conclusion is not. If one simply applies mineral oil to the cat's paw and repeats Lloyd's experiment the time of emergence of sweat is no longer related to the interval between stimulations. The correct interpretation of Lloyd's experiment is that during sweating the stratum corneum becomes hydrated before droplets of sweat appear on the surface. If a relatively long time elapses between stimulations, the stratum corneum becomes dehydrated and must rehydrate before a droplet of sweat appears. Therefore, the apparent time of emergence of sweat is long. If on the other hand, the stratum corneum is already hydrated, that is, shortly after a previous episode of sweating, sweat droplets appear rapidly and the apparent time of emergence is brief. Although this simple experiment has been performed in several laboratories the results have never been published. It is regrettable that this omission has led to confusion in the mind of a reader as well informed as Dr. Chimoskey.

Sincerely yours,

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May 26, 1971