terminations, and to Mrs. Charlotte A. Driscoll for the pantothenate assays.

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Conversion of Adrenocortical Hormones to More Polar Compounds by Adrenal Slices.* (20192)

ROBERT HAYNES, KENNETH SAVARD, AND RALPH I. DORFMAN.

From Worcester Foundation for Experimental Biology, Shrewsbury, Mass.

During the course of studies involving adrenal slice incubations, it was noted that extracts prepared from the slices after incubation sometimes contained 3 compounds which migrated very slowly on paper chromatograms. At other times these would not be present, or if present, in amounts which could not be detected.

The possibility was considered that these might represent conversion products of one of the known steroids. Consequently, hydrocortisone was incubated with adrenal slices. The incubation was carried out with 2.2 g of adrenal cortical tissue slices. Four and seven tenths mg of hydrocortisone were added to the incubating medium which was saline-phosphate (4:1), pH 7.3. Extracts made from the medium and slices were purified by silica gel chromatography. The purified fractions were then chromatographed on filter paper using the technic of Bush(1). In this particular incubation, adrenal slices incubated without added hydrocortisone produced no detectable quantities of the polar compounds, whereas the extracts from the incubation with added hydrocortisone showed the 3 polar compounds on the paper chromatograms (Fig. 1). The hydrocortisone had previously been shown to be chromatographically homogeneous.

The three compounds absorbed ultraviolet light. They reduced alkaline silver diamine and blue tetrazolium dye. They formed orange derivatives of dinitrophenyl hydrazine. The characteristics of these compounds suggest they may be identical with the three compounds "Ai", "Aii", and "Aiii", described by Bush(1) as appearing in the "amorphous" fraction of adrenal extracts.

Incubation of corticosterone with adrenal

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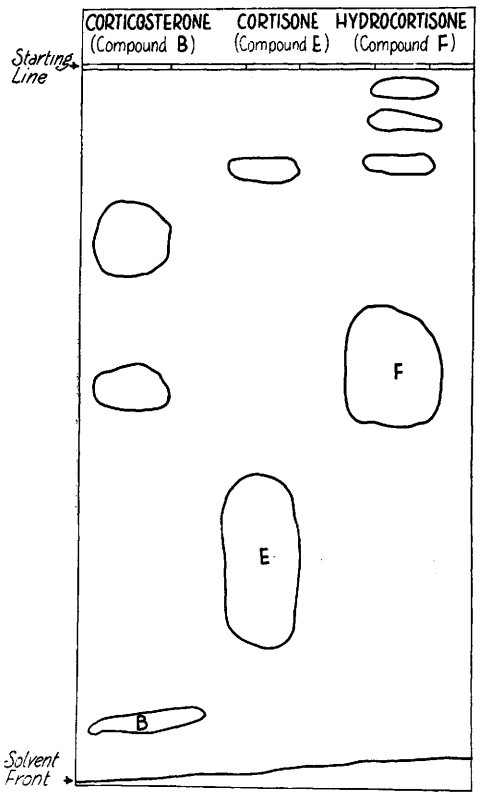

FIG. 1. Paper chromatogram of adrenal slice incubations of corticosterone, cortisone, and hydrocortisone. Compounds were outlined by their U. V. absorption. These substances also reduced blue tetrazolium.

tissue produced two compounds more polar than the starting material. A polar compound was produced when cortisone was incubated with adrenal tissue whose chromatographic mobility was similar to one of the compounds from the hydrocortisone incubation (Fig. 1).

Since the 3 products of hydrocortisone incubations possess the Δ^4-3-ketone and α-ketol groupings and have distinctly lower mobilities than the original substrate, it is likely that additional oxygen functions have been put into the nucleus perhaps at carbons 6, 16, or both.

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Effects of Amphetamine and Its Isomers on Excretion of Sodium and Water in the Rat.* (20193)

LEO A. SAPIRSTEIN, RANDOLPH ANDREWS, ANDREW PULTZ, AND ANTHONY RIDOLFO.
From the Department of Physiology, Ohio State University, Columbus.

Recent reports(1-3) indicate that certain sympathomimetic drugs have important effects on the renal excretion of electrolytes and water. Although amphetamine is sympathomimetic, it has been reported that its urinary effects are variable(4) or negligible(5). The determination of urinary sodium has not, however, been carried out in animals or men receiving amphetamine; and in the experiments cited, no control of water or sodium intake was attempted. In the present communication, the effects of amphetamine and its isomers on the excretion of sodium and water in rats under controlled conditions of water and salt loading are described. Amphetamine (Benzedrine) and its dextrorotatory isomer (Dexedrine) and to a somewhat lesser extent the levorotatory isomer (Levedrine) appear to be powerful natriuretic and diuretic agents in all conditions studied.

Methods. Rats weighing from 200 to 350 g and of either sex were used. The drug to be investigated was given by intraperitoneal injection. Animals under salt load received 20 ml of isotonic saline by the same route. Other animals were used after an 18-hour fast during

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