cholesterol, and that it is formed there by dehydrogenation of cholesterol.

The quantitative data indicate that only a portion of the cholesterol is dehydrogenated.

Detailed experimental results will be published elsewhere later.

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Pressor Material Prepared from Hæmoglobin

ASSOCIATED with hypertension in the 'Goldblatt animal', the formation of a pressor polypeptide has been demonstrated. It has been shown by Page and Helmer[1] that the action of renin on α_2-globulin produces a histidine-rich polypeptide, angiotonin (see also Edman[2]), which has considerable pressor activity. A peptide having similar activity was obtained by Croxatto and Croxatto[3] by the action of pepsin on α_2-globulin, and this substance, pepsitensin, was shown to be distinct from angiotonin; and Dawson and Findlay[4] have shown the formation of such peptides from hæmoglobin in blackwater fever.

A substance possessing pressor activity has now been obtained in a partially purified form from hæmoglobin by the action of pepsin. The substrate was ox hæmoglobin isolated from fresh defibrinated blood, and the pepsin used was crude B.P. pepsin and highly active material prepared from this by the method of Northrop[5]. The hæmoglobin was suspended in water at *p*H 6 and incubated at 37° for 10 min. with the pepsin and the material immediately autoclaved at 10 lb. pressure for 10 min. Subsequent purification involved treatment with lead and silver salts and nitranilic acid, as described by Plentl and Page[6] for angiotonin. The material has been tested for pressor activity, following intravenous injection, by its effect on the resting blood pressure of a spinal cat, and Fig. 1 shows a typical response together with the response to 0·5 ml. 1/100,000 adrenaline; in this tracing a rise in blood pressure of 53 mm. in response to 7·5 mgm. of material is seen. The material stimulates the gastro-intestinal tract of the cat, causing vomiting and defæcation, and demonstrates tachyphyllaxis.

During the above experiments it was found that a substance is present in crude pepsin which will strongly inhibit the action of adrenaline but has not itself a depressor action. A suspension of B.P. pepsin in water at *p*H 6·0 was incubated at 37° for 2 hr., autoclaved at once at 10 lb. pressure for 10 min., filtered, concentrated *in vacuo*, and the final concentrate poured slowly into two volumes of acetone, left in the refrigerator over night, filtered and concentrated to a low volume. Fig. 2 shows the blood-pressure response of a spinal cat to 0·5 ml. 1/100,000 adrenaline, and the same dose administered 4 min. after intravenous injection of the inhibitory

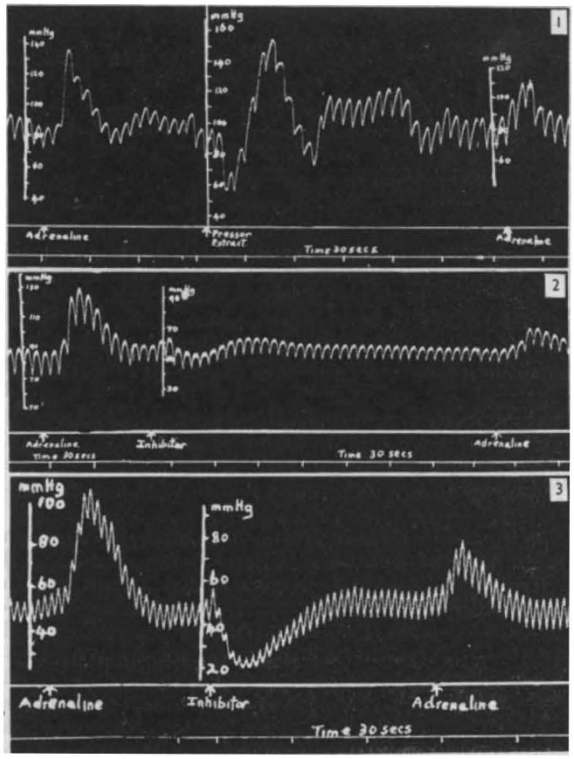

Fig. 1. Effect of pressor extract from hæmoglobin

Fig. 2. Inhibition of adrenaline by crude pepsin extract

Fig. 3. Inhibition of adrenaline by fresh aqueous hog mucosal extract

material; the action is prolonged, as the response to adrenaline was no greater 1½ hr. after injection of this material.

An aqueous extract of fresh minced hog mucosa from three stomachs was prepared; this was added to two volumes of acetone and the resulting supernatant concentrated *in vacuo*. The concentrate was extracted with ether, adjusted to *p*H 5·5, autoclaved at 10 lb. pressure for 10 min., filtered, added to two volumes acetone and the supernatant again concentrated, final volume 45 ml. On testing this material by the above method, it was found (see Fig. 3) that the response to adrenaline was diminished up to 4 min.; the material showed a slight depressor action. The presence of an inhibitor in fresh hog stomach suggests that that found in crude pepsin is not an artefact consequent upon the preparation of the pepsin.

Further investigation into the chemical nature and physiological action of these materials is in progress and will be described elsewhere.

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