intravenous injection of hexamethonium, although the recovery was slower than in normal animals. In nephrectomized cats, tolerance occurred as rapidly as in normal animals. By contrast, the ganglia of eviscerated or dehepatized cats did not develop tolerance after an intravenous injection of hexamethonium; but, when by a cross-circulation experiment the isolated liver of another animal was incorporated into the circulation, tolerance developed as in the whole animal.

Solutions of hexamethonium were assayed for this substance biologically and by a modified bromphenol blue method[3] before and after perfusion through an isolated liver, and before and after the solution was incubated with liver homogenates. The concentration of hexamethonium was rapidly reduced until none could be detected. The solution of hexamethonium treated with liver homogenate, when applied to isolated ganglion, produced resistance to the effects of further hexamethonium. It was concluded that the action of the liver on hexamethonium gave rise to a substance which competed with hexamethonium at the ganglion without itself producing any important degree of ganglionic block.

Studies on the nature of the liver principle which inactivated hexamethonium suggested that it is an enzyme, in that alterations in *p*H, temperature and the action of certain chemical substances reduced its activity and it is completely inactivated by trypsin digestion. The principle has been isolated in comparatively pure form, and is very active in destroying hexamethonium.

Estimations carried out on the excretion of hexamethonium have suggested that about 60 per cent of a parenteral dose is excreted in the urine. Evidence is available suggesting that the remainder is metabolized, presumably in the liver.

The work has given information which throws light on the mechanism of the development of toleration to the ganglion-blocking action of methonium compounds, and may throw light on the mode of the production of the ganglionic-blocking effects of these agents.

Papers embodying the results of this investigation will be published elsewhere.

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Galactopoietic Action of Thyroxine in Cattle kept in Subtropical Countries

A perusal of the available literature shows that no systematic work has been so far carried out to study the effects of the oral administration of thyroxine on the daily milk yield of different indigenous breeds of buffaloes and cows, bred in subtropical countries such as western Pakistan[1]. Two preliminary experiments were carried out to study the effects of the daily feeding of thyroxine in suitable doses, for a period of four weeks, on the daily milk yield in a six-year old Murrah buffalo and a five-year old Shaiwal cow kept in Lahore during October–November 1953.

The experimental animals (two buffaloes and two cows) were selected in such a way that the age of the animals, number and stage of lactation and the milk yield of the experimental animals were very close to that of the controls. The experiments were started about eight and twenty weeks after calving in the buffaloes and cows respectively. The animals were given orally 15 gm. of thyroprotein (containing 0·75 per cent *l*-thyroxine on bioassay) per animal. Thyroprotein under the registered name of 'Protamone' was kindly supplied by Cerophyl Laboratories, Kansas City, U.S.A. This preparation was adopted because it affords a ready means of administration of thyroxine by farm workers. The animals were milked twice a day and the daily milk yield of each animal was recorded. As the body temperature gives some indication of the physiological state of the animal body, the rectal temperatures of the animals were recorded daily. The mean minimum and maximum atmospheric temperatures for the months of October and November were 63·0° and 93·9° and 50·0° and 82·0° F. respectively, and the mean relative humidities were 56 and 69 per cent.

During the four-week period, the daily yields of the control and treated buffaloes were $22{\cdot}7 \pm 0{\cdot}027$ and $27{\cdot}1 \pm 0{\cdot}018$ lb. respectively. Statistical analysis of the results showed that thyroxine therapy resulted in a highly significant increase in the daily milk yield of the experimental buffalo ($t = 16{\cdot}815$). The average daily milk yields of the control and experimental cows were $12{\cdot}0 \pm 0{\cdot}11$ and $13{\cdot}7 \pm 0{\cdot}24$ lb. and the increase was not significant.

The mean daily temperatures of the experimental animals, when compared with those of their respective controls, did not show any significant difference throughout the experimental period, indicating that the administration of thyroxine did not affect the animal body adversely.

There are some indications that an optimal increase in the daily milk yield of the lactating animals can only be obtained if thyroxine therapy is started at an early stage of lactation.

This work is being continued.

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May 12.

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Occurrence of *trans*-Acids in Animal Fats

Bertram's discovery[1] that ox and sheep fats, and butterfat, contain traces of *trans*-Δ^{11} octadecenoic (vaccenic) acid has been confirmed by other investigators[2,3], who have shown that this acid also occurs in traces in lard.

Using infra-red absorption technique, Swern *et al.*[4] recently found that beef fat contained not traces, but 5–10 per cent of *trans*-acids. These consisted of a mixture of Δ^{9} and Δ^{11} octadecenoic acids. By a similar procedure Cornwell *et al.*[5] found 5·0–9·7 per cent of *trans*-acids in butterfat. In the present work, undertaken to elucidate the origin of these *trans*-acids, we have estimated by infra-red absorption their content in the body fats of various animal species.

The table shows a marked difference in the *trans*-acid content of ruminants as compared with non-ruminants. The small amounts of *trans*-acids in pig fat could be derived from the skim-milk diet, as