sulphate and for > 60 days with suramin under challenge with 10,000 trypanosomes[4]. Suramin–'Berenil' complex completely protected mice up to 57 days, and only one of the two mice challenged on the 77th day after treatment.

The encouraging result obtained with suramin–antrycide complex in the investigation recorded here suggests further investigations with it under greater challenges, as also trial with it in large animals.

We thank Dr. H. D. Srivastava, director of the Indian Veterinary Research Institute, for providing facilities for work and for permission to publish the results.

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Mechanism of Early Sporidesmin Intoxication in Sheep

In a recent publication[1] on the effect of sporidesmin intoxication in sheep, attention was directed to the fact, based on histopathological evidence, that enterohepatic disturbances precede biliary obstruction. Furthermore, the total liver lipids were found to be increased in the intoxicated group of animals.

This report outlines a more detailed investigation (to be published elsewhere) into the nature of these liver lipids. In addition, the mechanism of the characteristic lipid changes induced by sporidesmin intoxication is considered in the light of the available information.

From a group of eight weaned lambs four animals received an oral dose of sporidesmin (1 mg/kg bodyweight). All animals were killed two days after dosing. The livers were excised immediately, sliced into strips and frozen in liquid nitrogen. They were then stored at −20° C until required for analyses. The total lipids were extracted by means of a modification of the Bligh and Dyer procedure[2]. Eighteen lipid components were isolated from each liver lipid extract by means of a combination of DEAE, silicic acid-silicate, and silicic acid column chromatography. Identification was based on reverse-phase paper chromatography, infra-red spectrometry and chemical analyses. During the course of this investigation it has become evident that the liver triglyceride-levels of the intoxicated group of animals were increased about 100 per cent above the triglyceride-levels of the normal group. No significant changes were found in the other liver lipid components.

There is adequate evidence that the liver is the main source of circulating plasma triglycerides[3–8]. Although fatty infiltration of the liver can be induced by a wide variety of toxic substances and metabolites, the lipids accumulating in the liver are predominantly triglycerides[9–13]. Oral administration of hepatotoxins, such as carbon tetrachloride, also results in a rapid increase of liver triglycerides. This has been interpreted as the result of a malfunction of a hepatic triglyceride secretory mechanism[14]. Many hepatotoxins appear to inhibit or destroy one or more steps in the conversion and secretion of liver triglycerides to plasma lipoproteins. The initial conversion of plasma non-esterified fatty acids to liver triglycerides appears to be unaffected[14,15]. Whereas the liver triglyceride-levels rapidly increase as the result of the action of hepatotoxins, the plasma triglyceride-levels, in general, become markedly decreased[14]. In addition, because of their slower rates of metabolic turnover, the plasma phospholipid and cholesterol-levels remain unaffected in the initial stages.

It appears then that, on the basis of the present investigation and of previous work[1,16], the effect of early sporidesmin intoxication (that is, two days after dosing) on the liver resembles the effect of other hepatotoxins.

Thus in the clinical picture, described by Mortimer and Taylor[17], the early first-phase symptoms of the diphasic response strongly suggest that a metabolic disturbance in the liver triglyceride secretory mechanism is one of the contributing factors. The phospholipid- and cholesterol-levels remain relatively unaffected in both liver and plasma, whereas the liver triglyceride-levels increase. However, if the early pathological situation induced by sporidesmin intoxication inhibited exit of triglycerides from the liver into the plasma, as well as their exit from the plasma into the adipose tissue, a hypotriglyceridæmia might not be observed even though the hepatic secretory mechanism is inhibited or destroyed. Further work is in progress to determine the mechanisms which operate during sporidesmin intoxication.

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Correlation between the Reaction of Horses to a Pyrogen and their Immunological Responses in Antitetanic Serum Production

In a series of observations on about 5,000 rabbits, it was found that they could be divided into 3 groups according to their low-, medium- or high-temperature reactions to intravenous injection of a standard dose of sodium nucleinate (Merck and Co. Inc., U.S.A.; sodium salts of the acids from yeasts)[1,2]. In later experiments there was found to be a good correlation between the thermal reactions of individual rabbits to the pyrogen and the intensity of anaphylactic reactions, the measurement of the rise in temperature being determined during the anaphylactic reactions[3].

Similar relationships were demonstrated between the thermal reactions to the pyrogen of individual rabbits and the degree of production of lytic antibodies (anti-sheep hæmolysins)[4,5], the mean hæmolytic titres being 1:1534, 1:2957 and 1:4317 respectively for rabbits with low, medium and high temperature reactions.

It is recognized that there is considerable variation in both man and other animals in respect of the readiness with which individual members of a group can be immunized[6]. To our knowledge, however, there have been no reports of investigations of a possible relationship between the temperature reactions of animals to pyrogens and the readiness with which they can be immunized.