resistant strains, or possibly the drug may favour the development of resistant mutant strains. In either case, the early treatment of relapsed or re-infected cases before any marked change in the trypanosomes can be produced is obviously more likely to be successful. The limited experience we have had at Entebbe does support this contention. Repeated treatments in the field three to four times a year will, however, require careful planning, may prove expensive, and the ultimate success of such a procedure in tsetse areas still awaits proof.

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Influence of Streptomycin and Mineral Salts in the Action of Ribonuclease

The influence of streptomycin sulphate (Pfizer) and chloride (Ayerst) on the action of crystalline ribonuclease, prepared according to Kunitz[1], has been tested under the conditions indicated by Kunitz himself for the dosage of the activity of this enzyme.

The antibiotic was added to the fermentative system in the quantities required to attain concentrations decreasing from 1 : 1,000 to 1 : 10,000,000. As a substrate, a highly purified ribonucleic acid was used, which could be wholly precipitated by means of uranyl acetate in trichloracetic acid solution. Contrary to the observations of other authors[2], who have, in any event, worked under different conditions and employed different methods, inhibition of the action of the ribonuclease through the streptomycin was not observed.

Under the conditions in which our experiments took place, an increase of the activity of the enzyme was obtained, which at a 1 : 1,000 concentration of streptomycin reached an average increase of 50–60 per cent of the initial value. At a concentration of 1 : 10,000, the increase was 20 per cent on the average; and no change in comparison with the control could be observed by further dilution.

In order to investigate whether there is a relation between the power of streptomycin to precipitate the nucleic acids and its influence on the activity of the ribonuclease, the effect of soluble salts on such a precipitate was studied[3,4,5].

Sodium chloride and magnesium sulphate were used, and it was found that even in the absence of streptomycin, sodium chloride increases the effect of ribonuclease by about 60–65 per cent at a concentration of 0·45 per cent in the fermentative system. The effect resulting from the association of sodium chloride and streptomycin does not correspond to the addition of the effects of each substance taken separately. In fact, in a system containing streptomycin at a concentration of 1 : 1,000 and sodium chloride at a concentration of 0·45 per cent, an average increase of only 75 per cent is obtained.

Magnesium sulphate also shows an activating action on ribonuclease, greater than that of sodium chloride at the same concentration. Indeed, it produces an increase of 50–60 per cent at a concentration of 0·1 per cent, whereas at such a concentration sodium chloride is wholly ineffective.

The association of magnesium sulphate and streptomycin does not produce an effect corresponding to the addition of both actions.

The effect of other substances on the action of ribonuclease is being studied. The results of such studies will be published later, together with a detailed description of the method employed.

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Origin of Hyaluronidase in the Rat Testis

Duran-Reynals[1] demonstrated that mammalian testes contained a factor—the spreading factor—which was capable of increasing the permeability of the connective tissue. This observation has been confirmed by other investigators, and the factor has been identified as the enzyme hyaluronidase. Sprunt *et al.*[2] showed that hyaluronidase was present in testes from adult rats, but not in testes from infantile or cryptorchid rats. In their opinion, the formation of hyaluronidase depended on complete spermatogenesis.

Eichenberger[3], Kurzrok *et al.*[4], and Werthessen *et al.*[5] demonstrated a certain relation between the content of hyaluronidase of human semen and the number of spermatozoa, but were unable to demonstrate any complete proportionality. It was not ascertained at which stage of spermatogenesis the hyaluronidase was formed.

In order to find out at which time the hyaluronidase is formed in the testis, I have examined testes from rats of different ages, and the amount of hyaluronidase has been compared with the histological picture. The testicular tissue was extracted with water, five to ten times its own weight; the extraction took place at 4° C. and lasted twenty-four hours. Then the amount of hyaluronidase was determined by the viscosimetric technique described by Riisfeldt[6], which is a slight modification of the method of Hale[7]. The results are shown in the accompanying table.

No. of rat	Weight of one testis (mgm.)	Histological examination	Hyaluronidase content per gm. wet tissue (relative values)
28	85	Only spermatogonia	0
29	83		
38	90	Spermatogonia and few spermatocytes	(+)
39	95		
45	160	Spermatogonia, many spermatocytes and ÷ spermatozoa	++
81	385	Spermatogonia, spermatocytes and ÷ spermatozoa	+++
27	520	Spermatogonia, spermatocytes, few spermatozoa	++++
106	1250	Adult rat with normal spermatogenesis	++++