

fapyridine at both room and body temperatures was essentially the same as that of the respective controls. Neither the age of the specimen nor donor altered either susceptibility or resistance to these drugs. The results were equally negative if the sulfanilamide and sulfapyridine were added to Baker's solution plus semen or to undiluted semen.

Since an *in vitro* concentration of as much as 160 mg % was used, these results gain added significance when it is recalled that the maximum tissue fluid concentration of sulfanilamide achieved clinically is about 15 mg % and that of sulfapyridine about 10 mg %.

Summary: *In vitro* concentrations of sulfanilamide and sulfapyridine well above the tissue concentration achieved by therapeutic doses, do not affect the survival or activity of human spermatozoa.

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A New *Salmonella* Type Isolated from Apparently Normal Hogs.*

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In a study of the mesenteric lymph glands of apparently normal hogs in Uruguay, Hormaeche and Salsamendi¹ isolated numerous *Salmonella* types. In a repetition of this work Rubin² found that *Salmonella* strains could be isolated frequently from the mesenteric lymph glands of apparently normal hogs slaughtered at an abattoir in Kentucky. The purpose of the present paper is to describe a hitherto unrecognized *Salmonella* type encountered in these hogs. The organism is designated as *Salmonella lexington*.

Methods—Two mesenteric lymph glands were removed from each hog after the internal organs had been inspected. Lymph glands from 25 hogs were placed in a sterile container, taken to the labora-

* The investigation reported in this paper is in connection with a project of the Kentucky Agricultural Experiment Station and is published by permission of the Director.

¹ Hormaeche, E., and Salsamendi, R., *Arch. Urug. Med., Cir. y Espec.*, 1939, **14**, 375.

² Rubin, H. L., unpublished data.

tory and thoroughly ground with sand in a sterile mortar. To the ground mass was added 30 cc of sterile saline and 1 cc of the mixture was placed in each of 3 tubes of the tetrathionate enrichment medium of Kauffmann.³ After overnight incubation the enrichment medium was plated on brilliant green agar. *Salmonella*-like colonies which developed on the plates were examined serologically and their position in the Kauffmann-White classification determined. The methods used in the serological tests were those employed by Edwards.⁴

Results—In the particular lot of glands from which the new type was isolated 3 *Salmonella* species were found. In addition to *S. lexington*, *S. derby* and *S. bareilly* were also present.

The microorganism was a motile rod which possessed the usual biochemical and tinctoral properties attributed to the genus *Salmonella*. It produced acid and gas from arabinose, dulcitol, glucose, inositol, mannitol, rhamnose, sorbitol, trehalose and xylose. Adonitol, lactose, salicin and sucrose were not attacked. Hydrogen sulfide was produced from 2% peptone water.

Examination of the somatic antigens of *S. lexington* revealed that it belonged to group E of the Kauffmann-White classification. Alcoholized suspensions were agglutinated to the titre of *S. nyborg* antiserum and absorption of the serum with *S. lexington* removed all somatic agglutinins for the homologous strain. The somatic antigens of *S. lexington* are III X XXVI

When the flagellar antigens of *S. lexington* were examined it was found that the organism was diphasic and displayed specific-non-specific phase variation. The specific phase was flocculated to the titre of serum derived from the alpha phase of *S. glostrup*, but was not affected by serums derived from the other antigens represented in the Kauffmann-White classification. Absorption of *S. glostrup* alpha serum with the specific phase of *S. lexington* removed all flocculating agglutinins for the homologous strain. The antigen of the specific phase of the organism is z₁₀.

The nonspecific phase of *S. lexington* was agglutinated by serums derived from all the nonspecific phases of the Kauffmann-White schema. It was then tested with absorbed serums containing the factors 2, 3, 5, 6 and 7, respectively. Agglutination occurred only in the presence of factors 3 and 5. When antiserum derived from the nonspecific phase of *S. choleraesuis* was absorbed with the nonspecific phase of *S. lexington* residual agglutinins amounting to less than

³ Kauffmann, F., *Z. f. Hyg.*, 1935, **117**, 26.

⁴ Edwards, P. R., *J. Bact.*, 1936, **32**, 259.

2% of the original titre were left for the homologous strain. The nonspecific antigens of *S. lexington* are 1,5...

Summary: A new *Salmonella* type, *Salmonella lexington*, is described. It was isolated from the mesenteric lymph glands of apparently normal hogs. The organism is represented by the antigenic formula III X XXVI:z₁₀:1,5...

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Mineral Distribution in Some Nerve Cells and Fibers.*

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It is known from examination of many types of tissue that Mg and Ca, as revealed by the electron microscope, is located in areas which show white ash following microincineration. In nerve tissue certain difficulties have hampered a direct study of Ca and Mg by means of the electron microscope. Some of the findings in incinerated sections of frog sciatic and sympathetic ganglia are believed to be of significance although we have not been able to identify the salts as clearly as is desirable.

When sections of frozen and dehydrated (Scott and Packer¹) frog sciatic are carefully incinerated and examined by dark field (Scott²) the large myelinated fibers at the periphery of the nerve leave residues of white ash probably consisting largely of Ca and Mg. The ash is clearly the remains of the myelin sheath as it corresponds almost exactly with stained preparations of the same nerve taken a few levels either above or below. The point to emphasize, however, is that there is no visible residue of any sort in the tissue spaces surrounding the nerve fibers.

In sharp contrast to plentiful mineral in the nerve fibers and little if any in the tissue space is the picture obtained when sympathetic ganglia are incinerated following the same treatment. The sympathetic ganglion cells are recognizable by their residue. Nuclear, nucleolar and Nissl substance ash is dense and of the variety associated with the presence of Ca and Mg. There is as a general rule

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¹ Scott and Packer, *Anat. Rec.*, 1939, **74**, 17, 31.

² Scott, G. H., *Am. J. Anat.*, 1933, **53**, 243.