in our last contribution. Blocking the -SH group of these with a benzyl, caused somewhat less oxidation to take place. This was also true when the amino group was blocked with acetyl and phenyl acetyl groups. When both the amino and sulfhydrate positions were blocked the oxidation was very much decreased, so that most of the cystine sulfur was excreted as of the type R-SH. It would seem from this table that in the oxidation of cystine the attack is most effective at the amino position and least (perhaps none) at the carboxyl.

SULFUR FROM CYSTINE COMPOUNDS.

	Fed	Eliminated			
		Total Cyst. S.		Total SO_4 S.	
	mg.	mg.	per cent	mg.	per cent
Cystine	321	297	93	264	89
Cysteine hydrochloride	258	265	102	207	78
Benzylcusteine	183	193	105	112	58
p-Cl Benzylcusteine	186	91	49	48	53
	186	174	94	111	64
Acetyl benzyl cysteine	153	181	118	105	58
Phenyl acetyl cystine	321	244	75	163	67
Phenyl acetyl benzyl-cysteine	117	185	158	60	32
Phenyl uramino cystine	315	277	88	114	41
Phenyl uramino cysteine	321	199	58	60	41
Phenyl uramino benzyl cysteine	123	45	36	(depressed below control level)	
Phenyl hydantoin cystine	345	168	47	81	41
	174	329	189	83	25
Phenyl hydantoin benzyl cysteine	125	82	65	0	0

120 (2352)

I. Experimental rabbit snuffles.

By L. T. WEBSTER (by invitation).

[*From the Laboratories of the Rockefeller Institute for Medical Research, New York City.*]

As part of a general experimental study of the epidemiology of certain bacterial infections of domestic animals, experiments have recently been made with rabbits with *Bact. lepisepticum.*

Rabbits developing spontaneous snuffles at the Rockefeller Institute have been examined bacteriologically during life and at autopsy and have been found to carry in their nasal passages *Bact. lepisepticum* as the predominating organism. This microbe has been classed wih the "pasteurella" or hemorrhagic septicemia group and is known as the bacillus of rabbit septicemia. The constant association of the organism with snuffles and its appearance simultaneously with spontaneous snuffles was considered as sufficient evidence to justify the employment of *Bact. lepisepticum* in an attempt to produce snuffles experimentally.

Efforts in this direction were followed by confusing and varied results until young rabbits bred and raised at the Rockefeller Institute from snuffles-free and *Bact. lepisepticum*-free parents were employed. These young rabbits which had not been exposed to snuffles and had always been free from *Bact. lepisepticum* were found regularly to respond to inoculation in a characteristic manner.

Cultures of *Bact. lepisepticum,* grown in broth, were dropped without trauma into the external nares by means of a 2 cc. Luer syringe. Two strains were employed for inoculation.

The less virulent strain was given to one series of five rabbits. Two of these rabbits developed snuffles; the five controls remained normal.

The more virulent strain was given to three series of 6, 12, and 22 rabbits respectively. The following tabulation shows the result:

Number series	Number rabbits injected	Number dying	Number surviving with chronic snuf.	Number surviving. No snuffles
1	6	3	2	1
2	12	3	8	1
3	22	13	4	5

Of the first series of six rabbits, three died, two developed chronic snuffles and survived, and one which had shown no evidence of infection remained well. Of the second series of 12, three died, eight developed chronic snuffles and survived, and one which had shown no evidence of infection remained well. Of the third series of 22, thirteen died, four developed chronic snuffles and survived, and five remained normal. Eight controls remained normal.

In short, 45 carefully controlled young rabbits were inoculated intranasally with two strains of *Bact. lepisepticum.* Nineteen in all died, 16 developed typical chronic snuffles, and 10 resisted infection. The 12 controls, kept under identical conditions with the experimental animals but not inoculated, remained well.

It may be concluded, therefore, that it is possible to produce typical snuffles in rabbits merely by dropping fluid cultures of *Bact. lepisepticum* of sufficient virulence into the nasal passages.

121 (2353)

II. Experimental rabbit pneumonia.

By L. T. WEBSTER (by invitation).

[*From the Laboratories of the Rockefeller Institute for Medical Research, New York City.*]

It was stated in the previous communication that following intranasal inoculation of *Bact. lepisepticum* into rabbits, a certain number of fatalities ensued. These animals died of pneumonia.

The time of onset of symptoms varied from 24 hours to three days following the inoculation. The rabbits developed signs of respiratory distress, appeared very ill, and showed serous or purulent discharges from the nares. Death ensued in from two to seven days as a rule.

Gross autopsy inspection showed fluid in the pleural cavity varying from a few drops to several cubic centimeters. In the acute cases the fluid was slightly cloudy; in the more prolonged cases it tended to be purulent. The appearance of the pleuræ varied in a corresponding manner from mere dullness to surfaces covered with fibrinous exudate. The lungs usually showed massive areas of consolidation; in early cases, on section, moist and hemorrhagic; in later cases, granular and dry. In some of the older cases the small bronchi exuded pus.

Histologically, the acute cases showed a pleural exudate consisting of fibrin, coagulated serum, and necrotic leucocytes. The pneumonic process seemed to start around the blood vessels where the adjacent alveoli were filled with fibrin, serum, and many red