

blood lactic acid and acetone bodies between pre-eclampsia and normal pregnancy, the hyperuricemia of pre-eclampsia can not be attributed to an elevation of these constituents. It is true that there are 3 relatively high lactic acid values in the pre-eclamptic group, but the average value is only 17% above that for the normal pregnant group. Moreover, 2 of these high lactic acid values are associated with the 2 lowest uric acid values and three of the highest uric acid values are associated with the lowest lactic acid values.

Since the hyperuricemia of pre-eclampsia is not due to an elevation of blood lactic acid or acetone bodies, it follows that the hyperuricemia of eclampsia also is not primarily due to this because pre-eclampsia and eclampsia are believed to be a single disease entity. However, a rise of these constituents in the blood due to the convulsions in eclampsia may possibly augment the pre-existing hyperuricemia.

Summary. The average blood lactic acid in 7 cases of pre-eclampsia was 12.9 mg % (8.0-18.6) as compared with 11.0 mg % (9.1-12.3) in 8 cases of normal pregnancy. The average blood acetone bodies in the pre-eclamptic cases was 0.8 mg % (<0.1-2.6) as compared with 1.3 mg % (<0.1-2.7) for normal pregnancy. The average blood uric acid for the pre-eclamptic group was 4.5 mg % and for normal pregnancy was 3.0 mg %. The rise in blood lactic acid in eclampsia occurs mainly after convulsions. The hyperuricemia of pre-eclampsia and eclampsia can not be primarily attributed to an elevation of blood lactic acid or acetone bodies.

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A New *Salmonella* Type, *Salmonella illinois*.*

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The *Salmonella* type to be described is represented by 7 cultures isolated from 3 outbreaks of animal disease. *Salmonella illinois* has been recognized in cultures isolated from hogs in Illinois by Dr. Robert Graham, from Hungarian partridges in Michigan by Miss

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Virginia Stoney, and from turkeys in Minnesota by Dr. B. S. Pomeroy. No other microörganism was found associated with the bacillus in any of the animals. The biochemical and serological characteristics of the seven cultures were identical. They were motile rods which conformed to the definition of the genus *Salmonella* in their morphological, tinctorial and biochemical properties. All produced hydrogen sulphide, failed to produce indol and did not liquefy gelatin. Arabinose, maltose, rhamnose, xylose, dulcitol, inositol and sorbitol were fermented with the production of acid and gas. Lactose, sucrose, salicin and adonitol were not attacked. Dextro-tartrate, levo-tartrate, citrate and mucate were fermented by the bacilli but meso-tartrate was not utilized.

On serological examination it was found that the bacilli be-

TABLE I.
Somatic Antigens of *S. illinois*.

Antigens	Serums							
	<i>S. senftenberg</i> (I III XIX) absorbed by				<i>S. anatum</i> (III X) absorbed by			
	Unabsorbed	<i>S. anatum</i> (III X)	<i>S. newington</i> (III XV)	<i>S. illinois</i>	Unabsorbed	<i>S. senftenberg</i> (I III XIX)	<i>S. newington</i> (III XV)	<i>S. illinois</i>
<i>S. senftenberg</i>	2000	1000	1000	1000	500	0	0	200
<i>S. anatum</i>	200	0	0	100	1000	200	200	500
<i>S. newington</i>	200	0	0	50	500	0	0	200
<i>S. illinois</i>	100	0	0	0	200	0	0	0

Antigens	Serums							
	<i>S. newington</i> (III XV) absorbed by				<i>S. illinois</i> absorbed by			
	Unabsorbed	<i>S. senftenberg</i> (I III XIX)	<i>S. anatum</i> (III X)	<i>S. illinois</i>	Unabsorbed	<i>S. senftenberg</i> (I III XIX)	<i>S. anatum</i> (III X)	<i>S. newington</i> (III XV)
				<i>S. illinois</i> + <i>S. anatum</i>				
<i>S. senftenberg</i>	500	0	0	200	0	200	0	0
<i>S. anatum</i>	500	50	0	200	0	200	0	0
<i>S. newington</i>	2000	1000	500	1000	500	1000	200	0
<i>S. illinois</i>	1000	200	200	0	0	2000	1000	1000

Figures indicate highest dilution in which agglutination occurred.
0 indicates absence of agglutination in a dilution of 1 to 25.

longed to Group E of the Kauffmann-White classification. Alcohol-treated suspensions were agglutinated by all serums containing agglutinins for antigen III. They were unaffected by serums representative of other groups of the diagnostic schema. The O antigens were examined more closely by agglutinin absorption tests, the results of which are given in Table I. It was found that *S. illinois* contained only a portion of antigen III and a portion of antigen XV. In addition it contained a strong somatic factor peculiar to itself. To the latter antigen the symbol XXXIV is assigned. The O antigens of *S. illinois* may be expressed as (III) (XV) XXXIV.

Examination of the flagellar antigens revealed that the organism was diphasic. Phase 1 of *S. illinois* was flocculated to titer by serum derived from phase 1 of *S. glostrup*. Likewise phase 1 of *S. glostrup* was flocculated to titer by serum derived from phase 1 of *S. illinois*. In reciprocal absorption tests it was found that phase 1 of each of these 2 organisms completely removed agglutinins from serum derived from phase 1 of the other. Phase 1 of *S. illinois*, like that of *S. glostrup*, is represented by the symbol z_{10} .

The non-specific antigens contained in phase 2 of the bacilli were tested with absorbed serums containing agglutinins for factors 2, 3, 5, 6, and 7 respectively. The organisms were agglutinated only by serum containing agglutinins for factor 5, which indicates that the organism lacks antigen 3 and has the non-specific formula 1, 4, 5 This assumption was confirmed by absorption tests. After absorption with *S. illinois*, serum derived from phase 2 of *S. cholerae-suis* contained a slight residue of agglutinins for phase 2 of *S. cholerae-suis* (1, 3, 4, 5 . . .), *S. thompson* (1, 3, 4, 5 . . .) and *S. newport* (1, 2, 3 . . .); but contained no agglutinins for phase 2 of *S. reading* (1, 4, 5 . . .) or *S. muenster* (1, 4, 5 . . .).

Summary. A new *Salmonella* type, *S. illinois*, is described. It has been found in hogs, partridges and turkeys. The antigenic formula of the bacillus is (III) (XV) XXXIV: z_{10} —1, 5