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Salmonella pomona and *Salmonella champaign*; Two Hitherto Undescribed Types Isolated from Fowls.*

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Fowls have been found to be one of the greatest reservoirs of *Salmonella* infection^{1,2} and it is not surprising that undescribed types occasionally should be isolated from them. In the present paper two such cultures are described.

A. Salmonella pomona. This type is represented by a single culture isolated in 1941 by W. R. Hinshaw from the intestine of a poult. Since the bird which yielded the culture was one of a group employed in experimental Hexamita infection no accurate estimate of the mortality caused by the bacillus is possible.

However, Dr. Hinshaw stated that the losses in the group of which this bird was a member were no higher than those usually encountered in similar studies.

The culture in question possessed the usual morphological, cultural and biochemical characteristics of the *Salmonella*. It was a motile organism which produced hydrogen sulfide but did not form indol nor liquefy gelatin. Acid and gas were produced from glucose, arabinose, maltose, trehalose, rhamnose, xylose and dulcitol. Lactose, sucrose, inositol and salicin were not fermented. Dextro-tartrate, levo-tartrate, mucate and citrate were utilized but meso-tartrate was not attacked.

When the somatic antigens of the culture were examined it reacted strongly in *S. tel-aviv*

serum but not with serums representative of the other O antigens of the Kauffmann-White schema. In absorption tests *S. pomona* removed all agglutinins from *S. tel-aviv* O serum and likewise *S. tel-aviv* removed all O agglutinins from a serum prepared from *S. pomona*. The O antigens, like those of *S. tel-aviv*, may be expressed as XXVIII.

Examination of the flagellar antigens revealed that the organism was diphasic. Phase 1 was flocculated to the titre of serum prepared from phase 1 of *S. madelia* and in absorption tests removed all H agglutinins from the serum. Phase 1 of *S. pomona* may be designated as y. Phase 2 of *S. pomona* was flocculated by serums derived from all the nonspecific phases of the Kauffmann-White classification. When tested with absorbed serums for factors 2, 3, 5, 6 and 7 it was agglutinated only by 7 serum. In absorption tests phase 2 of *S. pomona* removed all flagellar agglutinins from serum prepared from phase 2 of *S. madelia* (1, 7 . . .) and the antigens of phase 2 are 1, 7 The antigenic formula of *S. pomona* is XXVIII: y-1, 7

B. Salmonella champaign. *Salmonella champaign* is represented by a single culture isolated from the liver of an adult hen and forwarded to the writer by Dr. Robert Graham. No other losses in the flock of which the hen was a member were attributed to this organism. *S. champaign* differed in its biochemical characteristics from *S. pomona* only in that it produced acid and gas from inositol. Serological examination revealed that the O antigens of *S. champaign* were unlike those of any previously described *Salmonella* type. It was not agglutinated by O serums representative of the known types. Likewise, an O serum prepared from *S. champaign* failed to agglutinate the various O antigens of the genus at a dilution of 1 to 50 although the

* 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.

† The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Kentucky Agricultural Experiment Station.

¹ Edwards, P. R., *Proc. 7th World's Poultry Congr.*, 1939, 272.

² Edwards, P. R., and Bruner, D. W., *J. Inf. Dis.*, 1943, 72, 58.

homologous strain was actively agglutinated at 1 to 4000. To the O antigens of *S. champaign* the symbol XXXIX is assigned.

The organism was diphasic and its H antigens were identical with those of *S. thompson*. Phase 1 and phase 2 of *S. champaign* respectively removed all H agglutinins from serums prepared from phases 1 and 2 of *S. thompson*. Its H antigens, like those of *S. thompson* are

k-1,5 The antigenic formula of *S. champaign* is XXXIX: k-1,5

Summary. Two new *Salmonella* types were described. *S. pomona* was isolated from a turkey poult and was represented by the formula XXVIII: y-1,7 *S. champaign*, which possessed an undescribed somatic antigen, was isolated from a hen and was assigned the formula XXXIX: k-1,5

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Changes of Noble-Metal Electrode EMF of Cerebral Cortex.

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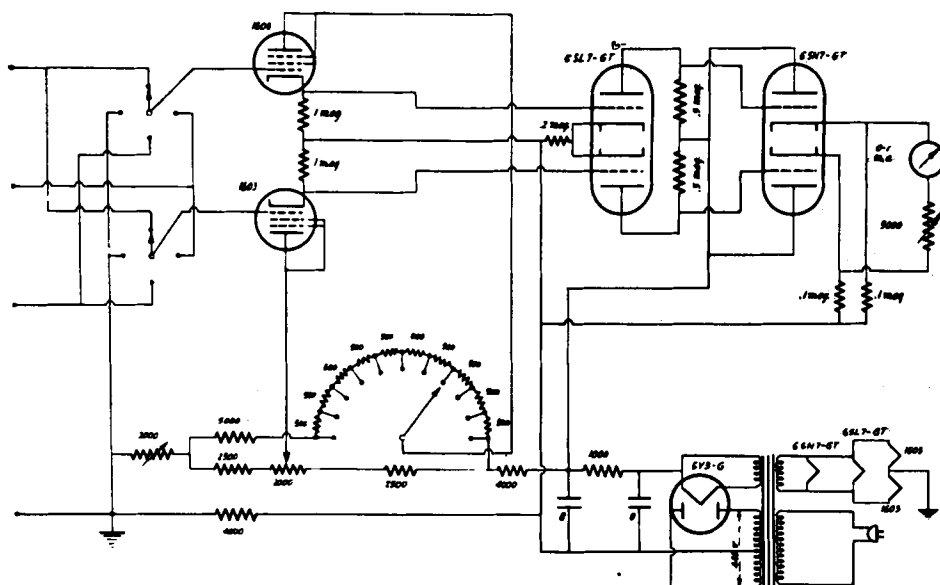


FIG. 1.

Circuit of the voltmeter, featuring cathode-coupled input which draws less than 10^{-12} amperes. The gain and the voltage-divider are so adjustable that the full-scale deflection of the meter, and also each step of the decade resistor correspond to 0.1 volt input. A d-c amplifier may be connected to the cathodes of the 1603's or of the 6SN7-GT for the purpose of recording.

Using any noble-metal (usually gold-plated platinum) as an electrode of 1.5 mm^2 in conjunction with a vacuum-tube voltmeter (see Fig. 1) drawing less than 10^{-12} amperes, it is possible to measure redox potentials *in vitro*. The same procedure has been applied to the cerebral cortex *in vivo*.

One noble-metal, one glass and 2 Ag-AgCl saline-wick electrodes were placed close together on the cerebral cortex of a cat. The EMF between each pair of electrodes was measured and, on some occasions, recorded continuously, on an Offner crystograph at .5 cm per min. The vacuum-tube voltmeters,