

Extrait des *Annales de la Société Belge de Médecine Tropicale*.
Tome XXXVI — N° 4 — 1956.
(Pages 393-394.)

Two new Arizona serotypes (7 : 27-31 and 28 : 26-28)

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(Accepté pour publication le 14 juillet 1956.)

The organisms herein described were isolated from snakes. Culture 3596-55 was isolated from a snake (*Elaphe quatuor luicata*) confined in the zoo of Antwerp, while strain 2368-53 was isolated from the feces of a snake (*Psammophis*) captured in the Belgian Congo. The organisms possessed the usual morphological, tinctorial, and cultural characteristics of the Enterobacteriaceae. The biochemical properties of the cultures were typical of the Arizona group. Hydrogen sulfide was produced and the Stern, methyl red and nitrate tests were positive. Gelatin was liquefied in 12 days but urea was not hydrolyzed and the Voges-Proskauer, KCN and indol tests were negative. Although acid was produced in Jordan's tartrate agar; D-, L-, and I- tartrate and mucate were not utilized in liquid media. Sodium citrate was utilized after two days (*). Growth occurred within 24 hours on Simmons' citrate agar and ammonium glucose agar. Acid and gas were produced promptly from glucose, arabinose, xylose, rhamnose, maltose, trehalose, mannitol, and sorbitol. Sucrose, raffinose, inositol, dulcitol, adonitol and salicin were not fermented. Lactose was fermented promptly by 3596-55 but acid appeared in lactose broth cultures of 2368-53 only after 20 days' incubation in tightly stoppered tubes.

An alcohol treated suspension of 3596-55 was agglutinated strongly in slide tests by Arizona 0 group 7 antiserum but not by antisera for other Arizona 0 groups. In tube tests, suspensions of the culture were agglutinated to 50 per cent of the titre of Arizona 07 serum and in absorption tests reduced the titre for the homologous strain from 1 to 1000 to 1 to 500.

The H antigens of 3596-55 were diphasic. Phase 1 was agglutinated to the titre of, and in absorption tests removed all agglutinins from, Arizona H27 serum. Phase 2 was agglutinated to the titre of,

* (*) The authors are indebted to Dr F. Kauffmann for the results of tests in organic acids.

and in absorption tests removed all agglutinin from, Arizona H31 serum. While the O antigens of 3596-55 were not identical with those of the test strain of O group 7, they were closely related. Since it is not wished to introduce unnecessary complexities into the O groups of the Arizona schema, the antigenic formula of 3596-55 is designated simply as Arizona 7 : 27-31. The antigens of this Arizona culture could be expressed approximately by the *Salmonella* formula 18 : z₁₀-z.

In slide tests an alcohol treated suspension of 2368-53 was agglutinated strongly by Arizona O group 28 antiserum but not by antisera for other Arizona O groups. In tube tests, the suspension was agglutinated to the titre of O group 28 serum and in absorption tests removed all agglutinin from the serum.

The H antigens of 2368-53 were diphasic. Phase 1 was agglutinated to the titre of, and in absorption tests removed all agglutinin from, Arizona H26 antiserum. Phase 2 was agglutinated strongly by antisera for H antigens 28a, 28b and 28c. In absorption tests 2368-53 removed all agglutinin from 28a, 28b serum, but left a marked residue of H agglutinin in 28a, 28c serum. The antigenic formula of the organism is 28 : 26-28a, 28b, or, briefly, 28 : 26-28. Only the H antigens of phase 2 of 2368-53 were related to antigens recognized in the *Salmonella* group. H antigen 28 of the Arizona group is closely related to antigen e,n ... of the *Salmonella* group.

Summary. — Two new Arizona serotypes (7 : 27-31 and 28 : 26-28) isolated from snakes were described. Attention was called to the antigenic relationships of these forms to certain *Salmonella* types.

Résumé — Les auteurs décrivent deux nouveaux sérotypes du groupe Arizona (7 : 27-31 et 28 : 26-28) isolés à partir de serpents. Ils attirent l'attention sur les relations antigéniques existant entre ces formes et certains types de *Salmonella*.

Samenvatting. — De auteurs beschrijven twee nieuwe serotypes van de Arizona-groep (7 : 27-31 en 28 : 26-28) afgezonderd uit slangen. Zij vestigen de aandacht op de antigenische verwantschap tussen deze vormen en bepaalde *Salmonella*-types.

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