A NEW SALMONELLA SEROTYPE: S. NISSI

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SUMMARY. A new Salmonella serotype ((6), (7), 14:b:-) was described and the designation S. nissii was assigned to it. The strain was isolated from a sailor who became ill after eating unripe fruit after leaving Japan.

The Salmonella serotype described in this report, Salmonella nissii, (627294) was isolated from the feces of a sailor on the S.S. Nissii who became ill on board following the eating of unripe fruit after leaving Japan. The organism was isolated from a stool specimen collected in Vancouver, but the individual had again sailed by the time a salmonella isolation had been confirmed.

The biochemical reactions given by strain 627294 were similar to those given by members of the genus Salmonella and were typical of those of subgenus I of Kauffmann (1960, 1963). Indole was not produced, the methyl red test was positive, the Voges-Proskauer test was negative and Simmons' citrate was utilized. Nitrate was reduced to nitrite, hydrogen sulfide was produced, and lysine and ornithine decarboxylases as well as arginine dihydrolase were produced. Gelatin was not liquefied, growth did not occur in KCN medium, and urease and phenylalanine deaminase were not produced. Sodium malonate was not utilized and beta-galactosidase was not produced (ONPG test, method of Le-Minor and Ben Hamida, 1962). When tested according to the method of Kauffmann and Petersen (1956), D-tartrate, L-
tartrate, citrate and mucate were utilized in one day and 
I-tartrate in two days. Acid and gas were produced rapidly 
from glucose, dulcitol, arabinose, galactose, inositol, levu-
lose, maltose, mannitol, mannose, sorbitol, trehalose, and 
xylose. Acid only was produced in rhamnose, and cello-
biose was fermented with gas production after 6 days incu-
bation. Lactose, sucrose, salicin, adonitol, glycerol, inulin 
and raffinose were not utilized.

Strain 627294 belonged to O group C1, reacted in absorbed 
single-factor antisera for O antigens 7 and 14, and was ag-
glutinated to the titer of S. eimsbuettel O serum ((6), (7), 14).
In reciprocal absorption tests strain 627294 removed all 
agglutinins from S. eimsbuettel O serum, and S. eimsbuettel 
removed all agglutinins from an O serum prepared against 
strain 627294. Hence, the O antigens of strain 627294 were 
(6), (7), 14.

The strain was monophasic and was agglutinated by a 
serum prepared against S. paratyphi B phase I H (b) (titer 
1/6400) to a dilution of 1/800 only. The H b antigen of strain 
627294 was not identical to that found in S. paratyphi B phase 
I H or to a number of other b-containing serotypes as well. 
It was, however, agglutinated to the titer of an antiserum 
prepared against S. bloemfontein phase I H (b), and in ab-
sorption tests reduced the titer of that antiserum for the 
homologous strain from 1/12,800 to 1/800. Similarly, 
when an antiserum prepared against the flagellar antigen 
of strain 627294 was absorbed with S. bloemfontein phase 
I H (b) the titer for the homologous strain was reduced from 
1/12,800 to 1/800. Complete absorption was not observed 
in either instance. S. bloemfontein was first isolated in 
1957 in England by Taylor who found (personal communi-
cation) that it had an additional b factor not present in the 
phase I H (b) antigen of S. paratyphi B. Strain 627294 was 
immobilized when it was inoculated into semisolid medium 
that contained H serum b, thus indicating that the serotype 
was monophasic.

Thus the antigenic structure of strain 627294 was deter-
mined to be (6), (7), 14:b:-, and the name Salmonella nissii 
proposed. A culture of strain 627294, the type strain of S. 
nissii, has been deposited in the American Type Culture 
Collection.
REFERENCES


Taylor, J. 1964. Personal communication.