

162 (1744)

Botulism; a study of the action of the toxin of *B. botulinus* upon the living tissues.

By **ERNEST C. DICKSON** and **RICHARD SHEVKY.**

[From Stanford University Medical School, San Francisco.]

In a study of the action of the toxin of *B. botulinus* upon the living body it was found that the upper and lower neurones of the skeletal motor nerve supply are unimpaired and that there is no disturbance in the spinal reflex arcs of the extremities. There is, however, definite evidence of a blocking of the nerve impulses in the nerves of the non-sympathetic portion of the involuntary nervous system, *e.g.*, the vagus nerve, the chorda tympani and the nervi erigentes. There is indication that this blocking is of a temporary and relatively unstable nature, and that it is not due to organic destruction of the nerve elements.

Cats, dogs and rabbits were used in the experiments.

163 (1745)

The agglutinating action of salvarsan in vitro and in vivo.

By **JEAN OLIVER** and **SOSABRO YAMADA.**

[From the Department of Pathology, Stanford University Medical School, San Francisco.]

A detailed study of the mechanism of the agglutinating action of salvarsan on red blood cells shows the following points.

In vitro salvarsan has a fairly constant titre of agglutination. There is a progressive drop in this titre as the solution is oxidized on standing. Although the red cells have the power to bind salvarsan in isotonic sugar solutions, no agglutination takes place unless a certain amount of salt is added. Serum, as well as other hydrophilic colloids, under proper conditions may prevent the occurrence of agglutination. It was shown that this inhibition was due to a prevention of the union of salvarsan with the cells.

Salvarsan injected intravenously into rabbits in large doses causes intravascular agglutination which may be observed in the drawn blood. The lungs of such animals are filled with petechial hemorrhages resulting from emboli of the agglutinated red cells, and the animals die acutely.

A certain proportion of animals injected at three-day intervals with sub-lethal doses die during the third or fourth injection in a manner resembling the death of animals injected with large doses. In these animals also the anatomical evidences of intravascular agglutination and pulmonary embolism are constantly present.

The total sum of these repeated doses barely reaches the concentration found necessary for immediate intravascular agglutination, and as this total sum must be considerably reduced by the excretion of salvarsan during the six or nine days intervening, some additional factor must be responsible for the sudden occurrence of intravascular agglutination in these animals.

Examination of their blood shows no increase in the agglutinability of the red cells during the course of the injections, but there is a distinct drop, in some cases to one-sixteenth of the original value, in the power of the serum to inhibit, in vitro, the agglutination of red cells by salvarsan.

164 (1746)

Impure and misnamed stock cultures of obligate anaërobes.

By IVAN C. HALL.

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University of California.]*

During the past few years the writer has engaged in building up a collection of cultures of obligate anaërobes whose purity and true identity should be, if possible, beyond question. In addition to numerous cultures isolated from original sources a number have been received from other laboratories. Most of these were already labelled as to species and form the subject of this report.

While a few cultures were received with aërobic contamination these are not included here since aërobic contaminations are