

The summary here given indicates a comparative richness of the nonstriated muscle in Ca. It is suggested that this may bear some relation to the characteristic physiological properties of such tissue, viz., tonic contraction and automatic rhythmic activity, both of which can be facilitated by Ca ions.

45 (301)

Increased susceptibility of protozoa to poison due to treatment with alcohol.

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The protozoa on which the experiments were performed were from two cultures (each comprising four lines) — one of *Paramecium* which had been under daily observations for over nine months, and the other of *Stylonychia* which had been under daily observation for over two months when the experiments were begun. The daily rate of division of each of these cultures was known.

From each of these cultures two secondary cultures were isolated line by line, and these were treated in identically the same way as the original or "control" cultures, except that each received daily for over a month a certain amount of alcohol in the culture medium of hay infusion. One culture received one part of alcohol to 2,500 parts of culture medium and the other received two parts of alcohol to 2,500 parts of culture medium.

Then, from each of the two control cultures and from each of the four alcohol treated cultures, other cultures were isolated and treated in identically the same way as the culture from which each was respectively derived, except that each received one part of copper sulphate to 1,250,000 parts of culture medium.

From these experiments it was found that whereas the average rate of division of the alcohol treated cultures was more rapid than that of the control, the alcohol treated cultures were more susceptible to copper sulphate than the control series, and finally (in the cultures carried to conclusion) died out while the control series treated with copper sulphate survived. It was found that the protozoa which were subjected to the greater strength of alcohol (2/2,500) divided more rapidly than those which were subjected to

the less strength and also were more susceptible to the influence of copper sulphate.

46 (302)

The relative specificity of anaphylaxis.

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The anaphylaxis in guinea-pigs caused by the previous injection of any one of the protein substances, horse serum, egg white, or milk is only relatively specific. The maximum reaction on second injection is always obtained when the substance which has sensitized is used, but in certain combinations intoxication can be produced by the other two substances. This intoxication, by a heterologous protein is "partial" and does not occur if the "complete" intoxication, produced by the homologous protein, has been effected; when "partial" intoxication has been produced by one or both of the heterologous substances, "complete" intoxication may still be effected by the homologous substance. The intensity of an homologous intoxication, after anaphylaxis by a single substance, would seem to vary somewhat with the substance used, the order of toxicity ranging, egg white, serum and last of all milk. After combined anaphylaxis, produced by initial injection of all three substances, the first intoxication, allowing of course a proper incubation period, may be produced by any one of the substances in question. When intoxications are effected with each substance in turn the serial set of symptoms varies according to the order in which the substances are injected on the subsequent days. When injected as the second or third of the series, egg white alone produces maximal symptoms at all times; horse serum is diminished in toxicity if used after either egg or milk and loses markedly if used after injection with both substances. Milk is very slightly toxic if given second in order and absolutely non-toxic if given third; this would compare with the actual toxic power of each substance as noted after homologous sensitization. The mixed anaphylaxis then is only relatively specific, since egg and horse serum will completely preëempt the possibility of intoxication by milk if this substance is given last.