Comments and Communications

pH-Fluorescence of Pyrolyzed Amino Acids

Dry amino acids, heated until brown, produce fluorescent substances. In solution, fluorogens from most amino acids show a rather flat pH-fluorescence curve, with a slight intensity peak at pH 4–6. However, tryptophan and tyrosine, treated in this way and the resulting fluorogens dissolved in water, and the intensities of fluorescence measured at pH 2, 4, 6, 8, and 10 using buffers, exhibit a most surprising behavior. With increasing pH, the intensity of fluorescence of tyrosine fluorogen rises sharply, while the intensity of fluorescence of tryptophan fluorogen decreases just as markedly. We hope someone can provide an explanation for our observation.

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Benzene Hexachloride and Poultry Meat

Benzene hexachloride is capable of tainting the flesh of poultry if it is misused about the poultry house. Therefore, I do not wish to question the data presented by Hixson and Muma (*Science*, October 31, 1947, p. 422), but these investigators indulged in an unwarranted interpretation when they implied strongly that all preparations containing the chemical should be taboo about poultry. This question has been investigated in our laboratory by H. S. Telford, who resigned recently to become professor of entomology in a leading land-grant college. Dr. Telford's results will be published in the *Journal of Economic Entomology*, and I shall only describe his conclusions at this time.

If one sprays a chicken coop with crude benzene hexachloride, he will find it a most unpleasant job. Furthermore, eggs laid in the house or poultry confined in it will be tainted just as the Nebraska investigators found. Fortunately, however, the gamma isomer is the most active insecticide of the crude mixture, and it possesses little odor. By extracting crude benzene hexachloride with fuel oil, one may eliminate much of the objectionable odor from an insecticidal preparation. We have employed such a solution of benzene hexachloride for the destruction of poultry lice and mites by spreading 1.5 cc of the oil containing 1.25–1.50% gamma isomer on each running foot of the roost. This product is applied easily after the manner of nicotine sulfate solutions used formerly. It has important advantages over nicotine preparations, because it is more easily applied, is more effective, is cheaper, and is less dangerous to the operator as well as to the poultry flock.

We have carefully explored possible tainting of flesh of birds using heavily dosed roosts as well as eggs laid by such birds. It is possible to detect a faint odor of benzene hexachloride on the feathers of the living bird, but no individual of several tested was able to distinguish between the flesh of birds using treated and untreated perches. One volunteer who was served a thigh of a pullet from a treated coop and the same thigh of a smaller cockerel from an untreated coop correctly named the sexes of the two birds, but was unable to detect off-flavors of any sort. Therefore, we should welcome a new and more effective weapon against the external parasites of poultry which cost us $85,000,000 a year, according to the 1942 yearbook of the U. S. Department of Agriculture.

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Chloromycetin and Streptothricin

Recently the discovery of a new antibiotic, Chloromycetin, was announced by a group of workers from the Research Laboratories of Parke, Davis & Company together with Dr. Paul R. Burkholder, of Yale University (*Science*, October 31, p. 417).

The actinomycete producing this antibiotic was isolated by Dr. Burkholder from soil obtained from Venezuela. It is interesting to note that this same antibiotic was obtained from an actinomycete isolated from a compost soil on the horticultural farm of the Illinois Agricultural Experiment Station at Urbana. Dr. David Gottlieb, in the course of screening antibiotic-producing actinomycetes in our laboratories, isolated one which seemed to show considerable promise in preliminary tests.

A sufficient quantity of the "beer" for chemical purification was obtained in shake flasks, and this was submitted to Dr. H. E. Carter, of the Department of Chemistry, who succeeded in obtaining the antibiotic in a crystalline form and determined some of its physical and chemical properties. A crude preparation was tested for toxicity to animals. Dr. Gottlieb ran a number of "spectrum" tests against a wide range of bacteria and fungi, using both the crude preparation and the crystalline material. He also made a detailed study of the organism, which he found to be closely related to *Streptomyces lavendulae*, which produces streptothricin.

At this stage of the investigation it was learned that a similar antibiotic had been obtained in the Research Laboratories of Parke, Davis & Company. A comparison of their data with ours revealed that the physical, chemical, and biological properties of the antibiotics were identical and that the organisms concerned were very similar. Further investigation of this antibiotic was discontinued by the Illinois group on learning of the advanced stage of the research at the Parke, Davis laboratories.

Production of an antibiotic from organisms isolated from these two widely separated regions, together with the fact that the organisms concerned are very similar to, if not identical with, the streptothricin-producing *Streptomyces lavendulae*, give rise to some interesting speculations.

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