grade containing some of the o,p′ isomer apparently reacting the same as pure p,p′-DDT. In dried orange and alfalfa meals having zero blanks, added DDT up to 1,000 ppm gave recoveries of the same order, 90–96 per cent. Routine use of the method on dried meal products from experimentally sprayed crops has reproducibly indicated residues of 1–9 ppm.

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Properties of a Virus Inactivator From Yeast

A virus inactivator from yeast has been reported earlier by the undersigned (*Science*, 1942, **95**, 586–587). Simple methods of isolating it and some of its properties have been described in the same publication. From the analysis of its constituent elements, the ratio of C, H, and O, and some qualitative chemical tests, it was believed that the substance is a polysaccharide. Since these results were reported, additional properties have been found and are recorded here.

The virus inactivator was hydrolyzed by heating with 5 per cent HCl or H_2SO_4 until foaming ceased (about 2 hours). The per cent reducing sugar calculated as glucose (Somogyi-Shaffer-Hartmann method) in the neutralized hydrolysate was 85 with HCl and 88 with H_2SO_4. Osazones indistinguishable in appearance from glucosazone were formed in abundance from the hydrolysate, further supporting the view that the substance is composed largely of carbohydrates.

The 12–15 per cent noncarbohydrate residue suggested the possibility that the inactivator may be a glucoside. However, the enzyme, β-glucosidase, prepared according to the procedure of Sumner and Howell (*Laboratory experiments in biological chemistry*. New York: Academic Press, 1944) from fresh almond meal, failed to hydrolyze it or to impair its activity against tobacco mosaic virus.

Longsworth scanning diagrams of a purified solution of inactivator run in a Tiselius electrophoresis cell at pH 7.5 showed but one boundary, indicating that the sample was electrophoretically homogeneous. A mixture of tobacco mosaic virus and a concentration of inactivator sufficient to render 98 per cent of the virus inactive showed two boundaries, one for excess inactivator and a second for inactive virus. A control scanning diagram of tobacco mosaic virus alone could be superimposed on the boundary of the inactive virus, showing that the net charge of the virus particle is not altered by the action of the inactivator. This fact is interpreted to indicate that a general adsorption phenomenon, in the sense that large areas of the virus particle are coated with the inactivator, is not involved; rather, the reaction is presumed to be more selective.

Electron micrographs (RCA Electron Microscope Model B) of purified tobacco mosaic virus which had been inactivated by the yeast inactivator showed no detectable evidence of disintegration or other gross change.

The above results provide further evidence that the inactivator is a polysaccharide and that inactivation is probably brought about by a reaction involving the inactivator and some group in the virus particle which is necessary for its infectivity.

A portion of this work was completed in the laboratories of the Departments of Plant Pathology and Biochemistry, New York State College of Agriculture, Cornell University, Ithaca, New York.

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Book Reviews

***The new genetics in the Soviet Union.* P. S. Hudson and R. H. Richens. Cambridge, Engl.: Imperial Bureau of Plant Breeding and Genetics, 1946. Pp. 88. 6s.**

Here is a long-awaited and greatly needed study of the extraordinary developments connected with the name of the Russian agronomist, T. D. Lysenko, from which arose the now famous Genetics Controversy which rocked Soviet biology and aroused the interest of the whole scientific world. What was needed was a sober, careful description of the facts and a reasoned analysis of the interpretations which gave rise to the controversy. This difficult task has been accomplished so well by the two British authors that the importance of their book transcends the limits of this particular controversy and of genetics. It is a contribution to the methodology of scientific discourse which may be read with interest by scientists and philosophers generally. Coming as it does on the heels of the appearance of Lysenko's chief theoretical treatise (*Heredity and its variability*. Translated by Th. Dobzhansky. New York: King's Crown Press, Columbia Univ., 1946; see *Science*, 1946, **103**, 180), it will hasten and facilitate the judgment of scientists on one of the most remarkable controversies of our time.

The study is based on an examination of the original publications, most of them in Russian, in which, between 1932 and 1944, appeared the experimental evidence, theoretical discussions, and polemics of the Lysenko school and its opponents. In addition, the sources of Lysenko's ideas have been traced by reference to the works of Darwin, Naudin, Timiriazev, Burbank, Michurin, and others. These citations, together with a few from modern non-Russian sources, bring the bibliography up to some 300 titles, each with complete listing of author, title, and source in original language and English. There is good evidence that these works were carefully combed and con-