lism. Obviously the activity of these two enzyme systems was not influenced by 2,4-D in the direction that might have been anticipated from observed changes in distribution of protein in leaves, stems, and roots following treatment of plants with 2,4-D (*2*). Possible interpretation of these findings will be presented elsewhere with further analyses of these plants.

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Chlorogenic Acid a Possible Metabolite in the Terminal Oxidase System of the White Potato[1]

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Since chlorogenic acid occurs in a significant amount in the white potato (*Solanum tuberosum*), it may be involved in other functions aside from the protective action against invasion by *Streptomyces scabies* and other types of injury as reported by Johnson and Schaal (*1*). Boswell and Whiting (*2*) were among the first to demonstrate experimentally that polyphenolase is involved in the respiration of the potato tuber. They were able to concentrate a natural tyrosinase substrate from potato tuber. This substance gave a green color with $FeCl_3$ which is characteristic of ortho-dihydroxy phenols. Upon adding it to respiring potato slices, they found increased rates of oxygen uptake and of carbon dioxide evolution. They were, however, not able to identify this substance. On the basis of the work of Johnson and Schaal, the indications are that it is chlorogenic acid.

Robinson and Nelson (*3*) contend that the active principle in potato juice which increases respiration is tyrosine. According to their view, tyrosine is oxidized to 3,4-dihydroxyphenylalanine (DOPA), which is the respiratory carrier. They estimated that 85% or more of the oxygen uptake may pass through this system.

The presence of chlorogenic acid in potatoes has been demonstrated by use of paper chromatography (*1*). However, no DOPA could be detected in potatoes by this method. Minute quantities of DOPA can be detected on a paper chromatogram by the use of Folin-Denis reagent or Pauly reagent (diazotized sulfanilic acid). The former gives a blue, and the latter a reddish-brown, color with DOPA. These reagents failed to show any DOPA in concentrated extracts prepared from potato flesh.

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Rudskin and Nelson (*4*) found the natural polyphenolase substrate in the sweet potato (*Ipomoea batatas*) to be chlorogenic acid, and they concluded that chlorogenic acid and polyphenolase are involved in the terminal oxidase system of the sweet potato.

In view of the fact that chlorogenic acid is a natural substrate for tyrosinase (polyphenolase), and is present in greater quantities in the potato than DOPA, the author suggests that chlorogenic acid rather than DOPA is involved in the terminal oxidase system of the white potato.

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Repeated Semiannual Spawning of Northern Oysters

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In Long Island Sound, as well as in ecologically similar areas, the spawning season of oysters, *Crassostrea virginica,* is confined to the period extending approximately from the last week of June until the beginning or middle of September. Thus the season is comparatively short and occurs once a year. It is the latter circumstance that suggested studies designed to determine whether the gonad development and spawning of the oysters were of the exogenous type—initiated and regulated by periodical seasonal changes of environment—or of the endogenous type—controlled by a pattern confined within the organism itself.

The question has been answered in part by experiments which showed that ripening of gonads in oysters could be achieved even in midwinter by placing the oysters for several weeks in warm water of about 20° C (*1*). It still remained uncertain, however, that this was not merely a case of precocious development of gonads which would make the oysters unable to undergo normal gametogenesis the following summer. To settle this an experiment was devised to find whether the oysters are able, under certain conditions, to accumulate and discharge spawn in a normal way at least twice a year, at intervals of about six months, and to do so for two or three successive years.

The experiment began in the spring of 1947 when a group of approximately 250 adult, individually numbered oysters was suspended on a float in Milford Harbor, Connecticut. By the middle of June, when the oysters reached ripeness, they were brought