

Table 2. INHIBITION OF PHOTOSYNTHESIS BY CYANIDE BELOW THE COMPENSATION POINT

Concentration of hydrocyanic acid (mol./l.)	Rate of respiration	Rate of apparent assimilation
0	1.5	21.7
1.9×10^{-3}	1.5	- 0.19
2.7×10^{-3}	1.0	- 0.51
0	1.4	20.6
1.9×10^{-3}	1.2	0.0
4.4×10^{-3}	0.6	- 0.52

the results quoted by him), high concentrations of hydrocyanic acid inhibit photosynthesis below the compensation point (Table 2). Hence, we need not suppose, as Warburg suggested, that the products of respiration differ from carbon dioxide in being photosynthesized by reactions which are not sensitive to cyanide.

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Cancerous Response in Plants

THE cancerous response of bacteria-free crown-gall tissue has been established by continued proliferation free from the causal organism or external source of auxin, and by experimental implanting. However, the action of an implant on a healthy host has remained in question, since the implant might effect a cancerous response¹, no response², or a temporary stimulatory response^{1,3}.

Bacteria-free tumour tissue obtained from primary galls of *Helianthus annuus* and cultured on White's media⁴ was implanted in healthy stem segments isolated from *Helianthus* seedlings. The double slant technique of de Ropp⁵ was not found necessary. From two to seven weeks later, the growing tumour implant was removed easily and the host tissue retained for subsequent growth. In all cases where the implant had died, the hosts were likewise retained. Control stem segments were left free of tumour tissue or else grafted with healthy stem segments.

The tumour implant, which continued to grow in the same manner as it had on nutrient agar, could be distinguished from the host by its characteristic nodular texture and fawn colour. It was removed easily from the host callus because of sparse areas of weak fusion. The host stocks which supported such implants exhibited varying degrees of a stimulatory response beyond that of control stems: the production of abnormally swollen roots, of abnormal basal callus and apical callus, and of overall cortical proliferation. This response was similar to that of sunflower tissue exposed to high concentrations of auxin⁶. However, on continued culture after removal of the implant, the host stocks showed an earlier necrosis than controls, and no further proliferation.

In cases where the implant died after about two days, the host exhibited a limited stimulatory

response and a delayed necrosis comparable with that of control stems and stems treated with low concentrations of growth hormones⁷. However, 5 per cent of the stems bearing dead implants produced a tumorous protuberance which arose from the apical callus of the host two weeks after implanting. At first, these protuberances were greenish-white, smooth-surfaced spheres resembling the host callus, but they rapidly grew into large tumours which showed the cream colour and nodular growth habit of bacteria-free crown-gall tumour tissue. Further growth behaviour of this new tumour tissue was identical with that of autonomous crown-gall tumour tissue.

As evidenced by the above, the action of a growing tumour implant on a healthy host effects a temporary stimulatory response which does not continue in the absence of the implant and which hastens necrosis. In view of the parallel stimulatory response of healthy tissue to high concentrations of auxin, as well as direct⁸ and indirect evidence^{7,9-11} of the production of auxin by bacteria-free tumour tissue, this response could be explained on the basis of the auxin supplied by the tumour implant. However, in certain cases where the implant was short-lived, the host afterwards produced a tumour which exhibited all the characteristics of autonomous crown-gall tumour tissue. The experimental production of tumours from healthy tissue by supply of auxin¹⁰ has only brought about a response intermediate between that of normal and crown-gall tumour tissue. However, the change of healthy into tumour tissue observed here through response to a short-lived implant has been positive in nature. Various substances, including auxin, diffusing from the implant during its brief survival, may bring about the production of such new tumour tissue.

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Local Hydrological Conditions in Lake Victoria

SOME preliminary work on the hydrological features of Lake Victoria was carried out in 1928 and 1931¹⁻³. The general conclusion was that due to frequent mixing of the surface and bottom waters, stratification in the Lake is only temporary and deoxygenation of the water never occurs. It has been found, however, that stratification and deoxygenation of the bottom