Table 1

	C_{12}	C_{14}	C_{16}	C_{18}: Δ	C_{18} : O	No. examined
Lipid from :						
Liver Kwashiorkor	Trace	3·8 ± 0·78	34·8 ± 3·14	[53·6] ± 4·69	7·8 ± 1·57	5
Liver Control	Trace	4·9 ± 0·10	39·7 ± 2·26	43·5 ± 1·66	11·9 ± 1·28	11
Depot Kwashiorkor	2·9 ± 1·11	[8·3] ± 2·61	[30·0] ± 5·57	[51·6] ± 4·79	7·3 ± 0·81	4
Depot Control	7·9 ± 1·67	15·8 ± 1·73	44·9 ± 2·87	26·4 ± 2·80	5·1 ± 0·98	7

(Figures in square brackets indicate that when compared with control $P = < 0·05$.)

position is very similar to that in the depots. (7) The proportions of fatty acids in the depot fat in kwashiorkor are very similar to those described in the European adult[2,3].

From these preliminary observations it seems that the fatty acid composition of the liver lipid in kwashiorkor is different from that in other types of fatty liver found in comparable children. Also in kwashiorkor the proportions of the fatty acids in the liver fat are very similar to those in the depot fat, and these in turn are very similar to values given for depot fat of normal European adults.

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Relations of Intensity of Photosynthesis and Appearance of *Piricularia oryzae* Cav. on the Rice Plant

Piricularia oryzae Cav. appears in the rice fields of Hungary in certain years, when a considerably decreased yield often occurs. However, appearance of the fungus did not cause a decrease of yield in every case. It was noted that the crop in some cases was not affected at all with the plants infected by *Piricularia*, whereas in other cases there was total damage in absence of the fungus. As a result of several years of experiment it may be stated that the fungus which, in the opinion of some workers, is the cause of browning disease ('brusone') appears only on certain soil-types. Results obtained so far of the investigation of browning disease suggest that the presence of fungi is rather a consequence of the effects and conditions of unfavourable soil and weather on the plant than connected with the browning disease proper.

Research work on the cause of browning disease led to the view that injury resulted from hydrogen sulphide formed in the water-logged soil. Hydrogen sulphide inhibits respiration and uptake of water and nutrients by the plant[1]. Since the hydrogen sulphide is removed by oxygen, we considered the problem to be practically cleared up. At the same time both the disease and the fungus were absent in years when solar rad ation was abundant and the photosynthetic processes were not impeded[2].

Further experiments were carried out to elucidate the relation between browning disease, the appearance of *Piricularia oryzae* and the intensity of photosynthesis. In our experiments we used the well-known Dunghan Shali variety, which is susceptible to browning disease. As it is well known that the amount of photosynthesis is different for light of different colours, plants in the same developmental stage were exposed to different colour effects. For this purpose four iron stands (130 cm. × 130 cm. × 200 cm.) were made and covered—except for the bottom—with black, white, red, and blue linen. These frames were placed under identical conditions over plants in various phases (tillering, stem elongating, blossoming) of development each for 6 days and the changes occurring in the covered plants were observed. Before the elongation of the stem, no fungal infection could be found in any of the plants.

Following elongation of the stem, the following observations were noted : Plants under a black cover died in every case. Those under a blue cover became thin and developed no further. Under red they elongated, while the leaves of the plants under white were covered with *Piricularia oryzae*. The leaves of the plants under a red cover showed no more fungal spots than those of control plants, where they were insignificant. After removal of the white cover the fungus-spotted plants produced under it continued development and gave crop.

As regards redox potential of the soil and oxygen content of the soil water, the most favourable conditions were under the red cover.

From these observations we conclude that the synthetic processes of the rice plant under the white cover are, to a certain extent, inhibited. In the leaves, as a result of disturbed physiological processes, free amino-acids, mainly glutamin and asparagin, accumulated and rendered possible the appearance of the fungus. On the other hand, under the red cover, the undisturbed vital process of the plants developing in the abundant red light prevents the fungus from becoming established. In these experiments, fungal infection could occur only after the elongation of the stem, that is, in the generative phase when the quantity of oxygen carried to the roots decreased significantly.

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