

quite possible that American pike-perch are living in other waters to which black bass have been introduced. The danger to our indigenous fauna which the presence of such a predator entails need scarcely be mentioned, but the fact that it seems to have changed structurally in the new environment may throw some light on fish evolution if a British race of *L. vitrea* becomes established.

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Effect of Yeast Extract on the Growth of Plants

THE communications on the above subject in the columns of NATURE by Prof. Artturi I. Virtanen^{1,2} and Synnove V. Hausen of the Biochemical Institute, Helsingfors, and by Prof. V. Subrahmanyan and G. S. Siddappa³ of the Indian Institute of Science, Bangalore, are intensely interesting in that they confirm our earlier work on the effect of live and autoclaved yeast and yeast extracts on the growth of plants.

The authors are apparently unaware of our work and so we wish to invite attention to it and to state that it was published in the year 1927⁴ as a Memoir of the Imperial Department of Agriculture in India, under the title "The Effect of Manuring on the Vegetative and Reproductive Capacity of the Seed". In this contribution, which deals with the effect of mineral fertilisers and organic manures on the quality of grain as seed and as food, there is a section devoted to the rôle of organic matter in plant nutrition. Here, several experiments on the effect of yeast on different crop plants in sand cultures, soil in pot cultures, and in small plots were reported.

The crops studied were *Eleusine coracana*, *Pennisetum typhoideum*, *Panicum miliaceum*, *Andropogon Sorghum*, *Lycopersicon esculentum* and *Triticum vulgare*. In every case, minute quantities of yeast, either alive or autoclaved, contributed remarkably to growth, flowering and reproduction. It has also been shown that indications were obtained that yeasted grain possessed better nutritive value than unyeasted grain when fed to albino rats. Evidence was given and arguments were advanced to show the possibility of absorption of the growth-promoting factors of the yeast by the plants through their roots, and of the conveyance of these to animals. We also pointed out in the same publication that in the presence of a good supply of organic matter or on soils rich with silt brought down by rivers flowing through forest areas, this effect might not be so marked or might entirely disappear.

One of us (B. V. N.) in recent publications^{5,6} discussing the work in progress in our laboratories, directed attention to the hitherto unsuspected rôle of micro-organisms in plant nutrition to which Prof. Virtanen refers in his second letter.

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¹ NATURE, 132, 408, Sept. 9, 1933.

² NATURE, 133, 383, March 10, 1934.

³ NATURE, 132, 713, Nov. 4, 1933.

⁴ Mem. Dept. Agri., India, Chemical Series, 9, No. 4; 1927.

⁵ "Some Aspects of Plant Nutrition", Soc. Biol. Chemists, India; 1932.

⁶ Soc. Biol. Chem., India, Symposium, July 1932, p. 12.

Science and Intellectual Liberty

As a German professor, living abroad and without any official connexion with the National-Socialist Government or Party, I would appreciate the publication of some remarks on the attitude of the German Government towards science. On this topic an article was published in NATURE of May 12 under the title "Science and Intellectual Liberty" and a letter by Prof. J. B. S. Haldane appeared in the same issue. Other articles and letters have been published in NATURE, in one of which (June 17, 1933) it was said that "intellectual companionship" with Germany has been made "difficult".

In NATURE of May 12, 1934, I found the phrase "the revocation of academic freedom in Germany will no more be forgotten than the revocation of the Edict of Nantes". Prof. J. B. S. Haldane cites a sentence from one of the prominent National-Socialists acting as rector of the University of Frankfurt; this sentence he designates as "not an isolated example of the attack on objectivity, on, in plain English, truth, which appears to be taking place in modern Germany".

I am sure that every reader of NATURE will realise the very grave situation indicated by these few quotations. For centuries, men of science in Great Britain and in Germany have collaborated, both of them in the first rank of the human fight for truth and progress. Now one of these two groups of scientific men seems to be in danger of losing its credit in the eyes of the other through permitting the suppression of objective truth by the present leaders of its own universities.

The rector of the University of Frankfurt said that the task of the German universities *to-day* is not to cultivate objective science, but to form the will and character of their students. This is considered by Prof. Haldane as one of the German attacks on objectivity and truth. This and the elimination of a considerable part of the staff of German universities seems to indicate that academic freedom in Germany actually is partly suspended and regarded as less important than national education of the future leaders of the people.

Knowing personally many British men of science, and having been a guest of some of your universities and institutions, I realise that it may be exceedingly difficult to understand in Great Britain the present situation of science in my country.

It would be easier to understand the present events in German universities if readers of NATURE for a moment could imagine a situation in the British Empire comparable to the situation of Germany since the War.

A great people like the British or German nation cannot live without full independence or sovereignty, that is, freedom from foreign interference. If you are able to realise—I repeat, only for a moment—a situation of lost independence of your country, you will also realise the necessity of concentrating every mental force, especially of the cultivated classes, on the one most important vital task, namely, to regain the national independence, to obtain deliverance from the humiliating conditions of enforced treaties.

I am sure that no one in England would complain in a national disaster like ours, if every institution of the country had to postpone everything, including scientific research (objective science), in order to strengthen the mental forces of the people, especially of its future leaders.