lightly, and collecting the dry exudate thus dislodged. One lot so collected was dissolved in water so as to float and settle off the particles of grass and part of the solution treated for two hours at 100° C. at pH 6.5 in accordance with the methods of Vickery, *et al.* (*Biochem. J.*, 1935, 29, 2710–2720). A marked increase in ammonia following the treatment indicated the presence of glutamine. A total of 12 flats fertilized at three different times while the grass was making rapid growth of dark green color following earlier applications of NH_4Cl produced relatively little or no white exudate.

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Captain Jenkins' Views

The objections of Captain John G. Jenkins, USNR, to the universal application of statistical methods to research in psychology probably are well taken. Indeed, these objections may well be extended to many fields of scientific endeavor and to many methods of research. Any circumscribed test assumes that certain ideal conditions shall be fulfilled, but in reality the ideal is seldom present or even achievable. Therefore, any single test reveals only one aspect of the situation. Usually the situation is far more complex than we imagine.

The chief injury of the standardized test arises not from its limited nature, but from the mental attitude of investigators that all research must be fitted to some particular test. However, all tests are only tools and like machine tools they are useful in some, but not in all, situations. Years ago Fabre pointed out this discrepancy between the ideal tool and the actual situation. Although the inimitable observer failed to appreciate the marvelous adaptability of Darwin's theory, his words from "A dig at the evolutionists," translated by Alexander Theixeira De Mattos, are applicable to the present situation:

"But to this calculus, all-powerful so long as it does not leave the domain of the ideal, let us submit a very modest reality: the fall of a grain of sand, the pendular movement of a hanging body. The machine no longer works, or does so only by suppressing almost everything that is real. It must have an ideal material point, an ideal rigid thread, an ideal point of suspension; and then the pendular movement is translated by a formula. But the problem defies all the artifices of analysis if the oscillating body is a real body, endowed with volume and friction, if the suspensory thread is a real thread, endowed with weight and flexibility; if the point of support is a real point, endowed with resistance and capable of deflection. So with other problems, however simple. The exact reality escapes the formula."

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. . . I think *Science* is to be complimented on Captain John G. Jenkins' article (*Science*, 1946, **103**, 33–38). The general indictment against the technical man, and it is not without some basis, is that his scientific approaches and thought patterns are devoted to obscure fields without any realization of practical value. While the scientific purity of thought is highly commendable it would appear that some of the effort in that direction would have greater significance if interpreted in the light of some of Captain Jenkins' remarks.

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Pancreatic Enzymes and Liver Fat

The late Dr. A. H. Palmer was well known for his work on the proteins of milk whey. He joined this department in September 1944 and undertook at my suggestion the separation and identification of enzymes present in the antifatty liver fraction of pancreas, prepared by the method of Entenman and Chaikoff (*J. biol. Chem.*, 1941, 138, 477). Palmer's work was hampered by ill health and terminated by his death on 10 April 1945. During his short period of application to his new problem, however, he obtained in crystalline form and in fair yield trypsinogen and chymotrypsin from the pancreas extract. He identified these two enzymes to his own complete satisfaction and believed that at least one more proteolytic ferment was present in the extract.

Chaikoff, Entenman, and Montgomery (*J. biol. Chem.*, 1945, **160**, 489) state that their findings are consistent with the concept that the antifatty liver factor (of pancreas) is enzymatic in nature. The results of Palmer's work provided evidence in support of this view, and it is most regrettable that his notes are not sufficiently complete to enable us to make a detailed report of his findings. Some of his preparations are still available, however, and it may be possible to complete certain aspects of his work.

The probability that the enzymes contained in the pancreas which is fed to depancreatized dogs contribute very significantly to the total lipotropic effect by releasing lipotropic factors from the various constituents of the diet has been emphasized in previous reports from Chaikoff's and this laboratory. The possibility that these enzymes played a role in the prevention of fatty livers in insulin-treated depancreatized dogs was, of course, mentioned and seriously considered by Prof. J. J. R. Macleod and his collaborators in the original work in this field.

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Absorption of Phenol Vapors by Plants

An interesting phenomenon concerned with the absorption of phenol-like vapors by plants was observed during the Summer of 1945 in and about Ambler, Pennsylvania. A factory located on the outskirts of Ambler started the commercial production of 2,4-dichlorophenoxy acetic acid (2,4-D). This product has been used as a plant growth regulator and has been developed by the Bureau of Plant Industry, Soils and Agricultural Engineering, as a weed killer.

In the production or purification of the product at