the acidity with each change of one-tenth pH toward the acid side is an approximate constant value.

Thus, to compare the concentrations corresponding to the pH values used above, subtract 5.2 from 5.8 which gives 6 as the number of tenth pH intervals. Then 1.26 is raised to the sixth power, viz.,

\[(1.26)^6 = 4.0,\] or pH 5.2 is approximately 4 times as concentrated in hydrogen-ions as pH 5.8. To compare 5.2 with 6.8, it would be necessary to multiply the above value by 10, and similarly for other comparisons. Thus 5.2 from 6.8 gives 1.6 or 16 tenth pH intervals to reckon = 10 \times (1.26)^{1.6} = 40.0.

Since the figure 1.26 is the approximate constant for increase in acidity for 0.1 pH and its log is 0.1004, these two figures can be easily remembered. To raise 1.26 to any power, it is necessary only to multiply the log 0.1004 by the power and find the antilog of this result. The only recourse to log tables, therefore, is to obtain the one value which is a direct comparison, without further calculation, of the hydrogen-ion concentrations of the two pH figures under consideration. It will assist also in making close approximations of comparisons without calculation to remember that each increment of 0.3 pH toward the acid side approximately doubles the hydrogen-ion concentration.—R. E. Stephenson, Soils Department, Oregon Agricultural College, Corvallis, Ore.

**PRINCIPLES TO BE CONSIDERED IN PLANNING EXPERIMENTS WITH FERTILIZERS FOR ASPARAGUS**

It is only in comparatively recent years that fertilizer experiments have been planned on the principle of feeding the plant rather than fertilizing the soil. This change in point of attack has resulted in information of much greater value to research men interested in the nutrition of plant growth. Much money and effort have been spent on studying the effect of chemicals on plant growth and in many cases reports on such experiments have been ended with the statement that, “More work is necessary before recommendations can be made.” Unfortunately the “more work” is not always carried out, perhaps because the problem is too involved to give clear cut data. Experiments of this nature need not give positive results to be valuable to the research man and to be successful so far as money and effort expended on them is concerned. Consistent negative results are often of more value, but even negative results are not forthcoming in many carefully planned nutritional experiments.

Fertilizer experiments on annual plants (grain or vegetable crops) have had as their objective greater yields per acre, and have given very little attention to quality studies. If it was shown that a certain