predominantly, of different species of plants from those of the neighborhood. Some of these plants apparently exist nowhere else in the region, while not a few of those of the vicinity, in turn, do not grow on the site of the human habitation. Furthermore, the site-flora of one region in Alaska is not the same as that of another region; and even on the same site there will grow different plants according to the nature and amount of the underlying deposits. And in forested regions these sites, though they may border on woods, remain indefinitely free from brush or trees.

A few examples may be mentioned. On Kodiak Island the main plant of these old sites is everywhere the stinging nettle, interspersed with the wild parsnip; and the elderberry bush, rare elsewhere, was found to be common on the sites over burials. The east slope of the point of our pre-Russian site at Uyak Bay, over slate rock, was full every year with fine forget-me-nots, the only ones seen anywhere in the neighborhood. On Amoknak Island (Unalaska), our site was covered, aside of much luxuriant wild parsnip, with a lot of fine monkshood, fireweed and other flowering plants. While at Agatu, westernmost Aleutians, the sites were covered with high stout grass on the slopes and by a thicket of the wild parsnip, with some monkshood and other flowering plants, over the top.

These are mere general notes. What they endeavor to convey is that the old human sites in Alaska—as doubtless also elsewhere where similar accumulations exist—show botanical phenomena which seem well to deserve an expert study. They show that under different chemical and physical conditions in the ground the same region may produce very different and richer flora than is characteristic of the same under ordinary conditions.

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NUTRITION VS. GROWTH

IT seems possible that clarity might have been forwarded if Rose[1] in his recent review of his splendid studies on the rôle of the amino acids in nutrition in this journal had interpreted his results solely in terms of nutrition and left growth out of it entirely.

These studies and others like them are not studies of the part nutrition plays in growth; they are investigations of whether or not certain amino acids need be in the diet.

Rose might have written: "Some amino acids are dispensable in the diet of rats. This is shown by the fact that the animals will gain in weight to apparently normal extent when these are omitted from the diet. But these amino acids are essentially universal components of living protoplasm. It is therefore inconceivable that they are dispensable components of living substance. It follows that dispensability in the diet is not evidence of dispensability in protoplasm. What these experiments show, then, is that the rat can make these dietary dispensable amino acids from other dietary constituents."

It would seem as if this is the limit to which interpretation of these and similar data should go when the measure of influence is mass or weight change. Mention of growth seems not only superfluous, but even misleading.

In the first place weight loss on withdrawal of a given amino acid is no evidence that the compound is directly significant to growth. The loss may be due to an absolute increase of catabolism by removal of a brake thereon, quite as much as to an absolute decrease in anabolism by removal of a stimulus thereto. It may be due to loss of stored fat or to water drainage. And it is conceivable that growth—or the continued increase in living and essential structural substance—could go on, even though weight is being lost through disturbance in water balance or undue fat combustion.

The same might also hold true in principle where weight remains stationary on withdrawal of a given amino acid from the food of an animal capable of weight increase.

Further—growth is not single, it is multiple, the combined expression of integrated developmental and incremental factors, processes and functions.

Mass or weight increase is obviously no index to which of these several expressions is subject to a given amino acid.

It is conceivable that an amino acid might factor one phase of growth and not another, and hence its influence—determined as it might be by the physiological age and state of the organism at the time of observation—might be masked by coterminous weight or mass changes in the opposite direction due to expression of other activities—be they growth or metabolic.

Also, mass or weight increase measurements by themselves allow no distinguishment even between increment due to growth and that due to storage of fat or any other substance.

Finally, it is conceivable that a given amino acid may have no direct influence on any growth process at all; but only on some phase of metabolism, interference with which might produce a growth reaction secondarily. Thus a compound might act to sustain maintenance or to act as a brake on catabolism. Either effect might produce retardation in weight increase. Yet this alone would give no basis from which one could tell whether the amino acid in question was significant to maintenance, catabolism or growth.

These several considerations, taken together with

[1] W. C. Rose, SCIENCE, 86: 298, 1937.

the postulate that since all the amino acids which are integral components of living tissue can be justly considered as essential thereto, and hence essential to its production or growth, make it seem advisable to discontinue the practice of attributing general growth dispensability or indispensability to amino acids on the sole basis of weight changes in feeding experiments with rats. Otherwise interpretation is going beyond the limits set by restriction inherent in the method of investigation.

In fact, there is rarely any need to use the word growth in these studies at all. Weight increase or decrease is all that is sufficient and necessary to use in this connection, for this is all that is usually observed. Any other implication is not only inexact—it is unscientific.

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WOLFFIA IN FLOWER

IN SCIENCE for October 1, Henry C. Gilbert remarks, "This is the first report of *Wolffia* in flower in the State of Minnesota, and may be the first report of this matter for the United States."

I quote the following from the Lake Maxinkuckee Report, page 258: "It (*Wolffia columbiana*) was noticed in blossom several times. On October 9, 1900, the plants were in blossom quite freely. We got a tubful in which many were in bloom. They were found in flower also on October 24, of the same year. At Put-in-Bay, Lake Erie, some were noted in blossom about the 19th of July (1908)."

What it would be more desirable to see would be blossoms of the minute duckweed *Wolffiella floridana* (J. D. Thompson), as no flowers nor fruit of the entire genus *Wolffiella* are known. The appropriateness of the name Wolffiella, implying a minuteness even greater than that of *Wolffia,* famous as the smallest flowering plant, raises the question of relative size of *Wolffia columbiana* or *punctata* and *Wolffiella floridana.* On account of its shape *Wolffiella floridana* presents more surface, but perhaps less material than *Wolffia,* so that it rivals *Wolffia* in being the most minute phanerogam, not to say "flowering plant."

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MORE FRESH-WATER MEDUSAE

ANOTHER occurrence of the fresh-water medusae, probably *Craspedacusta ryderi,* is in Sandy Lake, at Stoneboro, Pennsylvania. This medusa is of fair size, measuring one and one-half cm in diameter, and was found a year ago in very large numbers in this lake by Mr. John Hines, teacher of biology in Stoneboro High School. On its reappearance a few days ago, it was called to our attention, and is now being studied. It is not in as great abundance as last year, but numerous specimens have been collected.

We hope to add to the knowledge of this form, as we have seen several interesting features apparently not previously described.

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SPECIAL CORRESPONDENCE

BIOLOGICAL ABSTRACTS

THE new acting editor of *Biological Abstracts,* John E. Flynn, and a special Committee on Arrangements, appointed by the Board of Trustees of *Biological Abstracts,* announce the launching of a new plan which insures *prompt publication of abstracts and indexes,* economy of operation and reorganization of income on a sound basis.

EDITORIAL PLANS

Careful study has been given to methods of speeding up the publication of abstracts, and the following procedures, now to be adopted by the *Abstracts* office, will be of interest to biologists and others:

Abstracting plan. With the aid of biologists and editors of scientific journals, the author-to-editor abstract plan is to be extended. This insures the prompt receipt of abstracts. Payments will be made to collaborators handling entire journals, after the plan of *Chemical Abstracts.* This will make possible an understanding between the abstractors and the editorial office as to how much time can be allowed for abstracting and still have the abstracts appear on schedule.

Prompt abstracts. Abstracts from cooperating journals will appear approximately eight weeks after the original articles. Abstracts from non-cooperating journals (prepared by paid collaborators) are scheduled to appear about twelve weeks after the original articles.

Prompt indexes. The acting editor has committed his organization to an April–May appearance of the index for the 1938 and subsequent volumes prepared under his direction.

Journals covered. There will appear from time to time a stated list of journals which are being abstracted so that biologists may know just what is being covered. The names of journals cooperating under