typified by the later discovered *P. proliferum* de Bary[3] and *P. debaryanum* Hess,[4] because of their wider distribution and greater economic importance. Both *P. proliferum* and *P. debaryanum* differ from *P. monospermum* to such an extent as to justify the creation of two genera. Fischer[5] created at a later date the subgenera Nematosporangium and Sphaerosporangium and placed *P. monospermum* in the former subgenus and *P. debaryanum* and *P. proliferum* in the latter. Schröter[6] in 1897 elevated Nematosporangium to generic rank and placed all the organisms then in the subgenus Sphaerosporangium in Pythium. This scheme of classification has been approved by Lindau[7] and recommended by Fitzpatrick[8] and, in the opinion of the writer, it is practical and divorced from complications and ambiguity.

Pythium debaryanum came to be known as the type species of the genus in the pathological literature, because of its constant association with seedling root rot. Very few plant pathologists and even mycologists have ever seen *P. monospermum* but nearly all have had some practical experience with *P. debaryanum*. It is through such an experience that the morphology of practically all pythiaceous organisms has been compared with that of *P. debaryanum*. One will readily see the fallacy and injustice of placing members of the genus Nematosporangium under Pythium especially in the case of *Rheosporangium aphanidermatum* Edson.[9] *R. aphanidermatum* does not vary any more from *Pythium monospermum* than does *P. proliferum* from *P. debaryanum*. It is, therefore, as true a member of the genus Pythium as the type species *P. monospermum*. Yet, in spite of all this evidence, Edson created the new genus Rheosporangium to find a place for his organism! The writer believes that the fault is not with the investigator, but with the taxonomic system because it has failed to differentiate properly between completely distinct organisms.

Sparrow recommends the reestablishment of the genus Rheosporangium to include all those members of Pythium with lobulate prosporangia. It is very unfortunate that Sparrow did not read very carefully the description of *P. monospermum*, or else he would have noticed that the hyphae of this organism possess bud-like outgrowths which came to be known by later investigators as prosporangia. The German text in connection with the lobulate prosporangia of *P. monospermum* reads as follows: ". . . Fäden oft mit vielen Kurzen annähernd rechtwinkelig ansetzenden Seitenästen. . . ."

My answer to Sparrow's criticism of my paper[10] for the non-segregation of members of Nematosporangium with filamentous prosporangia from those with lobulate ones is that I have never seen any species of Nematosporangium (*Pythium monospermum* type of organisms) lacking the lobulate prosporangia (bud-like outgrowths of Butler or plasmatoögoses of the writer.[11] These bodies vary in size and number in different species, but they are present, nevertheless, in all species. With species which reproduce sexually very readily and abundantly the lobulate prosporangia are not very numerous, and *vice versa*.

If the recommendations as proposed by Sparrow are accepted there is a danger of leaving the genus Pythium without any members. If all of the species with lobulate prosporangia including *P. monospermum* are placed in Rheosporangium and those with spherical prosporangia including *P. debaryanum* in Sphaerosporangium, then there will not be left any more members for Pythium.

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[3] *Jahr. Wiss. Bot.*, II, p. 182, 1860.
[4] *Dissert.* Halle, 1874.
[5] Rabenhorst's "Kryptogamen Flora von Deutschland, Oesterreich und der Schweiz." IV. *Abt. Leipzig.* 1892.
[6] *Engler-Pranlt.* "Natürliche pflanzenfamilien. Pythiaceae, 104–105, 1897.
[7] "Die mikroskopischen pilze," Berlin, 1922.
[8] *Mycologia*, 15: 166–173, 1923.
[9] *Jour. Agr. Res.*, IV: 279–291, 1915.
[10] SCIENCE, 71: 323–324, 1930.
[11] *Mycologia*, 23: No. 4, 1931.

"TASTE DEFICIENCY" FOR CREATINE

THE observation that to certain individuals *p*-ethoxy phenyl thiourea tastes bitter, while to others it is tasteless has led to Professor L. H. Snyder's study of the inheritance of this taste deficiency as reported in SCIENCE for August 7, 1931.

A few years ago the writer, with Mr. P. A. Lasselle,[1] noted a somewhat similar situation with regard to the familiar muscle constituent creatine. We had a sample of what eventually was proved to be this substance submitted to us for identification. The melting point recorded in the literature was somewhat in error, but the properties of the substance suggested that it might be creatine.

Creatine, however, was described in the literature as bitter, whereas the substance in question seemed to both of us to be as tasteless as chalk. Further study convinced us, nevertheless, that it was actually creatine. It was not, I believe, until we had submitted it to the fifth person that we found one who reported a bitter taste.

The fact that even this familiar food constituent has these distinctive reactions on different individuals is perhaps a significant one. Since a pound of lean meat may contain nearly two grams of creatine it

[1] *Jour. Am. Chem. Soc.*, 48, 536, 1926.

would be surprising if this taste difference did not manifest itself in giving meats distinctive flavors for different individuals. Especially should this be so for soups made from lean meat which must contain a considerable quantity of extracted creatine. Possibly the taste which creatine has for certain individuals is destroyed by the presence of other food constituents.

The problem is associated with the more general one of individual metabolic idiosyncrasies, which calls for extensive study. It is a fact which is not always recognized in medical practice that occasional individuals react in quite a distinctive way toward particular drugs, among which are such familiar ones as morphine and novocaine. A man of my acquaintance who has a normal sense of smell in other respects is unable to detect the odor of skunk. Even a sample of n-butyl mercaptan, which is the perfume carried by these animals, had no unpleasant odor for him.

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SCIENTIFIC BOOKS

The History and Work of Harvard Observatory, 1839–1927. By SOLON I. BAILEY. New York and London, McGraw-Hill Book Company, Inc., 1931. (Harvard Observatory Monographs, no. 4.)

SELDOM, if ever, has a subject concerned with the history of science received as interesting a treatment as in the book under review. The volume "The History and Work of the Harvard Observatory, 1839–1927" is the fourth of the well-known monographic series issued by this observatory. It is from the pen of the late Dr. Solon I. Bailey, who was Phillips professor of astronomy, emeritus, at Harvard University, and one of the oldest and most distinguished members of the Harvard Observatory staff. Dr. Bailey's long connection with the practical research of the observatory made him intimately acquainted with every phase of the important work carried on there, and he was therefore well prepared to write a unique historical account as set forth in this book. It is indeed fortunate when one who reaches the honored title emeritus can give his time to introspection and reflection upon the accomplishments of his period and of his institution. Harvard College Observatory ranks as the oldest research observatory in the United States, and it is therefore peculiarly fitting that a historical review should be placed before scholars. This observatory may be said to have found its roots deep in our early Colonial period—for astronomy seems to have been taught and "practiced" almost from the date of the founding of this Puritan college in 1636.

The summary of the vast contributions of the observatory is written in Dr. Bailey's simple and characteristic narrative form, which is not lacking in vividness and humor and is so presented as to be of service to both the layman and the professional scholar. The book is composed of three large divisions, in logical sequence, with a total of twenty-one chapters. The first part gives briefly the historical outline of the ancestry of the observatory, showing how the pioneer efforts in organizing research in astronomy were developed, and an account of the first astronomical expedition in this country by Harvard College to observe the transit of Venus in 1761. There is also given a short life sketch of the first Colonial astronomer, John Winthrop (1714–1779). Unfortunately this chapter contains several minor errors in historical facts and dates. Thomas and William Brattle were brothers and not father and son. Both were prominent scholars, Thomas Brattle furnishing observations on the Comet of 1681 which were highly important to Halley and Newton in developing the first calculations of the orbit of a comet. William Brattle was the first tutor in philosophy at Harvard College. Dr. Bailey calls attention to the great influence exerted upon science by John Quincy Adams, the sixth President of the United States, who was the godfather of three observatories in the United States, which were called by his critics the "lighthouses of the sky." The chapter continues with a description of the temporary quarters of the observatory, known as the Dana House, which housed the few instruments in possession of the first director, William Cranch Bond. The present observatory owes its origin to the public interest shown at the appearance of the Comet of 1843. A complete account is given of the gradual enlargement of the instrument equipment and the notable number of expeditions to observe solar eclipses and to determine the location of new sites for auxiliary observatories. The final chapter of this historical part treats of the various publications of the observatory which afford to students of practical and theoretical astronomy unlimited resources for further researches.

Part two, which is devoted to scientific problems, is practically a complete study of the contents of the publications known as the Annals, Bulletins, Monographs, Reports and Circulars. It also reveals the pioneer character of many of the problems undertaken by this observatory, of which, of course, the most interesting is the account of the adoption of photography in the study of celestial phenomena. The difficulty with the so-called "collodian wet-plates" and