THE three hundred seventy-sixth meeting of the American Mathematical Society will be held at Columbia University on Friday afternoon and Saturday, February 21 and 22. Friday afternoon will be devoted to a symposium on applied mathematics. Brief addresses will be given by Dr. W. A. Shewhart, of the Bell Telephone Laboratories, on methods of mathematical statistics in industrial production control, and by Professor J. J. Stoker, of New York University, on the mathematical problems connected with the bending and buckling of elastic plates. Each address will be followed by a discussion led by mathematicians active in the fields involved. On Saturday there will be sectional sessions both morning and afternoon. At a general session on Saturday afternoon, Professor H. F. Bohnenblust, of Princeton University, will give an address entitled "Partially Ordered Linear Spaces."

APPLICATIONS to the Committee for Research in Problems of Sex, National Research Council, for financial aid during the fiscal year beginning July 1, in support of work on fundamental problems of sex and reproduction, should be received before April 1. They may be addressed to the chairman, Dr. Robert M. Yerkes, Yale School of Medicine, New Haven, Conn. Although hormonal investigations continue to command the interest and support of the committee, preference, in accordance with current policy, will ordinarily be given to proposals for the investigation of neurological, psycho-biological and behavioral problems.

IN connection with its defense work the War Department is in need of technical editors to perform various writing duties, and prepare for publication technical manuscripts and reports. The work will be confined largely to the fields of engineering, chemistry and physics. The salaries are $2,600 a year for assistant technical editor, and $3,200 a year for associate technical editor. To fill these positions the U. S. Civil Service Commission has announced an open competitive examination, and will accept applications not later than February 20 and February 24. Also in connection with the National Defense program, an examination will be held to fill the position of chemist-petrographer. The salary is $3,200 a year. Application should be made not later than March 3. Difficulty is being experienced in filling positions in such branches of technology as explosives, fuels, plastics, rubber, minerals and textiles. These will be filled in several grades with salaries ranging from $2,000 to $5,000 a year. For the grade of junior technologist in any specialized branch, applicants will be required to take a written general test. For the other grades, competitors will be rated upon their education and experience. Applications for the position of junior technologist must be filed at the Commission's Washington office not later than February 20. For the other technologist positions, applications will be rated as received until December 31, 1941. Further information and application forms may be obtained from the Secretary of the Board of U. S. Civil Service Examiners.

DISCUSSION

A FURTHER COMMENT ON STABILITY IN NOMENCLATURE

WE owe to A. C. Smith[1] a very informative discussion of Wheeler's proposal that new series of beginning dates in botanical nomenclature be started from the publication of certain "uniform monographs executed with strict regard for the rules of botanical nomenclature and the type concept." It is my belief that Smith's observations fully dispose of Wheeler's proposal, showing its glaring defects and inconsistencies. Some additional notes may be desirable, nevertheless, as neither of the parties involved in the discussion seems to have taken into open account what is probably the fundamental fallacy of Wheeler's proposal.

Any form of organized knowledge, taxonomy not excluded, is by its nature progressive, or should at least strive to be progressive. Thus the *names* which a form of organized knowledge uses at any given stage of its evolution and development merely cloak certain *concepts* that are then current. It is manifest that changes in *concepts* can not take place without changes in *names*. Somebody may hope that his *names* for the classification of the family in which he specializes are definite and certain—which may or may not be the case, as many are the controversies that arise over points in which involved issues are left to the common sense of the debaters—but he has not the slightest means of being certain that the generic and the specific names which he uses in the classification of this or that family will last when new concepts of classification must be adopted in view of new approaches to the problems of systematic. It casts a peculiar light upon the assumption of a purely nomenclatural branch of taxonomy that this branch should strive to the utmost to preserve *names* without giving heed to the possibilities of changes of *concepts*.

It may be objected, of course, that the hoped for monographs will merely remain as a basis for nomenclature, it being free to everybody to alter the rank of the units proposed therein to suit his convenience.

[1] A. C. Smith, SCIENCE, 91: 572, 1940.

But, if this objection be received, it is then plain that there is not the slightest reason for preferring any monograph executed with "strict regard for the rules of botanical nomenclature and the type concept" to the usual supposedly imperfect texts by which priority is determined.

Behind Wheeler's proposal clearly stands the tacit assumption that modern perfection can take the place of age-old weakness, modern *names* thus having to be riveted upon the planks of history *per omnia saecula*. Behind this proposal also stands the belief that we can do something *to-day* that will last forever with slight probability of change. It is manifest that these assumptions disregard the historic and psychological angle under which science must be considered in any broad view of its needs and possibilities. These assumptions will elicit a smile on the lips of generations unborn which will wonder how it could ever come to the mind of somebody in 1939 that all that had been done before that year was neither perfect nor absolute.

Against hopes and attempts to seek certainty in science, be this certainty and its attending stability in the field *of concepts or of names,* must be stated aloud the truth that science is knowledge in organized evolution and part of man's live experience. As such, science must be accepted together with its attending evils and imperfection, everything about it being borne with patience and forbearance and—even more—with a mind open to the light that from time to time shines upon the path of the persistent inquirer.

Wheeler's preoccupation with stability is interesting as the symptom of a whole state of mind, which is much apparent to-day in the field of general botany. An almost morbid and ecstatic faith is being placed to-day in any formula, proposal or school of thought that promises "certainty" and assures of "stability." The success of the "typological approach" to morphology and to phylogeny in our midst is conditioned by this faith. It leads, as one would expect, to all the errors which always accompany a mystic and semi-religious approach to problems of knowledge.

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THE RATE OF SEASONAL DEPOSITION OF PEARL ARAGONITE

ALTHOUGH the formation of pearls represents an exceedingly interesting example of periodic biological function, analogous to the annual rings in trees, it has received little scientific attention. Except for a few restricted cases, not even the rate of growth of molluscs has been extensively investigated.[1]

As a result of the writer's study, made in connection with the work of the Bureau of Natural Pearl Information, it was found that a number of natural pearls, when thin-sectioned, showed groups of laminae which are believed to represent seasonal growth. The data presented herein have been interpreted on that supposition. Between the major growth rings it is possible also to discern still other rings, of faint outline, which probably represent evidence of minor physiological changes that had taken place within the seasonal growth period.[2]

Two natural pearls in particular yielded valuable growth information. One, a fresh-water pearl of 6.12-grain weight, on thin-sectioning revealed measurements of the following order:

1st	year's growth	2.30 millimeters
2d	" "	0.38 "
3d	" "	0.46 "
4th	" "	0.27 "
5th	" "	0.35 "
6th	" "	0.32 "
Partial 7th	" "	0.04 "

An annual average growth rate, after the first year and exclusive of the partial seventh, is 0.357 millimeter.

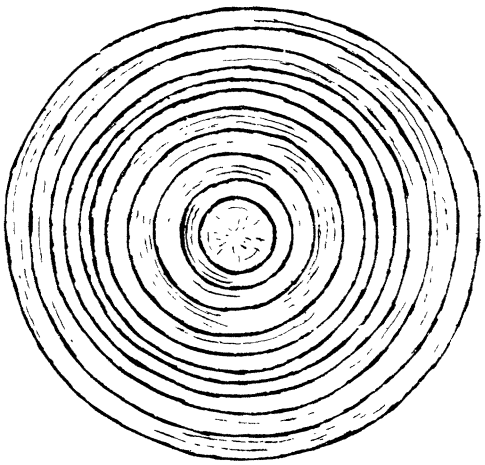

FIG. 1. Cross-section of a natural pearl, *M. margaritifera* (?), showing seasonal growth rings (x 14).

The second pearl, of 3-grain weight, which had been taken from *Margaritifera margaritifera* (?), disclosed eleven seasonal growth rings on thin-sectioning (Fig. 1). The growth measurements on this specimen were found to be as follows:

1st	year's growth	1.60 millimeters
2d	" "	0.18 "
3d	" "	0.18 "
4th	" "	0.18 "
5th	" "	0.13 "
6th	" "	0.14 "

[1] F. W. Weymouth, *Bull. Calif. Fish and Game Comm.*, 7: 120, 1923.

[2] A. E. Alexander, *Sci. Am.*, 160: 4, 228–229, 1939.