University. Dr. Kennedy is professor of neurology in the Cornell University Medical College.

A MEETING of the American Physical Society, including invited and contributed papers, will be held at Stanford University, Calif., on July 10.

DR. T. R. HOLLCROFT, associate secretary of the American Mathematical Society, reports that the three hundred ninety-fifth meeting of the society was held at Hunter College, New York City, on April 24. The attendance was about two hundred, including one hundred and forty-three members. The following addresses were given by invitation of the program committee—"Spectral Theory," by Professor Nelson Dunford, of Yale University, and "Absolutely Convergent Trigonometric Sums," by Professor R. H. Cameron, of the Massachusetts Institute of Technology. There were two sessions at which thirteen contributed papers were presented. Ten additional papers were read by title. The excellent arrangements made by the department of mathematics of Hunter College were very much appreciated by all attending the meeting.

PROFESSOR H. J. VAN CLEAVE writes: "The general seminar in the department of zoology and physiology of the University of Illinois has devoted two meetings per month through the current year to the history of zoology in some of the leading American universities. In most instances a full hour has been given to each of the more important institutions with a former student or staff member from that institution in charge of the program. In the aggregate these programs have given a fairly comprehensive sketch of biology in America."

A GIFT of $43,500 from the Rockefeller Foundation has been made to Columbia University in support of three years' research on problems of intermediate metabolism in the department of biochemistry.

THE Paleontological Research Institution of Ithaca, N. Y., has recently been presented by Mrs. C. S. Bentley, of Plattsburg, N. Y., with a collection of recent sea shells mainly obtained from the West Coast though with genotype representatives from other oceanic regions.

DR. C. C. LITTLE, director of the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Maine, has announced a grant of $35,000 to the laboratory from the trustees of the Rockefeller Foundation. This grant is for a five-year period beginning on July 1, and is a contribution toward the expenses of establishing and maintaining a mammalian stock center. According to Dr. Little the money will be used primarily in connection with the work at the Hamilton Station in Salsbury Cove. It is hoped that in the five-year period a good beginning may be made in the establishment and maintenance of stocks of rabbits, rats and guinea pigs for use in scientific experimentation. Work has already been under way for some time at the Hamilton Station. It is hoped that the scientific results obtained will be of value not only in cancer research but to experimental medicine as a whole.

DISCUSSION

"MOCK DOMINANCE"

IN a recent issue of SCIENCE,[1] Richey points out that a hybrid from two plants, one with twice as many internodes of half the length of the other, would have a greater height than either parent, providing the hybrid internode number and length were each the arithmetical mean of those of the parents. For such gene interaction resulting in heterosis in height he suggests the term "mock dominance" which he considers not to be dominance in its genetic sense. I believe further comment is necessary to clarify the issue.

(1) If height can be taken as a statistical creation compounded of two fundamental elements (internode length and number), then Richey's conclusions and terminology are justifiable. One might as logically, however, consider height and internode length as fundamental and their quotient, internode frequency, a compound. It should be noted in this connection that, in an actual cross, the factors would not necessarily interact in the manner postulated by Richey.

(2) If a particular gene substitution always makes the same contribution to the total effect, gene interaction is said to be absent. If the contribution is not always the same but depends merely on the total effect of the residual genes, the scale may be transformed into one on which each factor has the same effect throughout the range.[2] Interaction that can be thus eliminated by the use of a transformed scale may conveniently be termed "statistical interaction."

In other cases the effect of a gene substitution depends not merely on the total effect of the residual genes but also on the particular genes producing this total effect. That this is the case in the example proposed by Richey will be apparent from a consideration of the following list of genotypes and the relative

[1] F. D. Richey, SCIENCE, 96: 2490, 1942.

[2] See, for example, S. Wright, *Jour. Amer. Statist. Assoc.*, p. 163, 1926.

plant heights resulting from the gene action which he postulates:

nndd	1
nnDd, Nndd	1.5
NNdd, nnDD	2
NnDd	2.25

The substitution of N for n in a genotype which would otherwise produce a plant 1.5 units in height gives a genotype producing a plant either 2 or 2.25 units in height, depending on the residual genes present. Interaction of this type can not be made to disappear by transformation of scale and is non-"statistical" in the sense defined above. In this particular example it can be thought of either as complementary (inter allelic) or dominance (intra allelic) interaction. Only non-statistical interaction can ever lead to heterosis in the offspring of two equal parents with respect to the measure considered.

It is doubtful whether non-statistical interaction should be described as "mock" regardless of the measure involved even though the existence of gene interaction based on certain measures might be relatively insignificant from the standpoint of analysis of gene action or of practical application.

(3) If the action of any particular gene substitution affecting internode number or length were proportional to the total effect of all the genes present, the height of the hybrid in Richey's example would equal that of the two parents. In such case the logarithms of height, internode number and internode length would all constitute scales on the basis of which interaction is absent. Probably no other type of simply expressed gene action can result in the absence of non-statistical interaction for measurements related to each other as products, quotients and powers, as are lengths, areas, volumes and many shape indices. This constitutes a statistical reason for expecting more frequently an approximation toward independent action of gene differences when the action is expressed as logarithms of measures of these types than when expressed as the measure themselves or any other simple function of them.

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A NEW GROWTH FACTOR FOR STREPTOCOCCUS LACTIS

USING as standard a sample of folic acid concentrate (7.7 per cent.) kindly supplied by Dr. R. J. Williams we compared the amount of folic acid[1] and norite eluate factor[2] in various types of extracts and liver preparations and found that some of these materials are much more active for *Streptococcus lactis R* than for *Lactobacillus casei*. In contrast an extract of spinach had the same degree of activity for both organisms.

These differences can be demonstrated to be due to the presence of another substance which we have now isolated. The new substance effectively replaces the folic acid standard in the case of *S. lactis* but is inactive for *L. casei*. We have calculated that 1γ of this product has the same potency for *S. lactis* as 56γ of the folic acid standard but that the same amount of this factor is less active than 0.0004γ of the folic acid standard for *L. casei*.

We believe that this newly isolated substance, for which we have reserved the designation of a name until its chemical nature is determined, is not folic acid or the norite eluate factor but a new growth factor.

JOHN C. KERESZTESY
EDWARD L. RICKES
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RAHWAY, N. J.

SULFAGUANIDINE OR SULFA-AMIDINE?

INCONSISTENCIES or inaccuracies in nomenclature are fairly common in the field of chemistry. The offense to students is perhaps not serious when such practice involves unusual cases. This does not, however, justify an attitude of indifference in the matter of accuracy whether it be in naming compounds or in the use of scientific terminology. Attention is called here to the misnaming of one of the sulfa drugs. The names and formulas of the more common and useful of these compounds are to be found in most recent editions of books on chemotherapy or biochemistry. An acquaintance with the parent compound and the modifying groups would enable any one to write the formulas of such compounds as sulfathiazole, sulfapyridine or sulfadiazine. To apply the same technique in the writing of the formula for sulfaguanidine would lead to obvious error. In the interests of accuracy this substance should be named sulfa-amidine or, for those who desire a more euphonious name, sulfamidine.

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CLASS DISTINCTION AMONG AMERICAN MEN OF SCIENCE

IN several preceding editions of the Biographical Directory of American Men of Science, one thousand

[1] Folic acid was determined by means of the *Streptococcus lactis R* assay method of Mitchell, Snell and Williams. (*Jour. Am. Chem. Soc.*, 63: 2284, 1941.)

[2] Norite eluate factor assays using *Lactobacillus casei* (B. L. Hutchings, N. Bohonos and W. H. Peterson, *Jour. Biol. Chem.*, 141: 521, 1941) were made in essentially the same medium as for folic acid assays.