DISCUSSION

SIGNIFICANT FIGURES IN STATISTICAL CONSTANTS

I WISH to commend the note in SCIENCE of September 25, 1936, by Professor Edward B. Roessler on "Significant Figures in Statistical Constants." The general point made is well taken, and the specific authors cited for disapprobation, Fisher and Tippett, are excellent choices. In regard to the number of figures to be retained in a finally published constant, the rule given to retain no figures beyond the position of the first significant figure in the standard error is quite satisfactory. I can not, however, agree with the rest of the rule to the effect that one more place in computations is sufficient. I have not found it so in all cases. Specifically, in obtaining a least-square solution where three or four parameters are to be evaluated, and therefore that number of simultaneous equations solved, I have found it necessary to retain an exceedingly large number of figures after the decimal point, and that if this is not done large errors may result. The errors arise this way: I multiply the equations through by constants to equalize the coefficients and then eliminate by subtraction. If a considerable number of decimal figures are not retained, when one subtracts one may obtain as a coefficient a quantity approaching zero, in which significant figures have been lost. The fifth or sixth decimal figures may become the first significant figure after subtraction. It is hard to know, or at any rate I have not been able to formulate any simple rule by which one can anticipate in advance at just what places it will be important to retain a large number of decimal figures, and I therefore retain routinely six figures after the decimal point, even if this amounts to twelve or more significant figures. This precaution of retaining so many figures, I have found necessary in practice nowhere but in the solution of simultaneous equations; but it is an illustration of the fact that one can not make any general rule that is simple for all calculations.

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NEW LOCALITIES FOR THE BLACK WIDOW SPIDER

To the thirty-six states and British Columbia, Alberta, Manitoba and Ontario from which black widow spiders, *Latrodectus mactans* (Fabr.), have been recorded,[1] H. M. Field adds Wisconsin[2] and L. H. Townsend southern Illinois and Oregon,[3] which tends to complete the picture of the distribution of this much maligned female. During the past four years of collecting spiders in the Chicago area, I have had the opportunity of adding northern Illinois and Indiana to the range. This leaves only eight states (Minnesota, Iowa, Virginia, Delaware, New Jersey, Connecticut, Rhode Island, Vermont) in which the spider has not been officially recorded. All these states will undoubtedly be put on the black list eventually, as they are surrounded on all sides by states which have this pest.

Around Chicago these spiders are fairly common in localized areas. I have found them in piles of cut wood in the Kankakee Dunes area about ten miles south of Momence, Ill. Their characteristic webs, extending up to low shrubs and down to a hollowed-out burrow in the leaf mould, were also found at the Michigan dunes at Lakeside, the Indiana dunes at most any spot from Gary to Michigan City and the Palos Park Forest Preserve in Illinois. Its obscure nest and shy ways in this region keep it well out of most people's ken. Probably this also accounts for the apparent spread in distribution of this species. Added support to this idea that the apparent spread is merely insufficient investigation is the fact that W. J. Gerhard of the Field Museum has specimens collected in 1908 from Palos Park. So far the spider has not been called to the attention of the public by invading homes or by causing bites, though there is no doubt that the spider is to be found within the region and probably in other spots than those in which it has been encountered.

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CONCERNING A NAME FOR BOTTOM MUD FOOD

DR. ROBERT T. MORRIS[1] has asked for a word (derived preferably from the Greek because companion words have been similarly selected) to signify the food supply in top layers of mud at the bottoms of water masses, whether ponds, lakes or oceans, from which numerous species of animals may derive much or all of their nutriment.

Some of us who consider mud-eating forms in studies of the comparative nutrition of marine animals are particularly interested in the adoption of a suitable word for this kind of food.

We are offering for consideration a basic word *"ilytrophon"* (from ἰλύς, mud, slime, + τροφόν, food). Examples wherein the root prefix is already in use to designate dwelling in or other association with mud,

[1] C. E. Burt, *Jour. Kans. Ent. Soc.*, 8: 4, 117, 1935.
[2] H. M. Field, SCIENCE, 83: 2147, 186, February 21, 1936.
[3] L. H. Townsend, SCIENCE, 84: 2183, 392, October 30, 1936.
[1] SCIENCE, 84: 291, 1936.