Fig. 1. Counting local lesions on leaf of *Nicotiana glutinosa* with electrically conducting glass.

by a fluorescent lamp mounted below. As a result, the lesions stand out with great clarity.

The conducting glass is connected to dry cells hooked in series to supply 8 v. Thus, when the delicate leaf tissue next to a lesion is punctured with a metal probe connected to the other pole of the batteries, contact between the probe and glass plate sets up a slight current which trips a relay that calls for 110-v current to activate a reset counter. When the probe is withdrawn, a pinprick of light shines through the puncture showing that the lesion has been counted (Fig. 1). About 500 lesions on a single half-leaf may be counted in approximately 2 min.

The ease of counting that has been achieved with this device has markedly reduced the strain and boredom previously associated with this task. The cost of the batteries, fluorescent light, counter, relay, glass, and so forth, amounts to about $40. Batteries appear to last about 2 mo when the counter is used twice each week. Further construction details may be obtained by writing to the authors.

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The Spectrum of Magnesium in Concentrated Sulfuric Acid

Niemann and Ikawa (*1, 2*) have shown that the type and amount of a carbohydrate in solution can be found from its spectrum in the 210 to 400 mμ region in strong mineral acid. In some cases, a quantitative determination of one monosaccharide can be made in an admixture of other monosaccharides, and some polysaccharides can be resolved into their component monosaccharide units. These determinations are based on the production of various furfurals by the monosaccharides on heating in strong mineral acid, each class of monosaccharides condensing into a slightly different furfural.

In crude preparations of carbohydrates, taken from sea water by extraction on charcoal, alumina, and other adsorbents, a discrepancy of 4 to 5 mg/liter in a total of 20 to 25 mg/liter was noted between the amounts of carbohydrates found by examination of the sulfuric acid spectra in the 210 to 400 mμ region and those found by the N-ethylcarbazole method. Since both methods depend on the formation of a furfural in concentrated sulfuric acid, it was apparent that some compound or compounds other than carbohydrates, could produce ultraviolet spectra similar to those of the furfurals, in hot sulfuric acid.

By a process of elimination, the substance was found to be magnesium. Figures 1 and 2 show the close correspondence between the sulfuric acid spectra of high concentrations of magnesium sulfate and those of a methyl pentose, rhamnose. Certain polysaccharides and some mixtures of monosaccharides duplicate even more closely the spectrum given by magnesium. While the concentrations of magnesium sulfate necessary to give these spectra may seem absurdly high, in working with crude preparations in which the carbohydrate concentration is very low, concentrations of

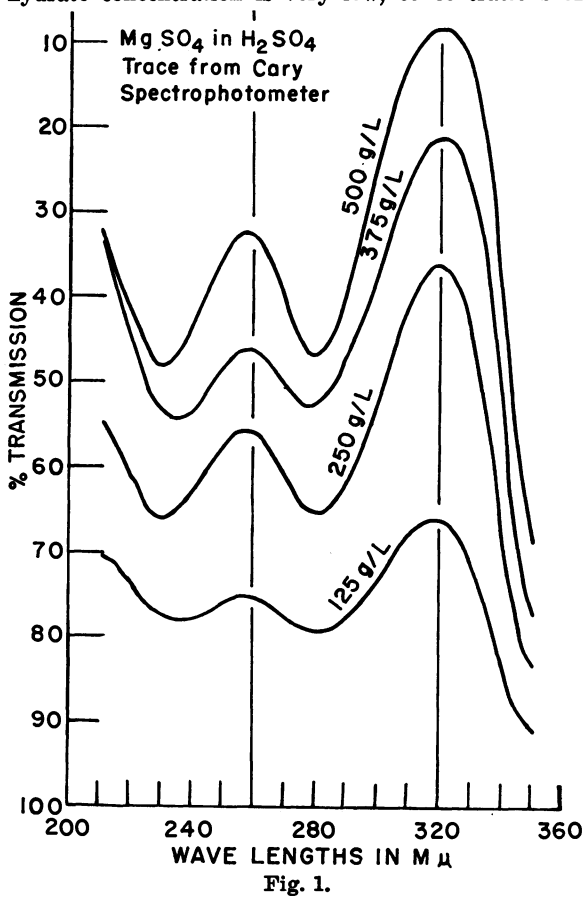

Fig. 1.

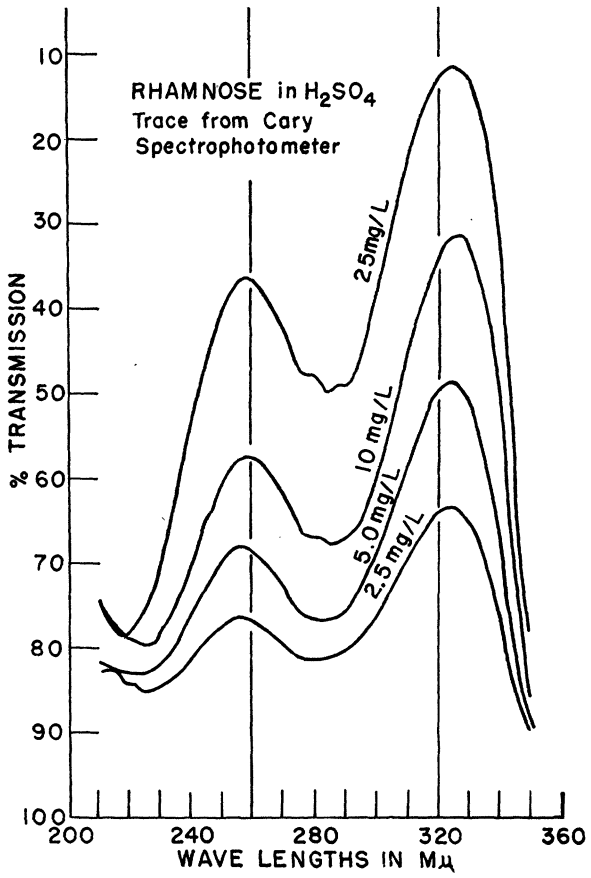

Fig. 2.

magnesium of this order may occur. The normal concentration of magnesium in sea water is about 1.3 g/liter. However, magnesium is picked up very readily by a great number of adsorbents and concentrated easily to 50 or 100 times its normal concentration. Exceedingly thorough dialysis is necessary to remove all traces of magnesium.

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On Scientific Writing

Apropos of the Apr. 23 issue of *Science,* concerned largely with the problems of scientific writing, I find in my files the following quotation from a source unknown to me. Other readers may also find this of interest, and perhaps one of them can inform me of its authorship.

ADVICE TO YOUNG WRITERS

In promulgating esoteric cogitations and articulating superficial sentimentalities, philosophical and psychological observations, beware of platitudinous ponderosity, jejune babblement and asinine affectations. Let your extemporaneous discantings and unpremeditated expiations have intelligibility and vivacity without thrasonical bombast. Sedulously avoid all polysyllabic propensity, psittaceous vacuity and ventriloquial verbosity. Shun double-entendre, imprudent jocosity, and pestiferous polluting profanity either obscure or apparent. Don't call names or use big words, but talk plainly, sensibly and truthfully. All of which is remindful of Disraeli's philippic for Gladstone: He was a sophisticated rhetorician inebriated by the exuberance of his own verbosity.

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May I be permitted to give my impressions of Florence Moog's recent communication [*Science* **119**, 567 (Apr. 23, 1954)]. That it engages in rather broad generalizations to contend that scientists write poorly and that the censure should have limited itself logically to "some write poorly" is not to be gainsaid. However, when Dr. Moog, to buttress her critical position, brings in such works as Darwin's *Origin of Species,* and inquires whether they weren't highly effective in their own day, she misses the point involved in the problem. Certainly a work such as the *Origin* was most effective; in fact, it was epoch-making even in the early days of its inception; but, the fact remains that if it had been written in a more craftsmanship manner, it would have carried its message across with more simplicity to people who weren't possessed of the avid interest and curiosity of scientists.

Also, it is curious that the very issue in which Dr. Moog has her interesting letter carries an exceptionally valuable contribution by Eugene S. McCartney, titled "Does writing make an exact man?" [p. 525], in which the author points out some of the verbiage used in scientific articles, and so forth, which obfuscates the substance. That when one has things clearly in his mind, he can express them clearly may pertain to many instances; but, I seriously doubt whether this, too, isn't falling into the category of untenable generalization.

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Geochronological Significance of Extinct Natural Radioactivity*

An extinct natural radionuclide is defined as an unstable nuclide whose half-life is sufficiently short to have resulted in complete decay since the presumed origin of the elements, yet sufficiently long for its disintegration to have produced effects in nature that can

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