States, Canada and Newfoundland, while the university undertook strict supervision of all advertising, stipulated control of the quality of the reinforced foods by means of regular assays by independent laboratories, and also maintained certain regulations as to prices to be paid by the public in order to keep these as low as possible. The university's royalty was also kept at a low rate in order to keep the burden on the consumer at a minimum.

Through this arrangement we have hopes of making a useful product available to the public in an efficient manner, at the same time safeguarding the interests of the university. A number of problems have presented themselves, some of which have been successfully met, but new ones are still coming up and await solution. It should be possible to set certain useful precedents.

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TWO CRITICISMS

I DESIRE to call attention to two practices which in recent years are occasionally noticed and which are objectionable. One is the use of the *unit* of wave-length, Å, for the wave-length itself, λ. The other is the putting of zeros in the tens columns of catalogues.

With the adoption of the Ångstrom as the official *name* of the unit of wave-length in the spectrum some writers began to use it in place of λ, the wave-length itself. This is neither logical nor advantageous. The use of λ before the number to designate wave-length had become an established practice, a necessity, and entirely satisfactory. It is by no means my feeling or wish to detract from the honor due the great Ångstrom, merely to clarify the use of this honor, which it seems to me is fairly obvious as the intentions of the body bestowing it.

Before the adoption of the Ångstrom as the unit (as well as since) the wave-lengths were given in ten millionths of a millimeter. Sometimes this unit of length was given as μ, but usually it was assumed to be understood. Now the Ångstrom, Å, is merely the *name* of this *unit* of a ten millionth of a millimeter, but obviously not the wave-length itself, which is the *whole number* of these units which go to make up the wave-length λ.

Those who use Å usually omit λ, as, for example, 4,340 Å instead of λ 4,340. While perhaps correct in a sense it is much as if we gave a certain number of inches and failed to say of what they were the measure. The users of Å in the way criticized will probably counter that it is well known that these are wave-lengths, to which I would reply that for a much longer time it has been known what the unit was.

It seems to me that here is where the fundamental conception is wrong—that the old designation λ is correct and that the unit Å applies only *within* the spectrum to specify the distances between lines or an arbitrary number of units. That when we wish to give the wave-length of Hγ we should say λ 4,340, but that if we wish to give the distance between the two calcium lines H and K we should say 35 Ångstroms instead of 35 ten millionths of a millimeter, or sometimes merely "tenth mu" among spectroscopists, as formerly.

The use of zeros in the tens columns in catalogues is not extensive and I have only noticed it in a few cases comparatively recently. The object presumably is to avoid such mistakes as occur occasionally by a number getting wrongly into the tens columns of such data as right ascensions and declinations or omissions thus causing confusion. Such mistakes happen but seldom; rarely indeed if the proofs have been read with sufficient care. In small lists of very miscellaneous data such a practice may find some justification but not in extensive catalogues, where entire pages often have the same tens column.

My objection to this practice is that not only is it in reality unnecessary, but chiefly that it is a bother to those consulting the catalogues—just that many more figures to take mental note of in getting out the data wanted. Unquestionably, the fewer the figures which the user of a catalogue has to even look at, the better.

As to the number of mistakes which would be avoided by filling in the tens columns with zeros, it can safely be said that they would not offset the work caused in preparing MS, typesetting and proofreading as well as in the use of the catalogues.

One hesitates to make any criticism whatever of some of the finest and most useful catalogues of data ever provided the investigator, but that feeling should not deter us from trying to better even them in small but essential practical matters.

I might add the suggestion that it is becoming increasingly useful to have the epochs at which spectroscopic data were obtained given in the catalogues *as far as possible*. This is usually given in original sources, but where possible it is useful to have such data in general catalogues also.

C. D. PERRINE
CORDOBA
OCTOBER 12, 1932

CONCENTRATION OF MICROFILARIAE BY THE SALIVARY SECRETIONS OF BLOODSUCKING INSECTS

DURING my stay in the Chiapas Mountains, southeast Mexico, in November, 1930, investigating on

behalf of the Mexican Public Health Department the biology and distribution of the simulid flies concerned in the transmission of the microfilariae of *Onchocerca caecutiens,* I made the same observation as Strong in Guatemala on the concentration of microfilaria about the point of the bite and suggested also in my report, read before the III Congress of the Pan-American Medical Association, Mexico City, July, 1931, and published on September 10, 1931,[1] the same method for diagnoses of Onchocera infestation in man, in dissecting engorged simulid flies. It is very interesting to know that Professor Chas. F. Craig[2] has made the same observation with respect to the transmission of *Wuchereria bancrofti* by *Culex quinquefasciatus* in the Philippines. It would be an easy task for medical officers stationed in tropical Africa, where microfilaria-infections are frequent, to add more observations to the reported cases.

ALFONS DAMPF

LABORATORIO ENTOMOLOGICO,
OFICINA FEDERAL PARA LA
DEFENSA AGRICOLA,
SAN JACINTO D. F.,
MEXICO

BULBS FROM HOLLAND

I EXPECT that by now you have learned of the fictitious nature of the "Hollandia's World-Famed Flower Bulbs" advertisement which appeared in SCIENCE in September, and in other American magazines. It was exposed in the Report of the Chicago Better Business Bureau for November 4. According to the report:

> A fraud order was issued by the Post Office Department against Bulb Nurseries "Hollandia" and Harry Bruhl, its director at Voorhout by Hillegom, Holland, for fraudulent practices in the sale of flower bulbs. A previous fraud order was issued on March 18 against L. H. Straathof and others of Hillegom, Holland, upon evidence showing that under those names a scheme to defraud was being conducted through United States mails.

From an American bulb grower's view-point, this advertisement is of concern because it mentions the "certificate of health" supposed to accompany these bulbs. As a matter of fact, our great American bulb-growing industry has been made possible through the establishment of quarantine regulations necessitated by diseases harbored in foreign grown bulbs. The better Holland growers have tried to control these troubles but with varying success. Plant disease control largely depends on efficient crop rotation. This important measure is exceedingly difficult in a locality where usable land is limited and has given rise to certain rather artificial methods of culture. For example, it is a Holland custom to attain partial crop rotation by deep spading and turning the soil upside down, thus creating a "new" field. From a phytopathological view-point such methods can not compete with those possible in American bulb areas where land for rotation is unlimited and climatological factors more favorable.

Competent observers have pointed out that the success of the Holland bulb growers is not attributable to favorable climatic and edaphic factors but to the industry of the growers who have overcome unfavorable circumstances by what may be considered artificial methods. These methods have produced fine bulbs, but we feel that out of fairness to American growers it should be pointed out that the standard of American grown bulbs on a disease-free basis is equal to or higher than that which obtains abroad.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

THE "ROTETTE" OR AN APPARATUS FOR HANDLING SMALL QUANTITIES OF LIQUIDS WITH RAPIDITY AND PRECISION

IT was found in using the pipette previously described[1] that even higher precision was attained by mounting the pipette in bearings at a convenient angle. In this arrangement it could be used directly as before or it could be connected to another tube, either fixed or movable, by means of a rubber tubing. This greatly extended the usefulness of the device since larger quantities of mercury could be safely handled, though there was still a limitation due to the weight of the mercury and its tendency to surge when large quantities were employed.

The employment of a helical glass tube in place of the two bulbs previously used greatly simplified the problem and extended the practical limits as to quantities for which it might be adaptable. With the helical tube it is no longer necessary to have a volume of mercury equal to the volume of liquid to be handled, since only enough mercury to fill the lower half of one turn of the coil is required. The controlling factors are diameter of tubing and of coils and the number of turns. A proper choice of these makes it possible to control the volume desired. With this form the volume displacement is proportional to

[1] *Medicina, Revista Mexicana:* Vol. xi, Year XII, No. 151, pp. 753–761 (see p. 757).
[2] SCIENCE, 1952, May 27, 1932, pp. 561–2.
[1] E. L. Harrington, SCIENCE, p. 201, Aug. 22, 1930.