entific research, with more than 20 countries. But, unfortunately, there still are countries whose flora interests us, but with whom we have no contacts because of the cold war.

My colleagues and I followed with great interest the historical meeting between Nikita Khrushchov and President Eisenhower, and we are happy to see that a thaw has set in. It is as necessary to science for its growth and development as it is to plants. That is why we stand for complete disarmament, for friendship among peoples, and for broad contacts between scientists.

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Assay of β-Glucuronidase

We have noted with interest the reports concerning the effect of solvents on the activity of mammalian and bacterial β-glucuronidase [Gautney, Barker, Hill, *Science* **129**, 1281 (1958); Smith and Bongiovanni, *ibid.* **131**, 101 (1960); Ryan and Mavrides, *ibid.* **131**, 101 (1960)]. Two or more years ago we experienced difficulty in assaying Sigma Chemical Company's bacterial β-glucuronidase and arriving at the indicated unitage per gram. We pursued this problem not simply as a matter of analytic technique but also as a matter of simple economics, since we were assaying the enzyme at about 25 percent of its supposed activity. Sigma's laboratories assisted us in resolving our difficulties and, eventually, in understanding the discrepancies through the publication of their bulletin [Sigma Chemical Co., "Urgent Bulletin re Bacterial Glucuronidase" (Nov. 1958)]. It may be seen from this bulletin and from the reports published in *Science* that a tremendous variation is possible in "units of activity" per gram of enzyme, depending upon the technique by which the unit figure is derived. We feel that the following pertinent comments should be made.

In the assay of β-glucuronidase, the unit of activity is defined as the amount of enzyme which will liberate 1 microgram of phenolphthalein from phenolphthalein glucuronide in 1 hour *under specified conditions.* Altering these conditions in any slight degree, as is done by the addition of chloroform to retard bacterial action, may change the apparent assay by several hundred percent. This great variability in activity makes it impossible to accept, as absolute, the figures which are reported in publications dealing with the hydrolysis of urinary steroid conjugates. Unless the exact technique of assay is known, unit values for enzyme added to urine have little meaning.

It is possible, of course, to obtain maximum hydrolysis of conjugates by standardizing a batch of enzyme against a urine pool and using it empirically, as has been suggested to us by Dan Broida of Sigma. This then works, as long as an excess of enzyme is added to a urine. It is, however, not a satisfactory approach. The procedure is arbitrary. The determined maximum of enzyme for one urine may not represent a maximum for another, and every urine processed in a laboratory cannot, practically, be titrated. The method is wasteful and, needless to say, expensive. It appears to us that exact standards for the assay, to be used without alterations by those engaged in steroid work, would help eliminate at least one technical headache from this field. Undoubtedly, it would make the comparison of methods and results from one laboratory to another more valid and realistic.

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