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FRED L. WILSON
Houston, Texas

Indian institutes—who gains?

Everett Hafner, in his sensitive account of a summer physics institute in North Bengal (PHYSICS TODAY, June, page 44), raises a fundamental question. With so many Indians settling into the US academe, which culture is being served by AID's efforts in India?

If we concentrate our efforts on educating India's gifted sons to an awareness of sociological problems, perhaps Hafner's problems of communicating with the Indians will dissolve. The summer institutes will be run by those best qualified: western-trained Indians who feel the need to invest an occasional six weeks in the terribly needy country they are so well equipped to serve.

HERBERT F. HELBIG
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Naming the new elements

The article "The Search for Element 102" (PHYSICS TODAY, Sept., page 25) presents a welcome clarification of the many problems that have beset the characterization of this enigmatic element. In addition Ghiorso and Sikkeland have given a valuable description of the multitude of experimental difficulties associated with detection of the heaviest nuclides—ranging from the need for increasingly sophisticated electronic and mechanical systems to the tedious details of the isotopic purity of target materials.

The controversial history of element 102 and the increasing complexity of such experiments suggest that perhaps the procedures for naming new elements should be revised. At present the Commission on Atomic Weights of the IUPAC accepts the name suggested by the initial discoverer. This has introduced a considerable amount of international politics into the heavy element programs and has contributed to a tendency to emphasize direct discovery of a new element, on occasion at the expense of the nuclear physics involved in the studies.

The properties of element 102 now seem well established. However, the next such dispute is already in sight, as is noted in Ghiorso's and Sikkeland's questioning of the identification of $^{260}104$ by the Russian group. I would like to suggest that the IUPAC consider the following steps to lessen the confusion stemming from such conflicting experimental findings. (1) The first of these should not be difficult, that is, acceptance of a name for future elements should be postponed until the initial results have been verified independently by a second group. (2) The second is less practical, but worth considering. The suggestion is that the IUPAC Commission assign names to new elements prior to discovery. The elements up to $Z = 114$ can, in principal, be produced even if lifetimes and quantities are below current detection levels. The present trend is to name new elements after outstanding scientists. While to date this prerogative has been used with discretion, it would be hoped that a more universal criterion might be found for selecting scientists to be so honored.

A second point I would like to mention regards the implication of the authors that spontaneous fission (SF) half lives decrease linearly with neutron number after $N = 152$, as indicated in their Fig. 4. From the point of view of further heavy-element production, the existence of such a trend would strongly preclude the observation of many additional heavy nuclides. However there is another interpretation of the irregularities in nuclear properties at $N = 152$ that gives a

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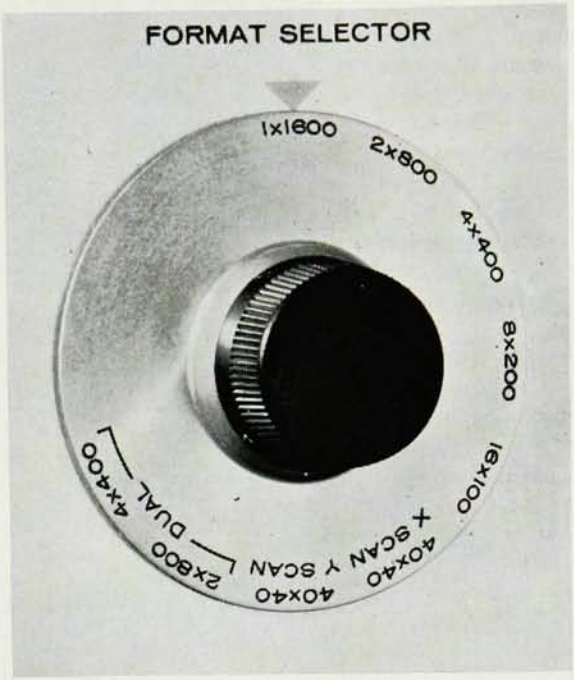

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more optimistic view.[1,2] If the 152 neutron subshell arises from a gap between the $N = 152$ and $N = 154$ neutron levels, the effects would be expected to disappear between $N = 156$ and 160. Thus a leveling out of the lifetimes would result beyond $N = 156$ and the SF half-life systematics would be expected to behave in a manner analogous to those for alpha decay—except the level gap would influence SF decay rates more dramatically. The predictions of these calculations[1,2] agree well with the results for $^{260}104$ but not for the Ghiorso and Sikkeland value for $^{252}102$ (which could be due to an isomeric state decaying by spontaneous fission). The solution to this problem is a subject of considerable debate at present, and hopefully current heavy-element research efforts will clarify it within the next year.

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Federal agencies and the Draft

Mr. Huffman of US Steel (PHYSICS TODAY, Aug., p. 9) makes a good point. Neither prominent scientists nor scientific societies have strongly opposed the ending of occupational and graduate student deferments. But it is not only the scientist and the association who "have an obligation to the American people to inform them of the vital importance of maintaining a strong scientific community . . . ," who have failed to make it clear ". . . to the general public that the best way for a scientist to serve his country is by doing good science." A great deal of responsibility lies with the federal agencies such as NIH and NSF, which have failed to support publicly the needs of the scientific community whenever those needs have conflicted with the single-minded purposes of the Selective Service system. In fact the civilian federal agencies make it a policy never to intercede with Selec-