

graph is chosen to transliterate a Russian one, its *separate* phonemic value is supposedly retained also in combinations of English graphs (this in reply to the *ay* query of London and London): literate Americans rhyme *Adenauer* with *Eisenhower* despite the *au*, and they do not silence *P* in *Pskov*, *k* in *kniga*, *Knobel*, or *Knut Hamsun*. Space forbids treatment of the large portion of irrelevant material in the letters—for example, the comments that English readers may as well mispronounce transliterated Russian words since they mispronounce French words; that a phonemic transliteration is no substitute for a competent Russian teacher (Ray); and Fabergé's strange logic in stating that *к* does not equal *k* because in "one university library" he could "find the *Doklady* of the Academy of Science of the U.S.S.R." listed only under *Akademia* and not under *Doklady*. (Let him try to find the *Proceedings* of the National Academy of Sciences under *Proceedings*—and, incidentally, no library system uses *Akademia*, only *Akademii* or *Akademiya*; Fabergé's entire letter teems with irrelevancies and inaccuracies—for example, his remarks about the difficulties of transliterating Arabic and about the use of the Cyrillic alpha-

bet, his comment that my proposal is Anglocentric, that *х* equals *h*, and so on.)

The writers of the letters are surely behind the times in their unawareness of what is currently being done in the ever-increasing Russian-English translation and abstracting programs. Consultants Bureau and the Pergamon Institute, the chief translation agencies for the physical and biological sciences, do not use the Library of Congress system and through the enforcement of their own system contribute greatly to uniformity, while the *Current Digest of the Soviet Press*, published by the Joint Slavic Committee of the American Council of Learned Societies and the Social Science Research Council, does not use the system of the *American Slavic and East European Review* but one whose "aim is to approximate Russian sounds without diacritical marks" (as stated in each issue of the journal). Plainly, what is needed is (i) greater and speedier efforts to achieve unity and (ii) a realization that, with respect to Russian, phonemic and graphic desiderata are reconcilable (as manifested in the fact that my proposed phonemic-graphic system differs but little from the Consultants-Pergamon graphic system, on the one hand, and from the *Digest's* system, on the

other, and is really a compromise or synthesis of the two, though I have been using it for almost 30 years in about four-score publications). Moreover, (iii) the entire matter is experimentally testable. For some time I have been asking English readers to read Russian material in my transliterated system, and on occasion have had the transliteration done by assistants whose knowledge of Russian was derived solely from my table of transliteration, in front of them. Almost always I have found the readers' pronunciations phonemically adequate (except of course for the irremediable *х-kh*, *ы-y* differences, and occasional difficulties with *zh*) and the assistants' transliterations errorless (except of course for corrections of their genitive *-ro* and *ë* without dieresis). My judgment of degrees of phonemic adequacy may be disputed as subjective; yet, pronunciations could, obviously, be recorded and submitted to a panel of experts for consensual judgment. Let the systems, then, be put to a verifiable experimental test, let a choice be made upon the basis of objective evidence free from habit-bound and ego-involved opinion and conjecture, and let there be unity.

GREGORY RAZRAN

Queens College, Flushing, New York

News of Science

President and Congress Act on Appropriations

Appropriations for many federal departments doing scientific work are being rushed through Congress under the pressure of a move for adjournment by early September. Appropriations bills for the Department of Defense and the Department of Health, Education, and Welfare went to the President recently after being cleared by Congress. The Atomic Energy Commission and a number of smaller agencies also are now learning how much money they will have for fiscal year 1960.

The money bill for defense, which the

President signed on 18 August, calls for \$39.2 billion. This amount represents a compromise between the Senate bill, which authorized \$39.6 billion, and the House bill, which authorized \$38.8 billion. The final appropriation, which was cleared by the whole congress after conference, was almost \$20 million short of the amount the President requested in his budget message at the beginning of the year.

For research and development, the bill authorizes more than \$1 billion each for the three services, with the Air Force receiving the largest amount, \$1.16 billion. The Advanced Research Projects Agency, the organization that sponsored

the Atlas communications satellite last December, has an appropriation of \$455 million. In addition, the Defense Department was given an emergency fund of \$150 million, bringing the total figure for research and development activities to \$3.8 billion.

HEW Funds Increased

On 14 August, the President signed the appropriations bill for the Department of Health, Education, and Welfare. This bill, sent to the White House 30 July, appropriates \$3.446 billion, \$282 million more than the President had requested. Almost all of the increases over the President's budget requests were made for health and education programs. The National Institutes of Health will receive \$400 million; the Office of Education \$431 million; and the Public Health Service \$828.9 million. Following a well-established pattern, the funds for the NIH were increased by \$105.7 million beyond the amount the President had asked.

In another action on appropriations, the Senate sent to conference a revised

bill which would give the Atomic Energy Commission \$2.68 billion for fiscal 1960. The bill must be reconciled with a House bill which appropriated \$51 million less. Both bills provide less than the Administration requested, \$2.69 billion. The Senate, which accepted the recommendations of its appropriations committee, called for the restoration of funds which the House had cut. The committee report said that the full budget estimates were necessary to carry out programs in reactor development and in applications of isotopes and nuclear explosives for civilian uses. The committee stressed its belief that the civilian program in these fields should now be supported by the government, although it recognized "that eventually industry should provide the major fund support." On 18 August the President signed an appropriations bill for \$2.65 billion.

Also in Senate-House conference is a supplemental appropriations bill that will provide funds for the operation of the National Aeronautics and Space Administration. The House, which originates all money bills, had cut \$68 million from the Administration's request for NASA. The Senate, acting on the same bill, restored the cut after T. Keith Glennan, administrator of NASA, said that any sizable reduction in the \$530 million budget request would permit the U.S.S.R. to take undisputed leadership in the space technology field. Glennan also suggested that the country's man-in-space program—Project Mercury, would be retarded. At this writing no action has been taken on the reconciliation of the two bills.

Other Bills

Other bills of interest to scientists, not related to appropriations, are also before Congress. Two conservation bills, one dealing with clean streams and the other with wilderness areas, may be acted on by the whole Congress before adjournment. Action on the wilderness bill, which would establish a national wilderness preservation system, was delayed by the Senate Committee on Interior and Insular affairs on 14 August. In the view of some observers, the bill, if reported out favorably, has a fair chance of being passed this session. The clean streams bill, sponsored by Representative John Blatnik (Democrat-Farmer-Labor-Minn.) has been passed by the House and is now pending before the Senate. The measure would amend the Federal Water Pollution Control Act to increase the authorization of construc-

tion grants for sewage treatment works at \$100,000 a year over a 10-year period. Present annual allocations, which are generally held to be inadequate, total \$45,000.

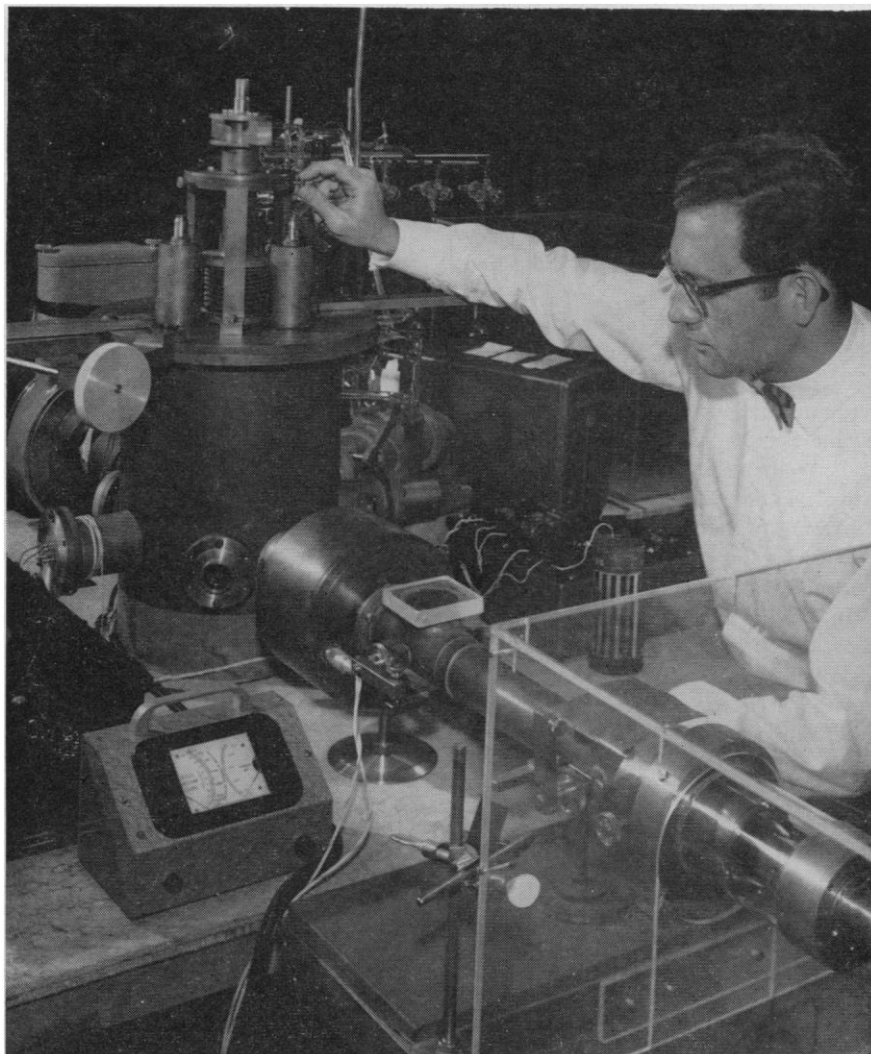
NBS Studies Trapped Radicals

To provide basic data on the properties and behavior of stabilized free radicals, the National Bureau of Standards, under the sponsorship of the Department of Defense, has made an extensive spectroscopic study of highly reactive atoms and excited molecules trapped in solids at low temperature. A number of methods are available for producing such electronically excited molecules and atoms in solids at low temperatures.

The Bureau employed primarily two techniques in order to present a con-

sistent over-all picture of observations. In one aspect of the work, M. Peyron, guest research worker from the University of Lyon, collaborated with H. P. Broida and H. W. Brown of the NBS Free Radicals Section in investigating reactive fragments condensed from nitrogen gas passed through an electric discharge. In the other phase of the study, carried out by E. Hörl of the Bureau's electron physics laboratory, nitrogen atoms were produced by the electron bombardment of nitrogen condensed on a cold surface, as shown in the illustration. Analogous studies with oxygen were made by L. Schoen and H. P. Broida.

Free radicals have been known to exist for about 30 years but only lately have they become the object of widespread interest. The National Bureau of Standards is now engaged in a 3-year program of free radical studies.



Apparatus used in National Bureau of Standards studies of trapped radicals produced by the electron bombardment of nitrogen condensates. Electrons from the electron gun in foreground at right impinge on the helium-cooled, nitrogen-coated target inside the cylindrical cryostat. The spectroscope used in studying the emitted light is not shown.