Summary

The objective of any system of transliteration is obviously to convey to the reader as closely as possible the phonetic value of the transliterated material. Barring phonetic transcriptions, this objective is doubtless best accomplished when (i) minimum use is made of extra marks and extra letter combinations that of necessity are arbitrary, unclear, and confusing to many readers, and when, of course (ii), there is only one uniform system and not a variety of varying ones. A detailed analysis reveals that present-day practices of transliterating Russian into English by no means conform to these desiderata, but that they could readily be made to do so. With only two extra letter combinations, *zh* for ж and *kh* for х, and a single and a double apostrophe for the "soft" and "hard" marks, a very close approximation of Russian phonology may be attained through a discriminating use of English as is. A complete and uniform transliteration of Russian into English, including the noncontroversial letters, is shown in Table 1.

Note added in proof. After this article was written, I came across the transliteration system of the *Current Digest of the Soviet Press,* a system the stated rationale and objective of which are much the same as those advocated here. However, the *Digest's* system clearly gets away from "approximating Russian sounds" in transliterating (i) я after и by *a*, (ii) ь and ъ before vowels by *y*, and in (iii) omitting ь altogether before consonants and at the end of words. The **прия-** in **приятно** certainly differs from the **пря-** in **прятать,** as do also the **дья-** in **дьякон** from the **дя-** in **дядя,** the **объя-** in **объяснять** from the **обя-** in **обязать,** and the **поль-** in **полька** from the **пол-** in **полка.** The last pair of words, furthermore, illustrates the fact that the *Digest's* system obliterates distinctions between Russian words of totally different meaning and etymology, a fact manifesting itself particularly often when the omission of the ь is at the end of words and no difference is thus obtained between the transliteration of such words as **брат** and **брать, ел** and **ель, пыл** and **пыль, цел** and **цель** and many others —as well as between the transliteration of the third person present (and future) singular and the infinitive in **-ить** class verbs. Again, the *Digest's* transliteration of ю and я after ы by *iu* and *ia* obviously destroys the uniformity of the rendition of the two letters, whereas my suggestion that in general a double apostrophe—the transliteration of ъ—be inserted between transliterated ы and succeeding vowels not only preserves this uniformity but also provides for the case of Russian у (English u) after ы as in **выучить** (the *Digest's* system does not mention у after ы and is not specific about е after ы).

News of Science

House Science and Space Committee Holds Hearings to Establish the Scope of Its Responsibilities

Since the opening of Congress last January the House Committee on Science and Astronautics has been holding a series of hearings covering a wide range of governmental scientific activities. Witnesses from a number of federal agencies—for example, the National Science Foundation, the National Aeronautics and Space Administration, and the National Bureau of Standards—have appeared before the committee in recent months. Most recently, Alan T. Waterman, director of the National Science Foundation, gave testimony on the activities of his organization.

Two purposes are being accomplished, according to observers. First, the 25 members of the committee, many of them new to the House of Representatives, are becoming acquainted with the agencies, the administrators, and the scientific activities that make up their area of legislative interest. Information derived from the testimony is being compiled into a number of reports to which the committee members can refer during future deliberations on matters affecting the various agencies. The second purpose is to define, in rough outline, the committee's jurisdictional range.

Space Committees

The House Committee, which succeeds the Select Committee on Astronautics and Space Exploration, has a counterpart in the Senate which was set up just 1 month earlier. The establishment of similar permanent committees in the two chambers of Congress at roughly the same time is a rare event in the history of the Legislature. The last such instance was in 1892, when both chambers established committees to deal with interior and insular affairs. The chairman of the new House group, Overton Brooks (D-La.), gave up his 22-year seniority ranking as a member of the Armed Services Committee to preside over the activities of the Science and Astronautics Committee.

The new group has permanent status as a standing committee. It will benefit from the work done by its predecessor, the Select Committee, which issued a number of publications on space and had a role in formulating the legislation that established the National Aeronautics and Space Administration. There is considerable continuity with the old group, with respect to committee members and staff members. John W. McCormack (D-Mass.), for example, served as chairman of the Select Committee and is now the second ranking Democrat in the new group. Other long-term members are Joseph Martin (R-Mass.) and Walter Riehlman (R-N.Y.).

Jurisdictional Range

The primary concern of the committee during this early period of its existence is its jurisdictional range. Jurisdiction over the National Science Foundation, the Space Administration, and the National Bureau of Standards was explicitly assigned to the committee in House Resolution 580, which set it up. However, other areas of responsibility were also indicated, in less explicit language. These include "scientific and astronautical research and development generally . . . outer space . . . and science scholarships." Hearings held earlier this year on the Nike missile program repre-

sent the efforts of the committee to define more exactly these general terms. Other hearings have been concerned with scientific education, weather reconnaissance and control, intelligence on Russian activities, and many other matters. In time, this exploratory activity, which is under the constant scrutiny of other Congressional committees, will help determine the fields of inquiry which the whole Congress will accept as the proper province of the House group. One other end essential to political life, is also served. The committee and its members, because of the topicality of its subjects and the stature of many of the witnesses, receive rather wide publicity.

Future Hearings

Although the committee does not issue schedules of future hearings, it is expected that a broad pattern of investigation will continue in the future. According to informed sources, hearings may be expected on computers, solid-state physics, and oceanography. The oceanography hearings are expected to include examination of the recent proposal of the National Academy of Sciences for a 10-year program of ocean study, including the construction of a number of research vessels. A bill embodying the Academy's recommendations is said to be in preparation. Another bill, reflecting an idea first suggested by Wernher von Braun, is also expected to come from the committee. This is the so-called "tithe" bill. Under its provisions, a 10-percent increase would be made on every research and development contract let by the Government, this amount to be earmarked for basic research in the field to which the contract is directed. It is estimated that passage of the bill would add approximately $600 million to the country's annual expenditures for basic research.

Nuclear Reactor Housed in 190-Foot Sphere

The 300-ton reactor for the Commonwealth Edison Company's Dresden Nuclear Power Station is now being installed at the plant near Morris, Ill. The reactor vessel is 42 feet high and 12 feet in diameter. Its walls are 5½ inches thick, and are made of low-carbon steel with an interior lining of ⅜-inch stainless steel. Built by the New York Shipbuilding Corp., the unit was shipped by barge from Camden, N.J., over a circuitous 3600-mile route.

Dresden Station is expected to be ready for regular service by mid-1960. The General Electric Company is building the plant for a contract price of $45 million.

U.N. Surveys Development of New Sources of Energy

Notable progress in the last 2 years in developing applications of solar, wind, and geothermic energy is reported in a United Nations study on new energy sources. The report, prepared at the request of the U.N. Economic and Social Council, was considered by the council session that opened in Mexico City on 7 April.

Besides describing technical and other developments in the use of energy from the sun, the wind, and the earth, the report proposes the scheduling, in about 2 years, of an international conference on new sources of energy other than the atom. The report also suggests that the agenda for such a conference should focus attention on applications rather than on discussion of scientific principles and basic research.

In a summary of recent developments, the report says that direct conversion of solar energy to electricity by means of solar batteries and by thermoelectric converters is rapidly being advanced.

Work also continues, though at a slower rate, on the use of solar energy in steam-raising, air conditioning, refrigeration, and water distillation. Less progress appears to have been made in developing solar-heat storage, solar engines, and solar furnaces for industrial production. A significant aspect of recent developments has been the increasing attention given to new materials, such as plastics, suited for use in solar equipment.

In the field of wind power, the past 2 years have been a period of "consolidation and of transition from experimentation to applied research and commercial use." In underdeveloped countries, wind-power surveys have led, in a few cases, to the installation of the first modern wind-power plants. The linking of large wind-power plants to local or country-wide grid systems is being explored. Most of the work on this is being done in Europe.

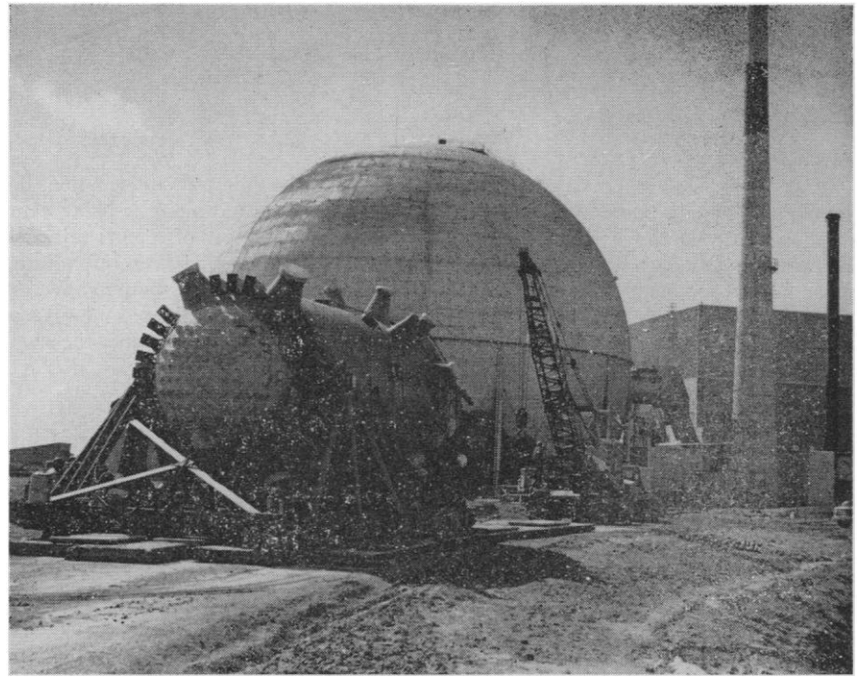
As regards geothermic power (natural steam and hot water), the report notes that production of electricity from this source—limited 2 years ago to Italy—is being started in other countries. The greater interest in geothermic power is also reflected in the search for and discovery of new geothermic fields.

In the section of the report describing development in each of the three new energy fields, the following points are covered.

Solar Energy

Introduction of new devices and materials has helped improve efficiency and reduce costs in practical application of solar energy. The design, manufacture, and installation of solar water heaters are proceeding in Australia, the Belgian Congo, Burma, Chile, Egypt, France, French West Africa, Israel, Italy, Japan, New Zealand, the Union of South Africa, the United States, and the U.S.S.R.

Solar cookers may become a common sight in some countries, where women are accustomed to being out-of-doors, where the main meal is eaten during the



Nuclear power reactor just before it was moved into a steel sphere at a plant near Morris, Ill.