who wrote the letter, for example, prescribe the following fairly strong medicine:

> Ideally, some international agency ought to be constructed for examining and assessing the foundation of new journals. At the present time this is probably an unrealistic thought. National chemical societies are not perfect, and indeed have sometimes resisted the formation of badly needed supranational journals. They should, however, be urged to set up an impartial mechanism for evaluating the need for a new journal and require that criteria for assuring the level of quality are met. A set of criteria for refereeing practice, statistics concerning rejection rates, criteria for terminating a journal, restrictions on language or national origin of work, page charges, etc., would be the proper concern of any committee.

As the letter suggests, journal publishing does not provide a model of logic or efficiency. The years after World War II were a period of unprecedented growth for science and consequently for scientific journals. This growth, of course, has been largely fueled by federal funding. In the case of journals, the government not only underwrites page charges in nonprofit journals but has also subsidized journal income by, for example, making subscriptions chargeable to research grants. Perhaps even more important, funding agencies have found many direct and indirect ways to subsidize the creation of new journals.

There is no question of the importance of the role of the federal agencies in the expansionary period of journal publishing, and cutbacks in federal science funding in recent years have clearly added to the pressures on journals.

Many journals now find it difficult to react to these pressures.* During the salad days of science in the 1960's, they were able to give top priority to professional concerns or to protecting organizational interests. The reaction of scientific publishers as a group to increasing costs has been to raise prices at a rate that puts them at the top of all the charts plotting inflation in the periodical field.

Federal agencies for their part have done little to analyze or revise the random policies which have so drastically influenced journal publishing. However, there are signs of changing attitudes. One potentially significant effort has been launched at the initiative of NLM director Martin Cummings. A small committee is preparing the way for a meeting of a fairly large and high-powered group representing both commercial and nonprofit publishers. The idea is to have a hard look at all major aspects of journal problems and to recommend, among other things, how federal policies may be altered to improve the situation.

In view of the importance of journals to the scientific enterprise, it is surprising that the cost crisis affecting journals and libraries has not prompted more efforts at corrective action. The photocopying issue has claimed primary attention but other journal problems are enforcing the need for new answers to the old questions of who pays and how much.—JOHN WALSH

* One of the few useful general discussions available of the problems of journal publishing is to be found in the proceedings of a workshop sponsored by the Council of Biology Editors in May 1973. Titled *Economics of Scientific Publications*, a limited number of copies are available from the publications office of the American Institute of Biological Sciences, 3900 Wisconsin Avenue, NW, Washington, D.C. 20016.

House Science Committee: Staking Out a Broader Claim

The House Committee on Science and Astronautics is industriously seeking to consolidate (or, as some say, groping toward) a new, powerful, and expanded role as overviewer of all government scientific research and development activities.

The image of the committee as "the space committee" has been hard to shake, despite the fact that most of the important legislation originated there in recent years has not been space-related. In fact, the committee has recently been the font of four major bills: a 5-year, $50-million solar energy demonstration bill that swept the House on 13 February; a 6-year, $80-million geothermal demonstration bill due to be reported out of committee soon; a measure to establish a national fire program within the Department of Commerce; and the metric conversion bill.

The fire bill would set up a new research program and data collection system as well as a training academy, all of which would eventually require an annual budget of about $20.5 million (*Science*, 24 August 1973). This is a relatively noncontroversial and, many say, long overdue measure, which is scheduled for House vote this month and is expected to pass with little difficulty.

Passage of the metric conversion bill, which may hit the House floor this month, is more uncertain. Modeled after recommendations of a National Bureau of Standards report completed in 1971, it calls for a 10-year, voluntary effort to go metric nationwide. (The Senate passed a metric bill in the last Congress; a new one is now awaiting action by the Senate Commerce Committee.) The House bill adopts the report's approach, which is to let the costs of conversion fall where they may. A small board set up in the Commerce Department would coordinate public and private efforts. Passage of the bill in this Congress is not at all certain, because some craft unions, representing people who own their tools, will oppose it unless it is amended to reimburse them for the costs of metric instruments.

The committee is by no means abandoning space, as chairman Olin E. ("Tiger") Teague (D–Tex.) would be the first to affirm. But it is according other fields, particularly energy, the kind of scrutiny that was once reserved for space.

The character of leadership in the committee has changed markedly in the past few years. The mild-mannered and elder statesmanly George P. Miller (D–Calif.) was replaced in 1973 by Teague, a shrewd politician with close ties to the Texas power structure and an ardent devotee of the National Aeronautics and Space Administration (NASA). Emilio Q. Daddario, a Connecticut lawyer who moved with ease among the upper echelons of the scientific community, was replaced in 1971 as chairman of the science research and development subcommittee by John W.

Davis (D–Ga.), a country judge who is known more for horse sense than an intimidating intellect.

Among the newer members of the committee, Mike McCormack (D–Wash.), a former Battelle Corporation chemist, appears to be carving out a distinctive role for himself as chairman of the subcommittee on energy, where the solar and geothermal energy demonstration bills originated.

The committee's major preoccupation, as always this time of year, has been authorization hearings on the budgets of the National Science Foundation (NSF) and NASA. It's going to be a tougher job than usual, says one staff member, because of dramatic increases in money requested for energy research. The Administration has asked for a huge hike in the fiscal 1975 budget for NSF's RANN (Research Applied to National Needs) program, from $70 million to $150 million. Some $102 million of this is for energy-related research. Since much of the $102 million is for applied research and pilot projects, the committee may try to transfer some of the requested RANN budget to NASA, which, unlike NSF, is geared to conducting demonstration programs.

The NSF can be counted on to oppose this shift. Its position is that large-scale demonstration projects in solar energy, such as those called for in the solar bill, will not prove economically attractive enough to draw private industry into the field. The RANN solar budget would be devoted to studying all the aspects—economic, marketing, and distributional, as well as technical—of solar energy, the idea being that it will be several years before demonstration projects are feasible.

The NSF also opposes the terms of the geothermal bill, which is designed to explore the feasibility of drawing power from dry hot rocks and geothermal brines. The bill would put NASA in charge of this project: NSF believes that NASA is ill-equipped to deal with geothermal energy, and that the proper agencies are RANN, the Atomic Energy Commission, and the Department of the Interior.

All this would seem to call for a clarification of the respective roles of NSF and NASA in exploration of new energy sources. The Davis subcommittee is attempting to come to grips with the question of NSF's role in the national research and development scene with two staff studies: one is an evaluation of the RANN program as gauged by the responses of users of its research; the other is an evaluation of NSF's basic research program (which still takes up most of the agency's budget), with astronomy selected as a case study for overall trends.

The committee is also trying to engage in the kind of long-term thinking that other committees do not have time for. A study is planned, for example, on materials research and development, a subject that has not received much public attention yet but that promises to be a hot issue in a couple of years. This will cover the development of new materials, new sources for and recycling of old materials, and the problems surrounding the importation of increasingly scarce raw materials.

The Big Picture

The committee is struggling manfully to get a greater historical, social, and economic perspective on national ills that are susceptible to treatment by science and technology. Davis's committee recently held three mornings of hearings on "science, technology, and the economy," to which such notables as Edward Teller and Margaret Mead were invited.

One morning was largely devoted to historical analogs of the current energy crisis. Davis had read in *Natural History* magazine an article about the 16th-century wood shortage in Europe, so he got his staff to find a man who would talk about that, as well as someone to talk about the whale oil shortage in the 19th century. In both instances, it came out in the hearings, necessity proved the mother of invention. The wood shortage stimulated exploitation of coal and the development of coal extraction technology—all of which hastened the advent of the industrial revolution. In the case of the whale oil shortage, said W. Philip Gramm, economist from Texas A&M University, high prices for whale oil made exploitation of petroleum and gas distilled from coal economically feasible. Gramm extrapolated to the present day, saying that rationing or price controls would only suffocate private enterprise and that all we needed to do to get out of the woods is develop oil shale, natural gas resources, and the abundance in the outer continental shelf. Gramm's prepared testimony dealt with fossil fuel alternatives in one sentence: "The breeder reactor will come on and make nuclear energy economically viable, and solar and thermal energy can be developed when they are needed."

With advice such as this, and testimony from Mead, who pointed out that national policies must tread a path between despotism and chaos, it is doubtful the committee came away with much to generate policy alternatives, but it was an imaginative try.

Another set of broad-gauge hearings, on federal science policy and its advisory apparatus, is scheduled for May. Daddario's subcommittee held similar hearings in 1970; the current ones are expected to carry more weight because they are being held by the full committee. Last July, the committee invited Administration representatives to outline their objectives following the abolishment of the Office of Science and Technology and the President's Science Advisory Committee. This time, outsiders will give their assessments of Administration policy (or lack of it) and make their own suggestions.

Another sign of the committee's spreading interests was the creation of a subcommittee on international cooperation in 1971. This committee is planning some hearings on issues such as patent reciprocity and credit terms involved in exchanges of advanced technology with the U.S.S.R.

The committee's prestige cannot help but be enhanced by the existence of the new Office of Technology Assessment headed by its original mastermind, Daddario. Three of the 12 members of the office's congressional board are on the committee: Davis, Teague, and Charles A. Mosher (R–Ohio), the ranking minority member.

The committee has not expanded its staff, but it does have science interns for the first time: one from the executive branch (National Bureau of Standards) and one donated by the Institute of Electrical and Electronics Engineers.

If the Bolling committee proposals (*Science*, 22 February) pass the House, the committee, whose new name will be the Committee on Science and Technology, can look forward to becoming one of the major committees of the House, with expanded oversight duties including jurisdiction (if it is created) over the proposed Energy Resources and Development Administration.

Whatever happens to the Bolling proposals, the Science and Astronautics Committee seems clearly intent on becoming the Committee on Science and Technology in spirit if not in name.—CONSTANCE HOLDEN

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