ings were interpreted in the light of the sociopolitical and scientific values by which scientific associations justify their existence.

The "idea man" embodies the primary, scientific values of the association, and despite his relative unconcern for people and power, it is hard to deny him professional eminence. The "professional aspirant," on the other hand, fulfills many of the functions that arise from the necessity for continued sociopolitical existence, and his commitment to these aspects of the association's functions, as well as his ambition and drive, eventually lead to professional recognition.

It was also possible to compare the psychologists in the universities that had "better" research orientation with those in "other" universities. As one would expect, there were more "eminent" psychologists in the "better" universities. More illuminating were comparisons of the "noneminent" teachers in the "better" universities, who were ranked high on professional aspiration and ability and moderately high on altruism, with the "eminent" teachers in the "other" universities, who were ranked high on professional aspiration and research ability but markedly low on altruism.

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News and Comment

Investigation: Mixed Motivations Led to House Decision to Probe Government Support for Research

Last week, in this space, it was observed that the House investigation of federal support for research has been entrusted to a talented but diverse group. The nine-member committee not only reflects conflicting political sentiments toward the role of the federal government in American life but includes senior members of major standing committees that, initially at least, regarded the investigation as a usurpation of their research jurisdictions. Furthermore, the members' present knowledge of the subject is extremely uneven, ranging from close-to-nothing to extreme familiarity. Ironically, the committee members with the most relevant congressional experience are unsympathetic to the inquiry, while their less knowledgeable colleagues are highly enthusiastic.

The chairman of the investigation, Carl Elliott (D–Ala.), is a Kennedy moderate with a record of persevering and effective support for federal aid to education. Elliott, however, concedes that he knows little about the federal involvement in research, and it appears likely that he isn't going to have much time to find out, since he is heavily engaged in averting political destruction in his tortured home state, where he is threatened by segregationist sentiment that is nourishing a booming Republican opposition.

Of Elliott's four Democratic colleagues on the committee, it can be assumed that at least three look upon the investigation as a potential threat to the power and authority of their own committees. They may quite possibly set aside their doubts and work for a meaningful and thorough investigation. But the odds on this are poor. And, if these committeemen should conclude that the investigation is a threat to their main interests, it is worth keeping in mind that their capacity for protecting their vital concerns commands earnest respect in the long, pillared, and shadowy corridors of the House.

As for the four committeemen who comprise the Republican minority, their senior member, Clarence Brown (R–Ohio), is energetically and unswervingly dedicated to reducing the federal budget, of which research and development accounts for some 15 percent. And his Republican colleagues on the committee are so junior in the party's ranks—Brown came to the seniority-revering House in 1935; the most senior of the three arrived in 1961—that only the most virulent sort of political insensitivity could prevent them from deferring to Brown's sentiments. However, it is unlikely that any of the three will be faced with the unpleasantness of swallowing political principles, for inquiry reveals that all of them pretty well share Brown's political sentiments, and one of them, John B. Anderson of Illinois, is of a political bent that, if anything, makes Brown look a bit leftish by comparison.

Thus, it appears that the diversity of committee membership could not be greater if a vegetarian, a meat packer,

and a cannibal had been commissioned to survey the national diet and suggest beneficial changes.

Now, where did this investigation come from, why was it assigned this membership, and where is it going?

Fundamentally, the investigation is rooted in a situation that has long deserved some sort of comprehensive public survey—namely, the incredibly rapid expansion of federal support for research, development, and related education. In 1940, according to the best available figures, the federal government spent $74 million in these areas; by 1953 the amount had risen to $2 billion; this year it is expected to be over $15 billion. The numbers are open to question, particularly on the matter of education, but the growth and trend are clear. The investment has produced enormous benefits for the American people, but at the same time, no one, including the nation's scientists and science administrators, has any clear idea of what is happening to this country's scientific, technical, and educational resources under the impact of these vast expenditures. There is also the feeling, in Congress and elsewhere, that the traditional political processes have been overrun by the problems of allocating national resources for research and development. And finally, it is no secret that a lot of questionable and often reprehensible situations have been created by the scramble for money; that the Air Force and NASA energetically and unnecessarily duplicate research facilities in their interminable row over space jurisdiction; that the policies governing grants to universities assure that the rich get richer and the poor lose faculty members who show promise; that federally supported fellowships are so abundant in some fields that they are thrust upon students of questionable ability while talented people in vital but unglamorous disciplines go virtually unaided; that old and productive—but politically naive—agencies such as the Bureau of Standards and the Geological Survey are being battered by rapidly growing and aggressive agencies such as NASA, the Atomic Energy Commission, and the Public Health Service; and that the federal government is overwhelmingly involved in scientific education but, for political reasons, blithely palms off these activities under the popular label of "research;" which is fine for education but of questionable value when Congress asks what it's getting for its research expenditures.

Thus, it is not going to hurt the broad national interest, the level of congressional understanding, or the spirit or substance of science if, for the first time, the puzzle is unscrambled and the pieces are laid out for all to see. This objective, after all, is implicit in a lot of disturbed rumblings that for some time now have been coming out of the scientific community. And it was this same objective that led the White House to develop what has now evolved into an elaborate science advisory apparatus.

However, Congress, which paradoxically bears the major responsibility for promoting the situation which the House now sets forth to investigate, has a sluggish nervous system, and the convergence of a number of factors was reuired before the demand for change could compete with the affection for the status quo. The tardiness can be attributed mainly to the fragmentation of scientific jurisdictions among dozens of law-writing and money-dispensing committees, which in piecemeal fashion helped create a scientific and technical establishment that defies comprehension in or out of Congress. Rather late in the game, various committees—such as Space, Armed Services, and Atomic Energy—came to realize that research and development was a key enterprise in their jurisdictions, and they established special subcommittees to cover this field—and protect their own authority.

Meanwhile, however, the feeling was spreading through Congress that, regardless of these committee efforts, research and development had grown beyond the purview and—even more disturbing—very probably beyond the control of the legislative branch, and this feeling proved to be more powerful than the individual committees' efforts to preserve the fragmented approach. Once this feeling became dominant, it was inevitable that enough support could be aroused all along the political spectrum for at least a survey. And when it had been decided to take that step, it was also inevitable that the effort would be shaped by various political sentiments and personal ambitions and concerns. Some may be repelled by this intrusion of partisan interest into what should ideally be a neutral fact-gathering venture, but if, let's say, the National Academy of Sciences were to undertake a similar effort, only the most naive would expect it to be free of personal or institutional interest and prejudice. This is simply because people run the system and they cannot be expected to approach the task with supernatural disinterestness. However, the disturbing thing in the case of the House investigation is that the intrusion of narrow interest is above and beyond any reasonable expectation, and stands to overwhelm the investigation's worthy goal.

Joining of Forces

With concern for Congress's authority and power providing a basic bloc of support, other elements joined in to put over the investigation proposal and to dictate its timing, form, and membership.

First of all, there was Elliott's presentation of a specific proposal, something that grew out of a combination of his own political troubles and his long-standing interest in federal support for the nation's intellectual resources. In quest of political salvation, he might have attempted any number of steps within the House, but the investigation was one that easily dovetailed with his personal interests and his need for a publicity-producing forum. This is something that he lacks in his regular assignment on the Rules Committee, which, despite its immense power to control the flow of bills to the floor, rarely puts on a show that attacts the press.

After the proposal was presented, it attracted the attention of fiscal conservatives, who realized that the investigation might serve as a useful vehicle for attacking federal spending—if they could get their men on the committee, a price they successfully extracted as a condition of support. And, once it appeared likely that the investigation would take place, Democratic liberals with senior positions on committees that might be affected demanded a spot for their men as the price of support. Initially, Elliott proposed a five-member committee, but under pressure from left and right, the committee was expanded to its present nine. (Representative L. H. Fountain, the North Carolina Democrat who has been investigating NIH for several years, would seem to have merited at least consideration for membership on the committee. But with only five spots avail-

able for Democrats, and the major research committees demanding representation as a condition of support, Fountain wasn't even in the running.)

All of this took place against a background of fairly widespread affection for Elliott, who has been a thoughtful and industrious legislator, but of perhaps even greater importance, the investigation proposal appealed to hundreds of legislators whose states have been receiving only a thin slice of the federal research budget. In recent years, for example, 25 institutions—few of them in the south and most on the east and west coasts—have received some 60 percent of federal funds for university-conducted research. The Defense Department, which accounts for about half the federal research budget, awarded nonprofit and educational institutions in California about $128 million in research grants and contracts last year; it spent $117 million in Massachusetts, $53 million in Maryland, and $38 million in New York. But it spent only $35,000 in Nebraska, $54,000 in West Virginia, and $56,000 in Montana.

Curiously, most of the have-nots were slow to recognize the industrial implications of these allocations, but now there is a sharp awareness of industry's preference for locating new plants—and therefore jobs—around lively, productive research facilities. These not only provide a pool of nearby consultants but also serve to attract employees who wish to continue their education. As a result, the concept of pork barrel has come to apply as much to the vacuum chamber and the reactor as to post offices and dams. And the legislators on the short end of federal research spending are sufficiently unhappy about the existing situation to feel that they could only stand to gain from an investigation that would illuminate the dispartities. (Curiously enough, the major recipients of the research budget aren't altogether satisfied either, since there is no such thing as enough. Boston legislators, for example, are outraged because NASA has been, at least temporarily, thwarted in its desire to build a $50-million electronics research laboratory there. Insatiability of this sort leads federal administrators to conclude that whenever they locate a new research facility in a congressional district, the political reward is nothing but a lot of enemies and one ingrate.)

With the investigation now authorized, its course will be heavily influenced by an amalgamation of Elliott's demonstrated sense of public responsibility and his rather desperate need for publicity. Elliott's political fortunes are generally considered to have been brought low by the racial turbulence afflicting his home state. He has not rung up a record that would qualify him for honorary membership in the NAACP, but on the other hand, as one acquaintance put it, "Carl has not tried to 'out-seg' the Wallace crowd." In the last election, when all eight Alabama representatives were required to run on a statewide basis because of the legislature's failure to redistrict, Elliott came in eighth, comfortably ahead of number nine (a Republican) but far below the combined G.O.P. state-wide vote. In the same election it was this Republican vote that nearly took the seat of the venerable Senator Lister Hill, who hadn't had even a whisper of Republican opposition since he came to the Senate in 1938. Hill—whose close call is now stamped on the consciousness of moderate Southern legislators—squeaked by with a majority of 6845 out of a total vote of 397,000. It may be offensive to some that principles should yield to this harsh political fact, but in a legislative body where re-election takes precedence over all other values, no one is ready to cast a stone at members who must live with the racial issue. The heroic tales of Pulitzer-prize-winner Kennedy notwithstanding, Congress, as one wit observed, is more inclined to show profile than courage.

Publicity Potential

Inevitably, Elliott's need for getting his name spread across Alabama is going to be helped by the investigation, which is bound to turn up at least some costly duplication and possibly a great deal more. This is something that will not hurt him among conservatives in the less research-minded industries, such as steel and coal, which have lately been lamenting that their corporate and income taxes are subsidizing vast industrial endeavors—such as space—which otherwise couldn't pay their way.

However, whatever Elliott's need for publicity may be, it should be emphasized that he is not approaching the investigation with a bull-in-china-shop attitude. In discussing the investigation proposal on the floor, Elliott referred to the federal government's vast expenditures for research, and then went on to say:

"They are not necessarily alarming figures. On the contrary, it is, on the surface at least, reassuring that we, as a nation, are pursuing the search for knowledge in such a dedicated and determined fashion. The history of all mankind proves that knowledge is power—and when scientific research lags, knowledge stagnates, and civilizations crumble. However . . . it is my strong conviction that it is not enough that we recognize the undisputed need for scientific research by appropriating many billions of dollars to support it. We in the House of Representatives have the constitutional duty to initiate all revenue-raising measures and, by tradition, we also initiate all appropriations legislation as well. It is my conviction that with this duty goes the obligation to ourselves and the taxpaying public to inform ourselves as to how they are being spent, and to assure ourselves that they are being spent wisely and in the public interest. . . . I would think that in any $14 billion enterprise, wasteful overlapping and just plain needless duplication is bound to occur. . . . On the other hand, I would hope that a careful investigation would bring to light such inadequacies and such deficiencies as may exist in our research programming. . . . In this connection, I would want to see an analysis showing those areas of maximum and minimum research allocation, and the reasons for preferring one area over another. . . ."

A critical matter for the course of the investigation is the quality of the staff it will employ. Technical staffing is a problem that has baffled and frustrated Congress for years, and Elliott himself acknowledges that it will be extremely difficult to employ persons who will, first of all, be able to fulfill the committee's ambitious objectives and, perhaps even more important, command the respect of both Congress and the scientific community. The difficulty of obtaining technically trained staff personnel arises from the fact that Congress provides, by and large, an inhospitable atmosphere for the scientist. Lawyers, political scientists, journalists, and economists find that congressional staff service suits their professional interests and benefits their careers if they choose to move on. But the pro-

ductive scientist isn't helping his own career if he takes time out for a year or two of congressional experience. Furthermore, with all respect to the flourishing stilleto art in campus and laboratory, the mores of Congress, the atmosphere of politics and the addiction to power—regardless of what it is used for—are frequently offensive or at least puzzling to the scientifically trained mind. (Recently I was in the company of a young scientist when an aide to a liberal Republican Senator commented that, if Goldwater were nominated for President, the Senator would probably endorse him politely and then disappear to Europe for the duration of the campaign. This seemed eminently sensible to the politically employed persons in the group, and it stirred no comment. But the scientist was understandably astonished.)

Elliott, in his quest for a staff director, is starting with the hope that he can hire a "top-notch man" who has had no direct connections with federally supported research. This, like the whooping crane, is a rare bird, not quite extinct but close to it, and it is likely that he will change his standards as the quest goes on. In addition, Elliott hopes to engage the services of "panels of experts" to serve 2 or 3 months on particular phases of the investigation. Aides to Elliott say that the National Academy of Sciences will eventually have to be approached for advice, but Elliott himself isn't too keen on this, at least at this point. Like many members of Congress, he doesn't have too clear an idea of just what the Academy is—a testimonial to the Academy's success in acquainting the Congress with its functions. But if he is as devoted to a straight investigation as he appears to be, it is hard to see how he can avoid seeking the Academy's close cooperation.

In any case, despite the mixed bag of motives that inspired and shaped the investigation, Elliott is approaching the task with a sense of responsibility that commands respect and cooperation. The same, however, cannot be said of all his committee colleagues. It is possible, though not likely, that the committee will, in the end, perform a long overdue and much needed service, one that will benefit both Congress and science. But it is also possible, and quite likely, that its final report will justify the observation that a camel is a horse designed by a committee.

—D. S. GREENBERG

Civil Defense: Housing Reverses Direction and Approves Fallout Shelter Program, Sequel Pending

The House of Representatives last week voted to authorize $190.6 million for fallout shelters in public buildings and nonprofit institutions, an action which only a rash prophet would have prophesied when this session of Congress began.

During the 15 years of the cold war, Congress has never enacted a major shelter construction program, and in taking a substantial step toward such a program the House appeared to be changing course sharply. For only last spring, following the lead of some skeptical and influential members, the House forced a reduction to $15 million of a $61-million supplemental appropriation request for a survey and stocking program for shelter space in existing buildings [*Science* **141**, 340 (26 July 1963)].

The bill (H.R. 8200) voted last week would provide $15.6 million for shelters in existing or new federal buildings and $175 million in grants to incorporate shelter space in buildings owned or to be built by state and local governments or by nonprofit institutions such as hospitals. Proponents of the bill say that it will finance 11 million shelter spaces in addition to the 70 million spaces already identified and expected to be made ready for use as protection against radioactive fallout.

The new civil defense bill conspicuously lacked most of the familiar spurs and incentives to legislative action.

There was certainly no upsurge of grassroots sentiment in support of the bill. Legislators' polls of their constituents, as a matter of fact, have consistently shown majorities against a major shelter program.

The lawmakers were hardly enticed into approving the measure by the prospects of pork-barrel premiums for their districts, since the measure provides essentially for minor reconstruction in existing buildings and adaptations in construction of planned new buildings in order to provide fallout protection.

The administration, on the record, backs the program, but the President made no special appeal and the White House's outriders made no forays on Capitol Hill in the cause of the civil defense bill, and it was assumed the administration is husbanding its influence and energies for the bigger trials over tax and civil rights legislation.

House acquiescence in voting the shelter measure seems even more out of conformity with past behavior on civil defense legislation because no international crisis looms and the legislators are much less uneasy these days about Damoclean warheads than they were during the Berlin or Cuban crises.

Furthermore, it is rather surprising that a new measure costing $190.6 million was passed on a voice vote—by an estimated 2- or 3-to-1 majority—in a big budget year when economy is a word to conjure with in Congress.

Passage by the House, of course, only takes the bill to a way station on the legislative road to enactment. The Senate has not even held hearings on the measure, and the parallel appropriations process in the two houses still lies ahead. The House Independent Offices Appropriations subcommittee, headed by Representative Albert Thomas (D–Tex.), has completed its hearings but has not yet acted on the bill, and it is this subcommittee which has been the Little Big Horn for shelter proposals in recent years.

The Office of Civil Defense this year is asking, in addition to the funds for the new shelter program, some $151 million to carry on its shelter survey and stocking program and other federal-state-local civil defense activities. No authorizing legislation is necessary for these other civil defense programs, and funds for them will be recommended by House and Senate appropriations committees. If one can judge from past performances, however, the Thomas subcommittee and the House appropriations committee are unlikely to give their blessings to the whole $342.5 civil defense package for fiscal 1964.

Nevertheless, this vote of the House and the altered attitude it represents is worth remarking. The House's action provides a relatively uncomplicated instance of the functioning of the committee system. The House seems to have changed its mind about fallout shelters because an influential Armed Services subcommittee, headed by Representative F. Edward Hébert (D–La.), had its mind changed by testimony presented during hearings. And the new position was endorsed by Armed Services Committee chairman Carl Vinson (D–Ga.),