is usually impossible to obtain, it was generally felt that the House leadership endorsed Elliott's proposal for setting up the committee because it sympathized with his need for some sort of well-publicized activity that might help him in his political struggles in Alabama. Know-nothing antagonists of federal support for research, as well as the most dedicated supporters, agreed that the time was ripe for a careful survey of just what was going on in the government's $15-billion-a-year research and development programs, and Elliott, a responsible and careful legislator who would call the shots as he saw them, nicely filled the requirements for carrying out a disinterested study.

Little Publicity

Perhaps the most ironical thing about the select commitee is that, despite a bit of fumbling at the start, it is turning in a good performance. But it never turned out to be much of a publicity platform for Elliott. It was probably politically beneficial for him to be able to demonstrate that he could get the House to endorse unanimously his proposal for setting up a new committee, but after that was done, the committee's various hearings and publications never managed to throw a spotlight on the chairman.

For this, there is no explanation other than that Elliott—despite the fears of many members of the scientific community—approached his duties in a thoroughly responsible fashion. If his sole intention had been to raise the roof and draw attention to himself, it would not have been difficult to select a few nonsensical ventures that bore a research label and to have gone off on a campaign of righteous indignation. The public, probably in self-defense against the mysteries of science, seems to relish tales of supposed experts looking like thoroughgoing fools, and Elliott might thereby have become something of a folk hero. What he actually did, however, was to conduct a series of low-key hearings, make a few trips to research installations, carefully survey government research programs through questionnaires, and, in general, conduct himself as though he really wanted to find nothing more than what was going on in government support of research. A real question can be raised as to whether he and his staff tried to chew off too much, but, whatever the results, the intentions command respect.

Elliott's decision to take the high road in the investigation of research in many ways complements the decision that cost him the congressional seat that he has held for 16 years. He easily could have joined the extremists in Alabama, fallen into step with Governor Wallace's racist crowd, and safely returned to Washington for another 2 years. He chose, however, to seek something of a moderate course in Alabama's extremist politics. He opposed the civil rights bill when it was before the House, because not to have done so would have made political extermination a certainty rather than a probability. But he went along with the administration on most other matters; he earned the enmity of the conservative bloc in 1961 when he voted to liberalize the House Rules Committee, and he didn't make many friends in Alabama last fall when he described John Birch Society members as "loud mouthed knownothings whom Thomas Jefferson would have dismissed as intellectual nitwits and whom Jackson would have horsewhipped."

Election Loss

In the statewide primary last week he came in ninth, behind a Wallace-supported candidate, in a race for nominations for Alabama's eight congressional seats.

Meanwhile, the staff of the select committee is proceeding with the investigation, and it will soon issue a report, of about 150 pages, on "Administration of Research and Development Grants." (Copies may be obtained without charge from the House Select Committee on Government Research, 900 Independence Ave., SW, Washington, D.C.) During the past few months Elliott was deeply engaged in campaigning in Alabama and actually spent very little time with the committee. Oddly enough, one outcome of the election might be that he will devote a good deal of his remaining term to the investigation.

—D. S. GREENBERG

Technical Aid: Volunteer Group Enables Scientists, Engineers To Help Underdeveloped Nations

One of the differences between the rich and the poor nations is that the poor are often stymied by minor technical problems that were long ago solved by the rich. Several years ago it occurred to a group of scientists and engineers in the Schenectady, New York, area that they might be able to do something about this, and out of their decision has grown a remarkable organization, Volunteers for International Technical Assistance. Stated briefly, VITA is a sort of stay-at-home technical peace corps, composed of about 1000 scientists, engineers, and technical specialists who, without charge, serve as consultants on technical problems that have arisen in the underdeveloped countries.

For example, the Peace Corps, which has come to make good use of VITA, recently sent an inquiry from a volunteer in the Far East who was working on the early stages of a poultry project. What, he asked, would be the best feed mixture from available grain sources? The inquiry was forwarded to a department head at a major school of agriculture, who dispatched a sheet of simple instructions. In another case, an inquiry from a Caribbean island, asking about means of utilizing a good tomato crop, was forwarded to an executive of a food processing firm, who sent seven pages of handwritten step-by-step instruction on the preparation and bottling of tomato juice. Other inquiries have asked for advice on well-digging, construction of simple slide projectors, woodworking, pottery glazing, sewage disposal, water purification, and paper making.

One of the most refreshing things about VITA is its administrative simplicity. To become a member, an applicant simply fills out a form from VITA (1206 State Street, Schenectady, N.Y.), specifying the subject areas in which he feels qualified to serve as a consultant. When inquiries come in—they come from missionaries, government agencies, and a variety of other sources in addition to the Peace Corps—VITA headquarters forwards them to whomever seems to be the most suitable consultant. The consultant replies directly to the inquirer and sends a copy to the Schenectady office. And that's all.

In addition to counseling on specific problems, VITA, under a contract with the Agency for International Development, has prepared a *Village Technology Handbook*, a 169-page volume that contains a wealth of simple, how-to-do-it directions on turning odds and ends of pipes, steel drums, lumber, and, other cheap materials into useful de-

vices for rural communities. One section, for example, provides plans for building a 30-gallon-per-minute hand-operated irrigation pump with simple tools, from galvanized iron, barrel metal, wire, and wood. Another tells how to convert a steel drum into a boiler for purifying water. There are plans for constructing latrines, seed and grain cleaners, bamboo poultry houses, and simple concrete structures.

VITA, which is now headed by Benjamin Coe, a chemical engineer at General Electric's Waterford, New York, plant, has chapters in Morgantown, West Virginia; Rochester, New York; Santa Barbara, California; and New Holland, Pennsylvania. It also has an extremely active affiliation with the Institute of Food Technologists, which handles virtually all inquiries involving agriculture and food processing, and with the Engineers Joint Council.

—D.S.G.

ACE Study: Higher Education's Aloofness From "Occupational" Education Seems To Be Thawing

American higher education is suffering a mild attack of social conscience over its relative noninvolvement in postsecondary vocational and technical education.

In part because of the variousness of such education, a real vagueness has existed over jurisdiction and responsibility. The term "postsecondary vocational and technical education" attaches to no specific curriculum or type of institution and denotes on the educational map a sector lying in an undefined border area between high school and higher education.

The new interest on the part of colleges and universities in this kind of education seems to derive directly from recognition of the profound effect technological change is having on society. To oversimplify, it is now widely accepted that the undereducated become the unemployed. Only 20 percent of students go through college, and the dropouts, the delinquents, the low-skilled unemployables and career welfare cases are drawn largely from the other 80 percent.

In examining the system which it has helped to form to see how it can help create broader opportunities in the changing organization of society, higher education has understandably been attracted to postsecondary education where, by closeness, it can claim competence, and where the demand for graduates now exceeds the supply and shows promise of continued growth.

Seminars and symposiums on the general subject of automation and social change have abounded in academia for several years, and it is fair to say that the collective consciousness of the scholars is troubled not only by present difficulties and dislocations but by extrapolations of future ones.

One of the prophets most honored by quotation and imitation is Daniel Bell, Columbia University sociologist and a former labor editor of *Fortune*, who drew a convincing and intimidating picture of what is coming, barring war, in a paper called "The Post-Industrial Society."

Dispossessed Groups

Bell depicts a sort of intellectual's New Jerusalem in which dominance in the society has passed from businessmen to productive researchers. As technical competence becomes the criterion for status and affluence, Bell sees the creation of groups of "dispossessed" among those who have lost out in the race. Along with other informed observers he sees, for example, the relative economic position of the Negro deteriorating in coming years, whatever happens in Congress and the courts, because, unless drastic measures are adopted, educational opportunities for the Negroes are not likely to keep pace with technological change. This is why the second part of the civil rights rallying cry of "freedom and jobs" may prove to be the hardest to achieve.

The importance of gearing education to social change and creating the right kinds and amounts of "human capital" —which concerns many economists these days—has been one of the main factors that has influenced higher education to forsake its own version of splendid isolation in recent years and begin to think and act more as if it were a part of the nation's total education system.

One symptom of the attitude is a new study, *Man, Education, and Work: Postsecondary Vocational and Technical Education*,* published by the American Council on Education (ACE), the association which comes closest to being the voice of American higher education, or at least of college and university administrations.

The report, based on a year-long study backed by ACE, was written by Grant Venn, former president of Western State College, Colorado, who has returned to school work as superintendent of schools in Wood County, West Virginia; he was assisted by Theodore J. Marchese, Jr., who had senatorial staff and Peace Corps experience before joining the ACE staff.

A keynote in the report is struck by a reference to higher education as "part of a whole system of education that is failing to prepare individuals for a new world of work in an advanced technological society."

The larger part of the study is devoted to a useful history of vocational and technical education in the United States and to a survey of the present situation.

Venn's central argument is that the bias of the American school system has been academic and not "occupational" in the sense that the schools continue to be decisively influenced by their original mission of preparing students for college rather than for jobs, even though the majority of students have not, since the early 1900's gone on to college.

European Leadership

From the middle of the 19th century on, it seems, the major Western European nations were much more active in providing schooling in occupational skills—particularly technical skills—than the United States, a rather odd note in view of the American reputation for practicality.

A start in a new direction was made with passage of the Morrill Act in 1862, which created the land-grant colleges to foster the agricultural and mechanical arts. But it was not long before the training, which was aimed at what would be called middle-level manpower today, was upgraded into engineering and agricultural science, leaving a vacuum once more in occupational training.

Nearly two generations passed before the manual training movement of the late 19th century was finally to produce the vocational education program at the secondary school level that was launched by federal legislation during World War I (*Science*, 14 June 1963). And it is significant that the advent of vocational education was delayed by a long wrangle among labor, manage-

* Available from the publications division, American Council on Education, 1785 Massachusetts Ave., NW, Washington, D.C., $1.50.