

attitude of a minority of faculty members, who say there are no such things as truths, only politics; and the situation in some institutions, where the student simply pays and, in effect, is told to "go do what you want to do."

Many of the questions the commission has in its sights are sensitive inter-

nal questions for higher education. The report on governance, for example, will, among other things, address the problems of tenure and unionization of faculty and staff. The commission may find itself treading on the toes of some who were its natural allies in its earlier endeavors.

Institutional aid and greater educational opportunity are ideas whose time the commission may have hastened in coming, but in the next year and a half the commission will be dealing with important issues on which it could find itself more controversial and less effective.—JOHN WALSH

Chile: Planning for Science Faces Obstacles Old and New

Santiago, Chile. Just over a year ago, Chile elected Dr. Salvador Allende Gossens, 63, active in politics for 40 years, successful in his fourth attempt to win the presidency, and the first Marxist elected to power in Latin America.

Allende's coalition reads like a roll call of names calculated to infuriate the Right—Socialists, Communists, Radicals, Christian Democrats, Social Democrats, and Independents—and his actions since taking office have been perfectly in keeping. He has nationalized banks, copper mines, textile works, breweries, and other businesses; expropriated more than 1300 farms and handed them over to the workers; expanded the social services; and established relations of great cordiality with Cuba, China, and the countries of Eastern Europe.

So far, science and technology have not played a major part in Allende's plans, or in his speeches. Chile has little enough science to start with, and even less technology—and it seems almost presumptuous to talk of planning when the plans concern so little. Nevertheless, the application of science and technology are crucial to the success of the Chilean experiment, and in organizing them Allende does not have to do very well to improve on the performance of most Latin American countries and on that of his own predecessors in La Moneda Palace. It can be argued that science policy-making is *more* rather than less important to countries with limited resources, and hence there is very little room for error.

Chile's budget for research and de-

velopment adds up to about \$30 million a year (\$27.6 million in 1968, the latest year for which figures are available). This amount represents between 0.4 and 0.5 percent of the gross national product (GNP), a calculation which puts Chile clearly among the underdeveloped countries of the world. Expenditures on R & D are growing at a rate of about 15 percent a year in real terms, and much faster when measured in escudos, because of roaring inflation. At least three-quarters of Chile's science is in the universities, of which easily the most important is the University of Chile, based in Santiago. There are seven other universities, six of them private; but all get the bulk of their funds from the state.

Autonomy Defended

From these few facts the problem of making science policy effective in Chile can be simply stated. For the most part, Chilean research and development goes on in universities which jealously and passionately preserve their autonomy from the state. Although they depend on the government for funds, they recognize no obligation to it and made few efforts to use their courses or their research projects to further national goals. This is a roadblock that stands in the way of any sensible scientific planning in Chile; thus one cannot meaningfully talk of science policy without including a discussion of university reform as well.

Allende inherited from his predecessor Eduardo Frei the beginnings of a system for planning science and tech-

nology. The central body is the Comisión Nacional de Investigación Científica y Tecnológica (CONICYT), an autonomous organization with the task of promoting, planning, and organizing science and technology in Chile. It has a president, a council of 48 scientists (soon to be increased), and a secretariat which has grown rapidly from 5 in 1969 (when CONICYT was formed) to 120 today.

The rapid growth of CONICYT suggests that it may be just another blossoming Latin American bureaucracy, producing volumes of paper for other bureaucrats to file. While there may, unfortunately, be some truth in this judgment, CONICYT does have real functions to perform. It administers foreign scholarships (at the rate of about 1000 a year), a very important element in the training of Chile's scientific manpower. It controls a tiny budget of about \$300,000 a year, used to fund research projects in universities and government laboratories. It is in the process of organizing a central clearinghouse for scientific and technological information. But its most pressing task at the moment is to organize a massive Council of Chilean Scientists to help it hammer out a Chilean science policy. Allende wants everybody to participate in Chile's revolution, especially the workers—and the council is the formal mechanism to draw Chilean scientists into the planning of science policy.

The idea of the scientific council is said to be Allende's, written in his own handwriting on the copy of CONICYT's revised charter, which came to him for signature earlier this year. The added paragraph orders CONICYT to set up the council, and formally decrees that the universities shall be the majority participants and that each one shall be represented by a number of delegates proportional to the amount of research it undertakes.

The device—designed as it seems to

preserve the existing balance of power—probably means that the council will produce little original thought. The likelihood is that the final recommendations (if any) will be vague and anodyne. The program produced by CONICYT to the President's draft provides for a series of regional meetings to begin with, followed by the national council meeting of 5000 scientists. They will discuss such things as the state of Chilean science, what research Chile needs to help industry and agriculture, the supply of scientific manpower, and the organization and legislation required to develop Chilean science. The most that observers in Santiago expect from the council is an endorsement of CONICYT's list of priority areas for research. In view of Chile's economic position, most of these are fairly obvious—marine science, food technology, copper metallurgy, pulp and paper technology, oil technology, and, less obviously, mathematics.

Major Shake-Up

Since the election, the secretariat of CONICYT has experienced a major shake-up. When Chileans elect a new government, they eject from office many of the appointees of the last administration, and into their places the new government puts its own men. The process is familiar enough in the United States; but in Chile it is carried to the point of absurdity. Thus all the top officials of CONICYT down to at least the fourth or fifth level are new appointments, and the same is true of most other sectors of the government. Much depends on the quality of the new men, and my impression is that in science Allende has made some good appointments, some poor ones, and a few that are difficult to justify by any criterion at all save loyalty to the party. Some of these in the last group are already falling by the wayside, pushed out of office by colleagues who recognize their incapacity.

The new president of CONICYT is Victor Barberis, a pediatrician, and its new executive secretary, a member of the Communist Party, is Claudio Iturra. This must qualify as one of the odder appointments, because Iturra, although previously a university professor, in fact taught history.

Iturra is vague about the direction Chile's science policy will take under the new administration. He says that Chile spends too little on science, and that what it does spend is poorly employed.

"With proper planning, we could make much better use of it." He sees no difference between the planning for basic science and for technology—indeed he refuses to make any distinction between them. But he agrees that the role of the universities is one of the most important issues CONICYT faces, and says that this will be one of the main subjects discussed at the scientific council. "We will try and use persuasion," he says, "but if CONICYT can manage to set up a special fund to buy scientific equipment, our persuasion may be more effective. Then we will be able to assign so much to each university to buy their equipment." With dollars short in Chile, this device could turn out to be more than it sounds in coordinating university activities.

The improved planning that Iturra hopes for still seems a distant prospect. CONICYT can exert very little direct influence over the universities, which dominate Chilean science. José Miguel Insulza, head of operations at CONICYT (and a member of the Christian Marxist element in the coalition) believes that only a small part of the universities' budgets actually finds its way into R & D. "At the moment, the universities get money for research from three sources," he says, "either direct from the government as part of their operating grant, from individual ministries who may commission research projects, or through the small research budget of CONICYT. This is not a very sensible pattern—we should channel more funds through CONICYT. Eventually I think CONICYT should try to coordinate the block grants to the universities—through we don't intend to take away university autonomy."

But a science policy that waits on the universities may have to wait a very long time. Chile's major university, the University of Chile, is based on the "Napoleonic" structure of strong independent faculties headed by powerful professors determined to preserve their position. While the other Chilean universities are different, they all lack the North American tradition of direct involvement with the community. And in the University of Chile, at least, an attempt to move toward that concept has sparked off violent argument.

Reform plans for the University of Chile have been around for at least 3 years, but we need concern ourselves only with the most recent, that supported by Allende's Popular Unity

Coalition. This proposes that the present 15 faculties be reduced to a more manageable number by merging several together. The new Faculty of Health, for instance, would incorporate the existing faculties of medicine, dentistry, and veterinary science. The need for some such reform is evident; at the moment, for example, there are four separate faculties of the university within which it is possible to learn chemistry—the faculties of Science, Physical Sciences and Mathematics, Medicine and Chemistry, and Pharmacy. Four separate chemistry departments using the same kind of laboratories and spreading the teaching talent thinly are a luxury an underdeveloped country can hardly afford.

New Reform Plan

The current reform plan, supported by the Left, recently gained a small majority on the university's governing council and hence became official university policy. But the rector of the university, Edgardo Boeninger, supports an alternative plan, put up by the Christian Democrats, which would divide the university into four separate institutions. He is supported by the Right and by various professors who would lose their absolute powers if the left-wing reform plan goes through. In recent weeks the university has been disrupted by a series of demonstrations by both factions; some violence has been done to individuals and to property, and the School of Law has been continuously occupied by students who oppose the reform. (As an ingenious twist, the occupying students demand that passing cars should signal their support of the occupation by sounding their horns. Those that fail to do so have bags of cement thrown at them.)

The violent feelings inside the university have now spread to the streets. Boeninger, together with some Christian Democrat deputies and sympathetic students recently invaded the office of the Minister of the Interior, José Toha, to demand a referendum throughout the university to decide the issue. Tear gas bombs were then exploded by the demonstrators and the government replied by issuing writs against Boeninger and others. The explosive situation at the university is meanwhile being exploited by the Right, whose members are talking freely (but not very convincingly) in terms of a full-scale civil war in Chile.

In other universities the situation is not quite so gloomy, and examples can be found of useful cooperation between the government and the universities. The Catholic University of Chile, for example, has been commissioned by the Transport Ministry to do a study of transport in the Chilean South, down near the southern tip of the continent. This contract, worth about \$15,000,

came about simply because the new head of the planning department at the ministry, Gabriel Rodriguez, had previously been a teacher at the university and knew the people there.

Unfortunately such contracts seem the exception rather than the rule. In the short term, at least, the Chilean universities offer few hopes of producing a coordinated science policy to assist

in Chile's development. There are two possible alternatives—the government's own laboratories and that old standby, international technical assistance. The role they can play will be discussed in a subsequent article.—NIGEL HAWKES

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Community Mental Health Centers: Storefront Therapy and More

Community mental health centers have been subjected to a good deal of criticism (*Science*, 10 December), both for failing to fulfill the rosy promises made at their inception and for stepping outside of traditional concepts of professionalism in attempting to fulfill them. Bernard Holland of Emory University, a member of the National Mental Health Advisory Board, thinks the movement has serious organizational problems, but argues that, in an experimental program such as this, "you're lucky if anyone does a hell of a lot in less than 5 years."

Science visited two relatively new centers in Atlanta that, in their vastly differing ways, seem to have discovered successful modes of operation.

The 16-month-old South Central Community Mental Health Center, which caters to a mostly poor and black population, had its genesis in an Office of Economic Opportunity (OEO) neighborhood health center that opened in 1966. Originally funded through OEO to serve only one-third of the present catchment area, it is now administered by the county health department through Emory University. It remains organically related to the OEO center, and its main building, a remodeled church wing, is across the street. Money was obtained from NIMH (National Institute of Mental Health) for staffing; support also comes from a large number of public and private sources, including federal Model Cities funds.

In addition to the administrative center, which will soon house a day hospitalization program, there are five satellites spread through the catchment area of 80,000 people. Between 1200 and 1500 patients are seen each month. Each satellite has the part-time services of a psychiatrist, a psychologist, and mental retardation workers, as well as the full-time services of a social worker, a mental health technician, and two assistants, drawn from the community and trained at the center.

Alcoholics are referred to a center-operated halfway house in the neighborhood (the county's 8-day detoxification program is useless to most alcoholics, since a 48-hour drying-out period is required before admittance). The center has no drug-treatment facilities, but hopes to develop a comprehensive treatment program with assistance from the state's newly established narcotics treatment program.

Services Tailor-Made

According to psychiatrist Peter Bourne, planner and initiator of the center, "The specific intent of the original design was to allow each center to respond to the highly localized needs of subcommunities." As a result, he says, it has been more successful than most centers in making itself an indispensable part of the community.

The mental health outposts are widely known throughout their neighborhoods because of the variety of activities they

promote and the outreach work done by their staffs, including home-visiting and the seeking out of troubled people who have been brought to their attention by friends or other agencies. The satellites have casual and friendly atmospheres. Neighbors drop in frequently to chat with staff members. Each outpost has a particular orientation, which is determined by the character of the community it serves. One devotes a great deal of time to children's services; another, a storefront near the local pusher's haven, sees a large number of drug addicts.

Staff members are involved in a variety of "preventive" activities aimed at helping people overcome their sense of powerlessness. One psychologist is planning to conduct a course teaching residents how to organize themselves politically: "the system has been using them all these years—now they have to learn how to use the system." Another satellite, housed in a stuffy ground-floor apartment of a public housing development, is trying to promote a sense of community through such neighborhood projects as a weekly ice cream sale and the establishment of a cooperative food store where residents can buy fresh vegetables wholesale. A citizen's police patrol is also being planned.

The treatment of individual problems, however, is still paramount. One storefront social worker told this story of community psychiatry in action. A man came in, obviously incapacitated by depression. A year before, he had witnessed a violent quarrel between two men, in which one had been severely beaten. The assailant dropped out of sight and the victim accused the patient of the crime. The latter spent 9 months in jail and was only released when the victim finally came forth to unburden his conscience. On regaining his freedom, the patient found he had lost his job, had a criminal record, and had