ban sections accounted for nearly all of the total. The urbanization of blacks continued at a rapid rate, with particular increases in the larger central cities. Substantial displacement of whites by blacks occurred in a number of the SMSA's, especially the largest ones. The rural population outside SMSA's declined; that within the SMSA's—that is, within reach of the central cities—increased. Three states lost population. Altogether, about 40 percent of all counties lost population. About 75 percent of all counties contributed migrants to the remainder of the country. Although migration was an important element in the differential growth rate of states and of areas within states, in most areas the bulk of the increase was due to the excess of births over deaths.

Only part of the 1970 census results have become available. The full data will provide information on changes in occupation, education, journey-to-work, and related matters, thus contributing to a more complete view of the changes that have been and are occurring in American society. That information is currently being issued and will be completed during the latter half of 1972.

Notes

1. The *Current Population Survey* is an ongoing survey conducted monthly. In the course of a year, it produces statistics on a variety of topics; the results are published as a series of reports by the Bureau of the Census, Washington, D.C.
2. An SMSA consists of a city of 50,000 or more and the county in which it is located, plus adjoining counties that meet certain criteria of metropolitan character and are closely integrated with the central city, as through commuting, for example. (In New England, the basic units are towns rather than counties.) Since an SMSA consists of whole counties, it includes urban and rural population. Much of that urban population lives outside the central city but within the boundary of the SMSA. The SMSA also includes rural territory and, therefore, rural population. There is substantial urban population outside the SMSA's.

NEWS AND COMMENT

Professional Societies: Identity Crisis Threatens on Bread and Butter Issues

Perhaps there was a time when scientific and engineering societies dealt solely with traditional professional and technical issues. But even if this ever was true, it no longer is. Protest against the Vietnam war, charges of discrimination against minority groups, and even a bit of tomato throwing at annual meetings have been known to ruffle the solemnity of their deliberations.

Possibly the most far-reaching challenge to U.S. professional societies in recent years, however, has been the demand that they act in some decisive fashion to alleviate rising unemployment and underemployment among the membership. An article last week reported on the potential of unionization as a response by scientists and engineers to the current recession. This week's piece concerns the response of the professional societies and the charge by critics that they have failed to be of substantive help.

Science contacted spokesmen for the following groups: the National Society of Professional Engineers (NSPE) with 67,000 members, the American Society of Mechanical Engineers (ASME) with 54,591 members, the Institute of Electrical and Electronic Engineers (IEEE) with 152,204 members, the American Physical Society (APS) with 29,152 members, the American Chemical Society (ACS) with 111,589 members, the American Institute of Aeronautics and Astronautics (AIAA) with 25,000 members, and the American Geophysical Union (AGU) with 10,000 members. Also contacted were spokesmen for federations of organizations, such as the Engineers Joint Council (EJC).

The dominant impression gained from the discussions was one of disunity and disagreement. There is debate on how much and what kind of political activity to undertake; there is debate on whether society leadership is so identified with management that it is at economic loggerheads with the hard-pressed members; there are myriad definitions of "professionalism." Last but not least, there are various stories about the nature of the economic crisis —whether it is temporary, permanent, or cyclic.

The following, necessarily spotty, list offers some samples of the activities of the last 3 years which the professional societies have engaged in and which critics—even from within these organizations—decry as tokenism.

► Almost by definition, the election earlier this year of reform advocate Alan C. Nixon to the post of president-elect of the American Chemical Society was a mind- and organization-bending act. Nixon ran for office on the platform that the chemists badly need economic assistance. On balance Nixon is critical of unionization, and he believes that ACS can steer a "professionalist" course "somewhere between unionization and laissez faire."

Since his election, Nixon's main reform has been shaping a Professional Enhancement Program (PEP). By having members each contribute $10, ACS can raise $1 million for professional activities, which might include, for example, loans, free short courses for the unemployed, or establishing professional employment contracts (see *Science*, 24 December 1971, and 14 and 21 April 1972). Prior to that time, ACS's response to the employment situation was traditional; many committees were established, surveys were taken, and a placement service, of sorts, was set up.

► The American Physical Society, which, like ACS, has traditionally been led by academics, was also cautious in its response. The Economic Concerns Committee last year, under Lee Grodzins of M.I.T., made an extremely comprehensive and detailed survey of the employment patterns of members. Placement services, new committees, and drops in advertising revenue in APS journals have also been signs of the times. The APS formerly had a representative in Washington, but decided to use its limited funds to hire a manpower expert for its New York headquarters instead.

► The American Geophysical Union,

although it has surveyed its members, has not been flooded with demands for change. According to staffer Leonard Levin, "The members don't want us to broaden the appeal of meetings or do anything else. I think they feel this might be best done through some other society." However, Levin points to one way in which AGU is typical of other societies, "Our office staff is oriented toward running large groups, editing, and copyreading journals. Expanding into manpower requires outlays of money and different skills."

► As for the engineers, their umbrella group is the Engineers Joint Council, with 36 affiliated societies which total some 430,000 members. According to director Carl Frey, EJC participates in a program which matches job openings with engineers' résumés, publishes a learning resources directory which can serve as a guide to engineering refresher courses, and made an employment survey recently with the National Academy of Engineering and the National Science Foundation.

► The American Institute of Aeronautics and Astronautics has received federal funds to operate job placement programs, of which the most successful has been the Volunteer Engineer, Scientist, Technician group (VEST). This organization now operates in half a dozen areas of the country (the Wichita program which scans for jobs is called KANVEST).

► The American Society of Mechanical Engineers announced 2 weeks ago the appointment of William P. Miller, an Air Force lieutenant colonel, as its Washington representative. The ASME also set up, a few years ago, a goals program to decide what ASME should be and do. In 1970–1971 and 1971–1972, ASME waived dues for unemployed members. A number of local sections have job referral programs.

► The Institute of Electrical and Electronic Engineers in New York has just appointed Ralph Clark, a retired former staffer of the Office of Telecommunications Policy and a former director of Stanford Research Institute, as its Washington representative. In addition, IEEE members in response to a recent questionnaire advocated, by a ratio of 2.6 to 1, that IEEE become involved in "nontechnical"—that is economic and political—matters.

► The only established engineering lobby group is the National Society of Professional Engineers, a central organ for all state licensing societies across the country. NSPE represents 67,000 engineers, or about 5 percent of the profession. But other society spokesmen say NSPE's effectiveness has been limited by the relative autonomy of the state professional engineering groups. Last year, however, NSPE changed its membership rules so that members of other groups could become eligible for NSPE's retirement plan and other benefits. Three other engineering societies, along with IEEE, have linked themselves to NSPE this way, making a whopping 323,000 professionals eligible for these aids.

Schizophrenic Societies?

The union advocates who conversed with *Science* had ready labels of these efforts as token and feeble. Their analysis was simply that the officers of the societies are drawn from management and have opposite interests from the society members. One said, "They are trying to embrace both management and employee interests, and the effect is a stalemate which results in do-nothing policies. It's unprofessional and damaging to gloss this over. The societies are schizophrenic."

While leaders of the professional societies tend to agree with the premise of this analysis—that the leaders are those who have made it—they disagree with the conclusion. The APS's president Philip Morse of M.I.T. says "One can just hope that they [the leaders] are alive enough to take part in the new developments . . . you have to have some youngsters who don't have jobs on your committees." The ACS's new president-elect, Nixon, who himself is retired and hence free from the employer-employee conflict, says, "I'm working to get more grass roots people at the heads of professional societies."

However, placing more youngsters or grass roots people into leadership positions raises a second, bigger issue: whether the current turmoil will make permanent changes in the characters of professional societies. The director of ACS's office of chemistry and public affairs, Stephen Quigley, says of the chemists, "What is evolving in ACS is a desire to put professional and public activities on an equal level with scientific and educational activities." Taking a more conservative view, Morse says, "It's my personal opinion that the society and the majority of members of the society would rather have a scientific society. . . . There's no question but that when you add these other services—gather large amounts of money and do other things—you're bound to transform the flavor of the society." But a union spokesman who—like all union spokesmen—considers the professional societies essentially hopeless, quipped, "You can't change a zebra's stripes."

Those who advocate a change of stripe, however, talk about a new set of "professional" concerns. But there seem to be as many different definitions of "professionalism" as there are society spokesmen; hence the term seems to be more medium than message. For example, the editor of *Chemical and Engineering News*, Patrick P. McCurdy, thinks that professionalism is an elite, public service calling. In an 8 May editorial, McCurdy cited the definition of former Supreme Court Justice Louis D. Brandeis: A profession is, Brandeis said,

> ". . . an occupation requiring extensive, preliminary, intellectual training pursued primarily for others and not merely oneself and accepting as a measure of achievement one's contribution to society rather than financial achievement . . ."

Some think professionalism concerns public service instead of monetary gain; but one young engineer, agitated by an apparent correlation between the elevated calling of public service and rock-bottom salaries, queried, "Is being professional and being an obsequious ass just about one and the same thing?"

Another camp defines "professionalism" as serving primarily economic interests. John Suttle, consultant to the executive director of ACS, says, "It means you're looking out for the members' welfare as an employee. It's the employee aspect versus the technical aspect. You're looking out for his welfare apart from his technical competence."

The lobbying effort, mentioned earlier, has not achieved much focus either. There is one new, very eager organization, Political Action Committee for Engineers and Scientists (PACES), which was started in October 1971 to lobby in Congress for portable pensions and other issues. The PACES' national director, Harold Ammond, says that membership is now at 1500. He hopes to have 50,000 members by the end of the year in order to build muscle on Capitol Hill. Ammond is proud, for example, of having produced, on about 3 days notice, unemployed or underemployed scientists and engineers from various geographic regions to tell their stories to the Subcommittee on the National Science

Foundation of the important Senate Committee on Labor and Public Welfare. (One of the witnesses was engineer Charles Laible, who designed the umbrella-shaped antenna which transmitted pictures from the Apollo 15 lunar rover. Laible testified that he had received his termination notice from RCA exactly 3 weeks before his antenna began transmitting signals from the moon to Houston.)

However enthusiastic, PACES is small and young—and the big, old, professional societies are only getting their feet wet in the lobby business. As already mentioned, a number of them are sending "representatives" to Washington, part time, with the task of somehow lubricating the machinery of power in their society's interests without jeopardizing their tax status. However, many, such as the ASME, are discovering that tax status, in the educational, and nonprofit category, is not as great a curb on political activity as was feared. "We thought we had a rigid fetter," says Edward H. Walton, ASME's director of planning. "But it's not all that bad."

But there are critics, too. Another were really serious about going ahead engineering society staffer says, "If we with this thing, why are we going about it in this way? If we really wanted to have an effective lobby, the last thing we'd do is send a retired guy down there part time. They [the society representatives] will be all stumbling all over each other. We'd get a single, well-paid lobbyist. These aren't disciplinary problems."

Perhaps the most ominous disagreements, however, are on the nature of the crisis. Just as a doctor's cure is determined by his diagnosis of the disease, the societies' responses have been muddled by arguments over whether the employment problem is over, cyclic, or permanent. Some society spokesmen said confidently that the situation was "bottoming out" (and surely, with their historical interest in promoting their fields, optimistic views are a temptation). A physicist active in APS, however, says it is cyclic. "Things are going to get better. But after that they'll get worse again. The cyclical nature of the funding for research and development has not been dealt with. The cyclic system is inherently unstable." He believes that the professional societies have failed utterly to come to grips with this. Another society critic, this one from the engineering side, said, "My own feeling is that much of the response has been in the secret hope that the problem will go away quickly and we'll return to the old pattern."

ACS's Suttle is one of a number of professional society spokesmen who believe that the current conditions are fairly permanent. "These conditions are not going to go away," he said. (The ACS's latest survey shows 24 percent of all chemists under 25 as unemployed, and an overall un- and underemployed rate for ACS members of 7.2 percent.) "It's more serious than was initially thought. . . . Things just aren't going back to the way they were in 1968."

It may, however, be of interest that, taken together, the memberships of the scientific and engineering societies, whose spokesmen were contacted for this article, totals 449,536. According to the Bureau of Labor Statistics, there are a total of 1.6 million engineers and scientists in the United States. Together, the spokesmen for this article represented perhaps one-quarter of the U.S. engineers and scientists. If they had all gotten their heads together a few years ago, it is possible that the lot of the U.S. engineer or scientist could be somewhat better than it is today.

—DEBORAH SHAPLEY

Turks Meeting on Boardwalk: Debate on Role in Political Arena

Around May Day every year, academic medicine holds a reunion on the boardwalk in Atlantic City. It has been doing so ever since the spring of 1911 when the Association of American Physicians abandoned Washington, D.C., as the site of its annual festivities and assembled instead in the sun parlor of the stately old Marlborough-Blenheim. Association historian James Howard Means writes, "In the years to come this close juxtaposition of meeting place and boardwalk unquestionably greatly extended the opportunities for intimate companionship between members, and their ideas flowed more freely in the complete relaxation engendered by sunshine, sea, gentle exercise, and soft fresh air. . . . All the tensions of the nation's capital were eliminated."

What began as an intimate assemblage of companions has grown, not surprisingly, into a considerably larger affair at which three societies, not one, gather the troops at the spacious Chalfonte–Haddon Hall a few blocks north of the Marlborough for meetings that Means has described as being "as intimate as a professional baseball game." As for sunshine and soft fresh air, it is true that this year it did not rain *every* day and that, on the boardwalk itself, polluting exhaust fumes came only from a few cruising police cars. As for the tensions of the nation's capital, it is clear that they increasingly are inserting themselves into the meetings as clinical investigators wrestle with the question of whether, and to what degree, they should become involved in the formulation of federal policies that are so significantly affecting the course of research and the professional lives of the academic scientists.

Nevertheless, in spite of the size and the unwelcome intrusion of political issues, there remains an aura of clubbiness about the meetings and a sense that now, as in the past, this is where much of the internal business of academic medicine is conducted. For anyone who is, or wishes to be, "someone" in this profession, Atlantic City is the place to be in early May.

The clinical meetings are held by the American Federation for Clinical Research (the youngest, largest, and most democratic of the three societies), the American Society for Clinical Investigation (ASCI), and the Association of American Physicians (AAP). Deans,