California: As Enrollment Bulge Hits Higher Education System, State Banks on its Master Plan

California has by far the biggest and probably the most envied publicly supported system of higher education in the United States. One question likely to occur to the interested outsider is How and why did it get that way?

As with any tax-financed system, the short answer is that the people of California have been willing to pay for it. Explaining this willingness is more difficult. But it seems that the tripartite organization of public higher education —university, state colleges, and junior colleges—comes close enough to satisfying the voters' idea of the needs of the common weal, and offers something for enough people, to have given education an impressive run of good luck with budgets and bond issues.

The University of California, which is nationally the best-known element in the three-ply system, has the smallest enrollment—some 65,000 students. The state colleges have about 133,000 regular students this year. Approximately the same number attend junior colleges full time, but part-time students balloon enrollment to about 368,000, and if students in ungraded and short-term courses are lumped in, total enrollment in the junior colleges goes over the 400,000 mark.

This Troika in higher education has not run without frictions and strains, and in 1960, in order to insure optimum use of resources and minimize competition, a Master Plan was adopted which defined roles and jurisdictions and set forth a general scheme for meeting future requirements in higher education in the state.

The need for such a plan is written clear in projections showing enrollment in public institutions of higher education in California reaching 1 million in 1975, then doubling by the year 2000.

The Master Plan provides for a different distribution of students as total enrollment grows. State colleges and, particularly, junior colleges would enroll a greater proportion of students. Master Plan projections for 1975 show 289,950 full-time students in junior colleges, 180,650 in state colleges, and 118,750 in the universities, if the institutions can handle them.

While the university is scheduled to accommodate a smaller percentage of students and to draw a somewhat smaller share of the state higher-education budget, it is pretty clear in the Master Plan that the university has protected its own future and heavily influenced the pattern and style of the development of higher education in the state.

The strength of the University of California is attributed by many to an unusual combination of administrative centralization, which permits efficient planning and effective dealings with the state legislature, with a great measure of autonomy in educational policy.

This tradition of autonomy and insulation from political interference seems to have allowed University of California faculty to develop a high competence in research between the wars, a time when some state universities in the Midwest and South were obliged to concentrate on teaching undergraduates and students in the professional schools. It was this experience and achievement in research which enabled U.C. to move into the open fields of government research during and after World War II and to become the university with more federally supported R&D work than any other (total federal grants and contracts at U.C. amount to about $315 million for the coming year).

The Far-Flung University

It is difficult these days to know whether to use the singular or the plural in talking about the University of California. The original campus established at Berkeley nearly a century ago is known familiarly as "U.C." But that tends to confuse things because there is U.C.L.A., which became a general campus after World War I, and also there are four other general campuses in varying stages of growth and two more preparing to accept students in 1965*.

But the modern history of the university must be traced back to Berkeley at the turn of the century, when the easterner and languages scholar Benjamin Ide Wheeler became U.C. president. During the first decade under Wheeler, U.C. began to achieve distinction in research by methods patterned on German-university models. In the sciences this meant fairly authoritarian rule by a senior researcher in each field. About 1910 a different trend was begun under the famous G. N. Lewis, who, as head of the chemistry department, assumed rather a *primus inter pares* role in seminars and departmental matters and launched the tradition which was to prevail in the physical sciences at Berkeley.

At the end of World War I there occurred what amounted to a faculty revolt, which resulted in the emergence of the academic senate as an enduringly influential force in university affairs.

The man who presided over U.C. for nearly three decades of depression, war, and cold war was Robert Gordon Sproul. Sproul became president in 1930, and it was in the next few years that Ernest O. Lawrence and his associates laid the groundwork for the distinguished research in high-energy physics that is still going forward at Berkeley today.

(Sproul retired in 1958 and was succeeded by Clark Kerr.)

Sproul had served as university comptroller and secretary to the Regents during the 1920's, and the best evidence of Sproul's skill as an advocate and of the public's good will toward education is to be found in the record of state support of the university during the hard times of the '30's.

A clear statement of priorities is to be found in an article added to the state constitution in 1933, which said, "Out of the revenue from state taxes for which provision is made in this article, together with all other state revenues, there shall be set apart the moneys to be applied by the State to the support of the Public School System and the State University."

Certainly there are utilitarian considerations involved in the public support of higher education in California. Contributions of university researchers and experts in agriculture, and in forestry and mining, have been widely recognized and appreciated for years, and California is a state where agriculture and the extractive industries are still important.

By stressing community services the university has kept its fences well mended in its relations with the public. University extension work is emphasized, and U.C.L.A. alone has 10,000 night students. University-run labs and field stations dot the map, and U.C. operates agriculture extension service offices in 56 of the state's 58 counties.

Since World War II, the economic benefits of general university activities

* The new campuses and their estimated current enrollments are as follows: Davis, 10,250; Riverside, 2641; San Diego, 283 (graduate); Santa Barbara, 5938. The two campuses scheduled to begin operation in 1965 are Irvine and Santa Cruz. Enrollment at Berkeley is nearing the 27,500 limit set by the Regents, and U.C.L.A. has about 22,000 students now.

have been heavily emphasized. In a pamphlet that the university prepares to serve up its budget to the legislature in appetizing form, a section titled "Impact of higher education on industrial growth" makes these four points:

1) "University graduates are highly productive contributors to the state's economy."

2) "University employment increases income, spending, tax revenue" (the university employs 43,000 people at an annual payroll of about $327 million).

3) "The university attracts new and growing industry to California."

4) "The university brings Federal research funds into the California economy."

Of the total operating budget of $581 million requested for the university for the coming fiscal year, $173.7 million would come from the state, $92 million from the university funds (including fees, gifts, and private grants), and $314.6 million from the federal government.

By far the largest portion of these federal funds is the $236 million in Atomic Energy Commission contracts and grants concentrated in U.C.-administered projects at Berkeley and the Livermore and Los Alamos sites.

Not to be ignored in any analysis of the university's good relations with the public and state power structure is the University Regents. Originally established to govern a single university, the Regents have evolved into supervisors of a statewide system. The board of Regents is made up of eight ex-officio members, who are state officials, and 16 appointive members. A 16-year term of appointment, unusually long for trustees of a state university, is viewed as the basis of their power, which is extraordinary among state-university governing boards. The long term is felt to give Regents time to lose whatever partisan coloration they may have been tinged with at the time of appointment, and to gain genuine expertise in university affairs. The Regents, over a long period, have proved themselves sympathetic to the view that research is an important element in higher education. In recent years they have naturally been closely concerned with expansion. They meet for 2 days each month, and their interest and influence are reflected in every detail of university operations. To cite a minor example, the predominance of tile roofs on university buildings is attributed to Regents' preferences.

Things have not always gone smoothly in Regents-university relations, and the loyalty-oath controversy of the early 1950's was probably the most notable instance of discord. The height of the dispute found faculty activists, the university administration, and the governor on one side and a dominant group of Regents on the other. An end to hostilities on the issue seems to have come not so much through the victory of one side or the other as through the passage of time and the departure of many of the major antagonists from the immediate scene.

Over the long run, however, there is no question that the Regents' combination of experience, ability, and influence in the state has counted significantly in advancing U.C.'s fortunes.

The long era of good feeling between the university and the legislature has also been attributed in part to a former peculiarity of California's political system. Until the 1950's, candidates were permitted to "cross-file" for nomination by more than one party in primary elections, and to this was attributed a blurring of party lines and partisan issues in the legislature.

Bipartisanship Beset

California has changed its election laws to follow more conventional procedures and, as a result, party consciousness has been growing in the legislature. Bipartisanship is always under special pressure in a national election year, and education seems to have become, at least indirectly, a matter of party conflict. The legal limit of annual session was reached last Friday without the legislature's having passed an education budget. As this was written, the legislature was in overtime, and education was caught in a snarl of controversy over the timing of balloting on referendums.

Many observers feel that the immunity to partisanship which education has enjoyed in state politics may now have been significantly compromised.

However, up to now at least, California has profited from a favorable political climate, solid public support, strong internal leadership, fruitful faculty initiative, and the benefits of statewide planning. It is these advantages which the makers of the Master Plan have tried to perpetuate in the expanding higher-education system as a whole. The prospects for successs will be discussed in another article in this space.

—JOHN WALSH

Pesticides: Minute Quantities Linked with Massive Fish Kills; Federal Policy Still Uncertain

The case for government attention to the pesticides problem was dramatized last week with the Public Health Service's announcement that the massive fish kills of the past 4 years on the lower Mississippi River have been traced to incredibly minute concentrations of these useful, but highly toxic, chemical agents.

The Public Health Service, which has spent several years trying to detect the cause of the Mississippi slaughters among the more conventional scourges of fish life—accidental poison spillage, changes in water temperature, excess sewage, unusual bacterial diseases—appears rather surprised by its own discovery. PHS officials have asserted that the concentrations of the pesticides are so minute that 3 years ago the techniques for isolating them did not even exist. And the PHS appears to be further stunned by the realization that the deadly amounts accumulated not from any excessive or unusual use of pesticides, or from any monstrous accident, but, as Senator Abraham Ribicoff (D-Conn.) pointed out in a speech last week, simply from "business as usual" along the Mississippi.

Actually the surprise is a bit puzzling: the toxic potential of extremely small quantities of pesticides, and their wide use on crop lands abutting the Mississippi, is no news; the extreme vulnerability of fish was stressed in a well-publicized report by the President's Science Advisory Committee (PSAC) last spring; and one of the substances found in the dead fish—endrin—had been reported by the PHS as the cause of at least one major fish kill as long ago as 1961, albeit in somewhat more obvious circumstances. Much of what passes for surprise, however, is probably really alarm: now that damage to the fish has been proved, the PHS knows that it may have a serious problem on its hands, for the pesticides involved are in very common use.

The evidence that pesticides had been responsible for the killings of tens of millions of fish since 1960 was reported last week, but no one is sure what the mechanism of the poisoning is or what can be done to stop it. According to a letter from a Louisiana state health officer, James R. Strain, to Robert J. Anderson, a PHS assistant surgeon general in charge of en-