Higher Education in Britain: Polytechnics to the Fore

Some basic British institutions—railroads, for example, and pubs—preserve Victorian class distinctions in the accommodations they offer the public. In higher education the division is between the universities and the rest.

Britain's universities are internationally admired and, at home, exercise a strong claim on national esteem and on the Treasury. Other institutions of higher education operate in the shadow of the universities, offering vocationally oriented degree and nondegree courses to a mixture of full-time and part-time students. These institutions have often occupied drab buildings on side streets, have been indifferently funded, and have suffered from stepchild psychology.

Recently in Britain there has been a reappraisal of higher education policy, largely because of disappointment with the apparently low economic return on heavy public investment in universities, particularly in expensive graduate education and research programs. At the same time, stock of the nonuniversity institutions has risen, and a white paper setting forth higher education policy for the rest of the decade (*Science*, 1 June) elaborates on the decision to redress the balance.

What is happening in Britain is the most serious attempt to date to adapt the higher education to changing economic and social circumstances. Expansion of the universities since World War II has resulted in a surplus of narrowly, expensively, and inappropriately trained graduates, and an effort is being made to create acceptable alternatives to universities. In Britain as in other European countries, this is difficult because the mystique of the university is still potent, but the government seems determined and is being helped by changing public attitudes.

The new wave in British higher education is the polytechnics. Typically, these are composite institutions combining technical colleges and colleges of business and art under a policy enunciated in 1966 by the Labour government. Under the new policy announced a few months ago, enrollment in the polytechnics would be doubled to 180,000 by 1981.

The "polys" are not new in British education, but rather have reemerged in a new incarnation. The idea of the polytechnic goes back to the mid-Victorian era, and its origins and early development were linked to the evangelical and charitable impulses of the time. The prototype institution seems to have been the so-called Regent Street polytechnic in London, which was founded in 1880 by Quintin Hogg, a philanthropist and educational reformer with activist religious principles. The Regent Street poly was intended to serve young working people and provided not only vocational education but athletic and social programs. During the 1890's a half dozen other polytechnics were created on the same model in London. These were originally financed by a consolidation of charitable funds of London parish churches, but a law providing the public funding of technical education soon resulted in the support of the polys being taken over by London local government.

Part of "Further Education"

After the shift to public funding, the polys became largely indistinguishable from the technical colleges that had sprouted in London and the industrial cities of Britain. The polys thus came to be lumped with the heterogeneous collection of institutions in the category of "further education"—that is, post-secondary education. The polytechnics, colleges of education which train teachers for the schools, and the colleges of further education, which offer instruction at degree level and below, are the main types of institutions in the so-called "public sector" of higher education. "Public" in this case refers mainly to control of these institutions by local authorities.

The reemergence of the polytechnics occurred in 1966 when the Labour government decreed a reform of further education, noting that the government "believes that the best results will be achieved by developing higher education on polytechnic lines wherever practicable." The policy document bestowed the generic term "polytechnics" on the new institutions. A decision was made to settle on about 30 institutions for development as polytechnics.

The Labour government in 1966 was not very specific about what it wanted the polytechnics to be, and neither was the Conservative government much less vague on the matter in its recent white paper. But both parties were certain about what they didn't want, and that was for the polytechnics to grow into another crop of new universities.

Britain has not shared the American experience in the last half century of seeing normal schools upgraded into teachers colleges, thence into 4-year liberal arts colleges, and, in a final metamorphosis, into full-fledged universities with professional schools and graduate programs. But in Britain also, institutions of higher education, like water, seek the highest possible level. The most telling recent example is the case of the technical colleges that were established as high-level colleges of advanced technology (CAT's) in the late 1950's as part of the post-Sputnik reaction in Britain. The CAT's became degree-granting national institutions and in 1965, as part of the expansion of the universities, the CAT's—eight in England and two in Scotland—were elevated into universities.

The government's intention with the polytechnics is to ensure that they do not escape into the university sector. Giving the polys prestige comparable to the universities', although a different role, will not be easy, but some working principles have been laid down. The polytechnics are expected to offer most of their courses at degree level, but not to turn their backs on students just below degree level. It is also understood that the polys will continue to cope with part-time as well as full-time students.

The polytechnics are to function primarily as "teaching institutions." Research is not forbidden, but it is to be research related to the teaching function. As anyone familiar with the classic state college–state university wrangle in the United States recognizes, this is the formula for conflict. The arguments for restrictions on research stress the expense and the diversion of faculty time caused by research. The arguments against restriction center on the value of research in attracting and keeping competent staff and in infusing teaching with currency and vitality. Since the

appearance of the white paper, this question of research in the polys has been a chief issue of debate intramurally in higher education and in the education press.

If plans for the polytechnics seem ill defined, it is partly because the whole nonuniversity sector is being reorganized. Since the institutions in the public sector are locally administered, complicated three-way negotiations are necessary between local authorities, the institutions, and the Department of Education and Science in the central government. Some of the issues to be settled are extremely touchy. For example, because of a surplus of school teachers, student places in colleges of education are to be reduced from more than 110,000 to between 60,000 and 70,000. This means that some smaller colleges will be closed; perhaps a score of the larger ones will be upgraded into liberal arts colleges. The government would like to see most of the other colleges become education departments in the polytechnics, but many of the colleges themselves would prefer to expand existing ties with universities. The difficulty of translating general policy into particular solutions in such circumstances can be readily grasped.

Polys Vary Widely

The polytechnics themselves vary greatly in size and quality. Most were created in 1966 by merging existing colleges of technology, commerce, and art, as well as other specialized schools. As a consequence, the typical polytechnic is spread over several locations with separate faculties and administrations and all the problems of integration that implies. Inevitably, the current self images of the polytechnics differ widely. Some consider themselves as nearly universities, others see themselves simply as technical colleges in transition.

The stronger polytechnics have been encouraged to raise their academic sights in recent years by the pattern of development of the universities. Expansion in the universities has been biased toward science, technology, and the health fields, and as a result of heavy competition for places in arts (liberal arts in the American sense) and social sciences, a lot of qualified students have been turned away. The polytechnics have taken in part of the overflow, thus enrolling students who in other circumstances would have gone to the universities.

The poly's approach to subjects characteristically differs from the university's. A modern language student in a university would specialize in language and literature. In a polytechnic, the teaching would emphasize the spoken and written language for practical use and as an ancillary to other subjects. The polys have generally been more adventurous in teaching social sciences than the universities, responding to student demand for the equivalent of American "majors" in social and behavioral sciences.

Some polytechnics, because of historical accident, or more usually because of the demands of industry in their region, have gained national fame in one department or subject, ceramics, for example, or marine or automotive engineering. The polytechnic in Oxford, for instance, starting with building and construction classes, developed a school of architecture which is the biggest in the country outside London.

Oxford Polytechnic, as a matter of fact, enjoys several advantages that could allow it to develop into a model polytechnic. Its origins date back to the late 19th century, but the college of technology which became the polytechnic was relocated on a single site near the center of Oxford in the late 1940's. Its buildings are new, and because it draws students from around Britain and abroad, the poly has been allowed a special dispensation to build student residence halls on the pleasant, if somewhat cramped, campus. It now has an enrollment of 2300 (full-time equivalent) students plus a sizable evening program. (Planned maximum enrollment for polys is 6000, although many of them are unlikely to achieve that soon.)

Oxford University, a short bus ride away, appears to take an avuncular attitude toward the polytechnic. Some poly faculty are in graduate programs at the university and senior poly faculty are invited to university seminars and lectures. Students from the polytechnics can use the university libraries under certain conditions and university students have begun to come to the polytechnic, especially for language courses.

Like other polytechnics, the Oxford poly is busily amplifying its offerings of degree-level courses. Polytechnic students in the past have customarily studied for University of London external degrees, which involved outside examiners. A move is now under way for the polytechnics to design and administer their own degree courses. As in the past, these courses would be validated by an ad hoc body, the National Council for Academic Awards (NCAA), created at the time of the reforms of the early 1960's to approve courses in the nonuniversity sector. The NCAA was originally wholly dominated by university representatives, but the presence of polytechnic faculty on the council has been growing. This arrangement is, in theory, to continue, but observers say that the system is becoming unmanageable and that individual polytechnics will almost certainly get fuller authority to develop their own degree course.

The rise of the polytechnics is by no means viewed uncritically in every quarter. One university professor with a high standing in government advisory matters expressed the following views on the polytechnics which are not unusual among university people.

"There are two things wrong," he said. "The polytechnics are under the control of local education authorities and in urban areas local government is politicized along party lines. They must fall in with national party policies."

Judgment on Staff

The other point he made was that, compared to university staff, "the true quality of [polytechnic] staff is inferior on the whole—dealing in averages, of course. They think in terms of hours, teach from textbooks, there's no tradition. There's a lot of talk about the fight for academic freedom in the polytechnics. By and large they're not fit to govern themselves."

On the first point, opinions vary, but a majority of observers seem to believe that policy on higher education is generally agreed on by both major parties and is not a source of conflict, while education policy for secondary schools and below is disputed in the political arena. As for the quality of the staff, even the polytechnics' warmest partisans concede that there is a fair amount of deadwood, however, the defenders argue that many polytechnic staff members may have modest credentials as scholars, but are nevertheless excellent teachers. In the United States, the same sort of outlook might be expressed by a university professor commenting on a community college on the make.

Another question is how the development of the polytechnics will contribute to the growth of equality of opportunity in higher education. The theory has been that the polys appeal to working class students who might feel that the universities are too snob-

bish. Evidence is accumulating, however, that the socioeconomic distribution in the polys is about the same as in the universities. In other words, students from middle-class families are heavily dominant in both. One recent, fairly widely publicized study showed that there were fewer children of manual workers in one of the better known London polytechnics than in the University of Essex. Some poly directors are beginning to boast that their institutions are the first choice of some students qualified for universities. This may suggest some status changes in higher education in Britain, but there are grumblings that the polys will soon be as selective as the universities.

There may be another analogy to the British situation in the recent tendency of American colleges and universities operated by local governments to be taken over by the states. The polytechnics are locally controlled and, technically, locally financed, but the major portion of the cost of degree-level courses is already reimbursed by the national government and the Department of Education and Science wields increasing authority. As polytechnic education grows more expensive and national financing more explicit, the influences of DES will surely grow accordingly.

The big question for the polytechnics remains whether they will develop as the top echelon of the public sector and as a real alternative to the universities. Some seasoned observers find it difficult to believe that the 30 institutions in the group will remain homogeneous, but rather expect some of them to escape into the university sphere.

Skeptics have argued that the government is boosting the polytechnics because they are regarded as a lower cost substitute for universities. Salaries of polys are upgraded, and as the polytechnic faculty are now on the same salary scale as school teachers, and their pay is generally lower than that of their university peers. The pay range on the separate university scale is much greater, and university faculty at the higher levels of the scale are much better paid than top-level poly faculty. It is getting more difficult to defend the salary differential as the polys are upgraded, and as the polytechnics grow more like the universities in pay and in other respects, it is not unlikely that a sort of Trojan Horse effect will occur.

It would be ironical if the polys didn't change the pattern of postsecondary education. Only about 30 percent of British young people now complete secondary education compared with 75 percent in the United States. About 15 percent of the age group in Britain are in "further education," and perhaps 22 percent will be by 1981. Some critics believe the new education policy misses the 15-to-18 year olds who are not finding their way into postsecondary education. Higher education is not yet regarded as a right in Britain, and the tradition of academic competition and a relatively generous system of student grants has probably delayed demands for "open admissions" and special programs for minorities and students from low income families. But if the new policy does reveal this sort of a gap, it is not hard to predict what the demands will be in a later round of educational reform.—JOHN WALSH

Peer Review: Edwards Denies System Will Be Undone

A couple of weeks ago, the biomedical community at large got wind of the fact that the Nixon Administration has challenged the validity of the peer review system by which the National Institutes of Health (NIH) dispense hundreds of millions of dollars in research grants every year. Dismayed by what they were hearing, many biologists set out to assess the extent of the threat to peer review and to dissuade the Administration from any precipitous tampering with it (*Science*, 25 May).

Now Administration officials, particularly Charles C. Edwards, the assistant secretary for health in the Department of Health, Education, and Welfare (HEW), are trying to reassure everyone that the peer review system is not about to be dismantled. "If we were trying to eliminate peer review, I wouldn't be here," Edwards told *Science*. He believes that the biomedical community is overreacting. Edwards concedes that the peer review system is under scrutiny by HEW and the President's Office of Management and Budget (OMB) but says it is not under attack.

According to Edwards, when Caspar Weinberger became Secretary of HEW, he decided to take a look at the department's mammoth advisory system with its more than 400 committees, some of which meet only once a year, if that. There is a clear feeling that some streamlining is in order. However, Edwards said, "We have absolutely no thought of doing away with peer review." He went on to say that this does not mean that HEW thinks peer review should take the place of good staff work. Commenting that he would like to see the peer review system expanded to cover some of the activities of the Food and Drug Administration (FDA), which he formerly headed, and to the awarding of research contracts, Edwards said that he thinks it important that the contributions of outside reviewers be matched by good staff work.

As the peer review system at NIH works now, it applies primarily to research grants. Most of the significant decisions about rating and funding applications are made by outside consultants—members of scientific study sections or of institute advisory councils. Staff members play a somewhat peripheral role in this process, particularly in comparison to the authority they have over contracts. In other HEW agencies, including FDA, staff members have virtually full authority over both grants and contracts, using the advice of outside reviewers on an ad hoc basis rather than on a regular one, as does NIH.

In spite of Edwards' assurance that "the grant mechanism at NIH will remain essentially unchanged," some biomedical administrators and researchers are not convinced. Certainly, in the abstract, the idea of greater staff control does not appeal to scientists, who