

of which seems to be that of the acute shortage of technical people experienced by Swiss industry. Both in the universities and polytechnics, there are too few students following courses in chemistry and physics, engineering and computer science, he says. The confederation's only weapon is "counselling", another word for persuasion. One guesses that the first Swiss to find a plausible way of doing that effectively will have Hochstrasser jumping at any offer of extra funds the members of the Parliament may make.

The other academic problem in the front of his mind, echoed in the universities, is that the professoriat has become static. Hochstrasser says that a quarter of university professors have been in their posts for twenty years or more — a problem familiar elsewhere in Europe. One

difficulty, in Switzerland, is that buying flexibility with schemes for early retirement would be fearfully expensive, given that a professor's basic salary is SFr150,000 a year, the equivalent of £57,000 or of \$103,500 a year.

There is a smaller battle yet to be won. Perhaps the outstanding anomaly of the Swiss universities is the circumstance that the academic years of the German- and French-speaking universities do not coincide on the annual calendar. The University year begins in April at the University of Zurich, for example. Hochstrasser believes he may have won a battle for rationalization of this pattern, but his countrymen will suspend belief until they are sure that nobody has raised the 30,000 signatures required to call a referendum on a proposal for change. **J.M.**

## Geneva University

# Still a struggle to keep ahead

NEXT TO Basle, the University of Geneva is the oldest of the Swiss universities. (Founded at the end of the sixteenth century, it was a Lutheran stronghold from the outset, and still has a Department of Protestant Theology.) But the dean of science, mathematician J.-P. Imhoff, is to be found on the fifteenth floor of Geneva's television tower when not practising as a mathematician.

Inevitably, jammed against the border with France, Geneva is more cosmopolitan even than other Swiss universities. Imhoff reckons that a third of the present faculty is foreign, but says there is now pressure on the university to appoint more Swiss nationals.

There has also always been a cosmopolitan tradition among the student body — Russian refugees at the turn of the century, for example — and some 30 per cent of the students at the university are now non-Swiss, mostly French. Roughly 40 per cent of science students are from outside Switzerland. Geneva is also distinguished from most other Swiss universities in that over half of its students are women.

But the science faculty (with 1,800 students, 450 of them graduate students of various kinds) is smaller than the faculties of letters and, in particular, the faculty of economic and social sciences, which has more than doubled in size in the past decade to a total of nearly 2,500 students.

Among the science departments there are some, especially in biology and chemistry, which are short of students. The consequence is that academics enjoy luxurious teaching loads and have often ample time for research. The budget of the university from the canton of Geneva, over SFr 250 million a year, is sufficient for there to have been an improvement in the quality and condition of research equip-

ment during the past four years.

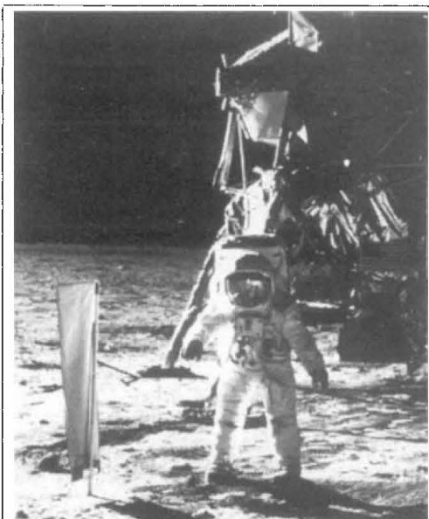
Among other things, Geneva's research reputation in the past decade or so turns partly on the success of its molecular biology, largely because of the department of molecular biology founded by A. Tissières, who retired at the end of the last academic year (and who has been succeeded by Professor U. K. Laemmli).

But in a closely related field, the university has also been hugely embarrassed by the accusations of scientific fraud levelled in 1983 at Professor Karl Illmensee, a member of the embryology department at the medical school.

Imhoff says of the affair, which culminated in a critical report by an independent commission appointed by the university and in Illmensee's resignation in July, 1985, that the "dust has now settled", but he also acknowledges that the incident "has left marks". The report of the committee of inquiry was critical of the university for indecisiveness, and for its failure properly to confront Illmensee with the charges against him.

One of the more obvious lasting marks may be the reorganization of biology teaching now brought about by the creation of a new department of biology, the effect of which seems to have been to rob the molecular biology department of two and a half senior posts. There are some who suspect that cutting down molecular biology in this way is delayed retribution for the department's support of Illmensee's original appointment.

Another mark of the affair is the damage done to Illmensee himself. Laemmli sticks by the view that he is a man of great talent who has now been excluded from professional life. He says of those found guilty of misdemeanours in research that he "expect them to pay a very heavy price". **J.M.**



JOHANNES Geiss, from the Physics Institute at the University of Berne, has built up a considerable space research facility over the past two decades with substantial support from SNSF, but is in many ways most proud that Neil Armstrong and Edwin ("Buzz") Aldrin took one of his early experiments with them on their first journey to the Moon.

The intention was to collect particles from the solar wind on a platinum foil screen supported on the surface of the moon as if it were a flag mounted on a stick stuck into the ground. The screen was returned to Berne, but the support remains where it was placed. Similar equipment was carried on five succeeding Apollo flights.

Geiss has used the measurements to advance an interesting hypothesis — that the proportion of deuterium in the nebula from which the Sun condensed must have been less than the proportion now found on the surface of the Earth. The argument is that the <sup>3</sup>He measured in the solar wind should consist of the proportion with which the Sun was originally endowed together with that created in the history of the Sun by the conversion of deuterium. The notion, which emerges, that there must have been fractionation processes in the early Solar Nebula which have increased the proportion of deuterium on the surface of the Earth above the primordial value.

Meanwhile, Geiss's enterprise has grown from being a means of mounting modest experiments (the Apollo foils, sticks included, weighed merely 250 grams) to a near-industrial enterprise with a payroll of 120, the large technical staff included.

Its objective is to work up experiments that can be carried by other people's satellites and rockets, usually in collaboration with other people. At the time of the Halley encounter in 1986, for example, he and his colleagues helped design and analyse the data from an ion spectrometer carried by the Giotto spacecraft.

But now, Geiss presents a problem for his sponsors by his impending statutory retirement, which will require some part of the Swiss government to decide whether the future of his enterprise should rest with the University of Berne and grants from SNSF, or become an independent institute, with support from some other part of the government. **J.M.**