right, and a charge of complacency and indifference by the opposition.

Mr Piffl-Perkevic started from the view that international comparisons, unflattering as they may be, are not the yardsticks by which science policy in Austria should be judged. What matters, he said, is that the "intellectual potential" should be enabled to be fully effective. By this test, he said, it was remarkable that Austrian scientists were able to publish 100 patents and some thousands of research papers each year. But "this miracle should not make us content. What Austria needs is fruitful discontent". To this end, the Government was hoping to promote legislation that would increase the support for and the effectiveness of research in universities and in industry, and was hoping to attract to Austria institutions such as the CERN 300 GeV laboratory. From what Mr Piffl-Perkevic had to say, it is plain that he will be exceedingly downcast if the CERN laboratory goes elsewhere, for there was nothing in his speech to suggest to his largely Austrian audience that there are eight other bidders in competition for the same site.

The case for the opposition is necessarily simpler. Only one-third of one per cent of the GNP of Austria is spent on research and development, and the work of the universities is hampered by lack of equipment and technical assistance and by the burden of the teaching load. Altogether, according to Dr Meyer, only 2,000, or 4 per cent, of the qualified scientists in Austria are actively engaged on research and development. This Dr Meyer described as an "intellectual sell-out", and she asked for better co-ordination of research and for more collaboration with nearby European nations.

Whichever party is right, it does seem plain that the Government is about to introduce legislation embodying some substantial reform of the situation in the universities. Whether this will be enough to break down the hierarchical relationships within university departments which at present conspire to see that professors are burdened down with administration (and sometimes even have to type their own letters into the bargain) and that assistants are burdened down with too much teaching, only time will tell. The chances of a complete reform in one are reckoned to be small.

New Town, New Technology

At the Cranfield College of Aeronautics the staff face a challenging prospect. Professor A. J. Murphy, Principal of the College, believes that it can become a British MIT, providing technological drive and expertise to the new town of Milton Keynes which will soon begin to grow around it. This ambition will be furthered when the college becomes the Cranfield Institute of Technology, with the power to award its own degrees, but even now it is by no means fanciful.

For a start, the college includes much more than aeronautics, although aircraft remain its bread and butter. The school of management—the Cranfield Work Study School—has for many years been the largest in the country, although it is now being overtaken by the schools at Manchester and London. The Advanced School of Automobile Engineering offers one or two year postgraduate courses, and within the same campus is the British Hydromechanics Research Association, which carries out work in advanced fields such as fluidics. Students at Cranfield all have university degrees or have gained equivalent qualifications in other ways, and the qualifications which Cranfield offers are equivalent to a university master's degree. Even the campus has an American look about it. Fears that Cranfield's style might be cramped now that its finances are audited by the Comptroller and Auditor General happily seem to have been unfounded.

Some of the most exciting research projects are to be found in the Department of Aircraft Propulsion. In a ram-jet, air is introduced at supersonic speed, slowed down to a few hundred feet per second for combustion, and then exhausted again at supersonic speed. This cycle is intrinsically wasteful, and would be improved if the combustion could also be carried out at supersonic speed. Using hydrogen fuel and air at high pressure, the research staff under Professor A. H. Lefebvre have shown that supersonic combustion can be achieved; now they propose to move on to more practical fuels such as kerosene and methane. Supersonic combustion would be a great advantage at Mach 2–3, but at hypersonic speeds around Mach 8 it is essential, as the need to slow down the air stream produces pressure increases which a very hot engine would be unable to withstand.

Another project is the design of an ion rocket engine, using tungsten cathodes in an atmosphere of argon to produce a stream of ions which can be accelerated through grids to provide a tiny thrust. The ion engine at Cranfield is much smaller than some which have been built in America—it produces only 30 dynes of thrust—but even this minute power would be useful in outer space. Using a slurry of aluminium in water, studies on tri-propellant rocket motors have been carried out; in theory, motors of this type burning beryllium in oxygen and cooled with hydrogen could offer a 30 per cent increase in rocket thrust. More directly applicable are studies of fuel atomization, including a device to replace the carburettor in an internal combustion engine, and an improved version of an airblast atomizer for use in jet engines.

Bone Strontium

The most recent report of the Medical Research Council on the content of strontium-90 in human bones shows a continuing but gradual decline. In the first half of 1966, for example, the concentration of strontium in the bones of stillborn children worked out at 2·3 pc. per g of calcium for a series of 47 analyses at the Capenhurst Laboratories of the UK AEA, and 3·1 pc. per g of calcium for 59 stillborn skeletons analysed in Glasgow. The corresponding figures for the same period in 1965 were 2·7 and 3·2 pc. per g of calcium respectively. As in previous years, the highest concentrations of strontium-90 are to be found in the skeletons of children dying between 6 and 23 months of age. The mean of 8 English measurements of skeletons in this category worked out at 7·3 units in the first half of 1966, compared with 8·9 units in the previous year. (The corresponding figures for Scotland are 8·3 and 11·3 units.)

The latest report marks a technical innovation in that the measurements carried out in England are based on samples of vertebrae. Previous measure-