

obtained in the political checks was used.

The department will continue to run nominees' names through an FBI security check which it calls "routine", although neither the National Institutes of Health nor the National Science Foundation follows this practice.

Professor Joe Key of the University of Georgia, a director of the competitive grants programme under President Carter, wonders if the checks were an attempt to cause trouble for the four-year-old programme, which is still small and fragile and viewed with some suspicion elsewhere in the department. The bulk of agricultural research (some \$1,500 million a year, of which \$15 million is for competitive grants) is funded through land-grant colleges and state experimental stations, which receive government funds according to an automatic allocation formula. This latest incident did little to help the competitive programme's vulnerable position.

Stephen Budiansky

West German environmentalists

Greens' delight

Heidelberg

The Hamburg elections on 6 June have left the environmentalist "green" party in a powerful position. While the conservative Christian Democratic Union (CDU) won one more seat in the Hamburg Senate than the Social Democrats (SPD), the greens (Grün-Alternativ-Liste) won nine seats and now hold the balance of power.

In Hamburg, CDU leader Walther Leisler Kiet is now trying to form a non-party "citizens' senate". If he fails, Mayor Klaus von Dohnanyi of SPD will have to ask the greens for their support. The greens have set their faces against coalition and have said that they will cooperate only on strict conditions, including Hamburg's abandonment of nuclear power.

The aftershocks of the Hamburg election continue to reverberate in all political strata in West Germany. The personal intervention of Chancellor Helmut Schmidt and Foreign Minister Hans Dietrich Genscher failed to turn the tide in favour of the Social Democrats, while the Free Democrats, the lesser partner with the Social Democrats in the Bonn coalition, again failed narrowly to reach the 5 per cent threshold necessary to qualify for a seat.

The polarized vote in Hamburg reflects the shakiness of the Bonn coalition as well as the strength of the green-left. If the Social Democrats lose only one more *Land*, the Christian Democrats will have a clear two-thirds majority in the Bundesrat and could block all government legislation. Rumours are now rife that the Free Democrats will leave the coalition after the Hesse election on 26 September, perhaps joining with the Christian Democrats. The deepening green intrusion into West German politics is at least partly responsible.

With seats in five parliaments, the greens have become the third strongest party. The abrasive challenge they offer to the assumptions of the established social industrial system is proving hard for even the Social Democrats to meet. They are concerned that "integrating" green issues would further alienate the traditional working class base without necessarily keeping ecologically-minded young voters. Indeed, there are wide differences between the Social Democrats and the greens except on individual issues such as the Rhine-Danube canal or the protection of wildlife.

The central goals of the greens are the realization, by means of a social welfare state, of the recommendations of Global 2000 and of disarmament. They call, for example, for radical change to a no-growth society, the use of alternative technologies and energy sources, conservation, economy and peace. They oppose the "compromise politics" of the Social Democrats.

Voters are mainly young and well educated and the focus is often local: cauliflower cancers of eels from the polluted Elbe and the discovery of tonnes of nerve gas in a ramshackle chemical factory near the city centre were important at Hamburg. The parties are autonomous at every level, so that there are no declared leaders and the small new national party controls neither the policies nor the attitudes towards coalition of the *Länder* parties. To ensure the five per cent vote, the *Länder*-Grünen have often joined with other groups, some of whom have made uncomfortable allies.

Their anarchic demands for Rousseau-esque self-determination, their use of violence and frequent threats to make West Germany ungovernable if minority demands are not met raise spectres of the Weimar Republic.

In September, the Hessen greens will go it alone, campaigning especially against the extension of Frankfurt Airport and plans for four local reprocessing plants for atomic waste. They expect a 10 per cent vote, a Christian Democrat parliament and a defeat for the Social/Free Democrat alliance that would indeed have national repercussions.

Sarah Tooze

European science policy

Give and take

Brussels

The second report on European science policy by Crest, the Committee on Scientific and Technical Research, tells the familiar story of how, after 15 years of trying to bridge the technology gap with the United States, Europe still lags behind in the latest technologies. Of the million or more European scientists — representing 20 per cent of the world's total — 350,000 are researchers, and science in Europe cost \$35,000 million in 1980. The new report, which has still to be published, goes beyond

its predecessor in comparing the national research and development policies of the ten EEC member states.

Energy research, which since 1974 has been a priority, accounted for a smaller share of the research and development budget at 11 per cent in 1980 than in either the United States (12 per cent) or Japan (25 per cent). Nuclear (fission) research has seen its importance slump, particularly in West Germany and France.

Allocations to industry research grew by 15 per cent a year in the Community as a whole between 1978 and 1980 but are thought to have returned to pre-1974 levels only last year. The increase has been marked in Italy and the United Kingdom, but UK spending is still below the 1974 level.

Space research, where international cooperation is at its most developed in Europe, shows France and West Germany sharing more than two-thirds of the spending, worth \$860 million in 1980. Curiously Italy and Belgium, recent years have contributed the greatest proportion of their budgets to space research.

Agricultural research turns out to play the biggest role in the smaller member states. In Ireland and Greece a quarter of public research and development money goes on agriculture, which is equivalent to only 3.7 per cent of the EEC's total spending. Agriculture is also important in Denmark and the Netherlands which spent \$3.7 and \$6.8 per head respectively compared with an EEC average of \$2.7, and \$3.1 in the United Kingdom. Italy's outlay seems small at \$0.9 per inhabitant, considering agriculture's social and economic importance in the country.

International cooperation is still important but its share of public budgets has fallen by as much as 25 per cent since 1978. Between 1974 and 1978 it was constant at 10 per cent but now there are wide differences among the member states. Britain's contribution, for example, has increased by 25 per cent since 1970.

The ten members of the EEC also differ in the response of their companies to the technological challenge. The role of the state in industrial research is greatest in the United Kingdom (30 per cent), France (22 per cent) and West Germany (20 per cent), but less than 10 per cent in the rest. Measuring research in companies as the proportion of expenditure on research and development to the value added of the manufacturing puts British companies first. The proportion of research expenditure is 4.7 per cent followed by West German companies (3.9 per cent), French companies (3.5 per cent) and Dutch companies (3.3 per cent); in the United States though, the average is 5.7 per cent. But if a distinction between public expenditure and companies' own funds is made, the picture changes. US companies spend the most (3.8 per cent) followed by the Japanese (3.4 per cent).

The report argues that many of the

member states are not pulling their weight. Germany, France and the United Kingdom share 80 per cent of Community research and development expenditure while the combined efforts of Belgium, Denmark, Ireland and Greece amount to as little as 6 per cent. The conclusions are being studied in preparation for the next EEC science council of ministers on 30 June.

Jasper Becker

Luxembourg in space

TV plan delay

Luxembourg is falling behind in the race to provide the first satellite broadcast for Europe. Unresolved wrangles about the relative sizes of French, Belgian and West German shareholdings in the projected £200 million Luxembourg system have now put back the earliest possible launch date until late 1986.

By then, the national satellites planned jointly by France and West Germany will probably have been up for a year. Also by late 1986, the new all-British Unisat, with two BBC channels, might be aloft.

Radio Tele-Luxembourg (RTL), the commercial company in charge of all broadcasting in Luxembourg, insists that its satellite project is a matter of when, not if. It plans to beam three channels of films, news, entertainment and advertising to a wide swathe from Benelux to Bavaria, and possibly to south-east England. It knows, however, that this ambition represents a big gamble for a small country. RTL, whose current radio and television programmes reach a weekly audience of 40 million in Europe, contributes 5 per cent (about £25 million) of the annual income of the Luxembourg government. Commercial broadcasting has been a major source of revenue for the 50 years since Luxembourg, accustomed to living on its wits, recognized that its central location, plus national sovereignty over its broadcasting policy, permitted it to send radio advertisements and popular music into countries whose governments prohibited one or both by their own broadcasting organizations. It was in 1932 that Radio Luxembourg began spoiling the determination of Lord Reith, the BBC's first director-general, that the British people should have no light radio entertainment on Sunday.

Now, however, with commercial radio and television sprouting all over Europe and eroding its audience, RTL must find a new service to sell or see its profits and contribution to the national purse atrophy. But even if its satellite succeeds in pulling in audiences and advertising revenue, the heavy costs of depreciation of the start-up years is going to hurt Luxembourg's economy, already in trouble with its first unemployment since the Second World War.

RTL cannot proceed, however, until it decides upon a new financial structure to

Monsanto hands out \$23.5 million

St Louis

The Monsanto Company has awarded \$23.5 million to the medical school at Washington University in St Louis, Missouri, for five years of research into how proteins and peptides affect cell regulation. The grant, announced on 3 June, approximately doubles the research funds from non-federal sources at the medical school for that period, and is one of the largest from a single company to a university.

Monsanto's award is an obvious boon to the university's research programme: two-thirds of the money will go to applied research and one-third to basic research. Work will be selected by an eight-member committee — four university faculty members and four people from Monsanto — headed by Dr David M. Kipnis, head of the department of internal medicine at the university medical school. University researchers will be at liberty to publish the results of work funded under the grant, but if the material contains potentially patentable technical developments Monsanto can review it, and request a short delay before submission for publication. Monsanto will have exclusive rights to any licences

arising from patents on the work, but patents will be the exclusive property of the university, which will be able to receive royalties from Monsanto licences. Royalties will go to the university's research and education programmes — not to individual researchers.

Meanwhile, as many as "a couple of dozen" Monsanto scientists may work at the university and some may spend several years there. Monsanto's move clearly shows an interest in medical products, and Dr Howard A. Schneiderman, Monsanto's senior vice-president for research and development, says that while the company does not now market health-care products, it hopes to do so in future.

Monsanto launched a \$1.8 million project with Washington University earlier this year for research using monoclonal antibodies for diagnostic work. The company is also working with Dr Mary-Dell Chilton, of the university biology department, on genetic engineering in plants. Schneiderman did not, however, confirm rumours that a major new grant from Monsanto was imminent to support Chilton's research.

Karen Freeman

accommodate the necessary infusion of new capital. Although the company is registered in Luxembourg and has, by law, a majority of Luxembourg nationals on its board, its largest shareholder is predominantly Belgian. Also, French investors, notably in the form of Havas-IP, Compteurs Schlumberger and Paribas, are in a strong if not controlling position. RTL's problem now is how to introduce a

Once the go-ahead is given, RTL will invite tenders for the system (two satellites plus a spare). It will also decide whether to devote one of the three television channels to broadcasting in English. Any deregulatory move by the Hunt committee now inquiring into the expansion of cable television in Britain would undoubtedly sway the decision. Elsewhere, RTL insists, a vast expansion of cable television in Europe is not necessary to the success of its plan. It expects half of its audience to buy a rooftop dish to receive its programmes.

Brenda Maddox



big new outside investor — as a group of West German publishers (which does not include the giants) has offered about £50 million — without disrupting the delicate Franco-Belgian balance of power. The French hope to avoid excessive dilution of their own influence. But they, and the whole board, know that the matter will have to be sorted out next month if further delay is not to occur.

Jobs and automation

US faces facts

Washington

The effect that new electronic technology is having on jobs, which has been an issue of intense debate in Europe, is now a cause for concern in the United States.

A new study by the government's General Accounting Office (GAO) suggests that the recent revolution in electronics will be felt not just in manufacturing — the sector most affected so far by automation — but also in office and service jobs. And even within manufacturing, the spectrum of fixed automation introduced in the 1950s, and the initial applications of robots lately have tended to be in tasks that were considered menial, or monotonous or unsafe, for human workers. Spray painting