

self-examination of the breasts for signs of breast cancer.

There are two trends in the development of screening facilities—the use of simpler techniques for laboratory tests, and automation. A machine devised in Sweden works with discrete samples and includes a small computer, and can process some 500,000 samples a year with 20 analyses on each sample.

The usefulness of mass screening is illustrated in the current issue of *Lancet*, in which two general practitioners, a London borough health department, and a university department of surgery cooperated in a survey to detect cancer of the breast in London practice. The results of the survey are:

Total number of women invited ..	1,721
Number attended	654
Abnormality suspected	72 (11%)
Clinical confirmation	23 (3.5%)
Not re-confirmed	5

Of the 18 confirmed cases, two refused further treatment, five had cancer of the breast and the other eleven had various benign lesions. (*Lancet*, i, 1419; 1968.)

Schools Commission Re-commissioned

THE Public Schools Commission has been equipped with eleven new members and a new chairman, Dr D. V. Donnison, who is professor of social administration at the London School of Economics. The commission began its inquiries in February 1966 under the chairmanship of Sir John Newsom. Its first report, which will discuss how the public schools should be integrated with the state system, is to be published on July 23.

The report is not expected to contain any particularly radical proposals, despite the menaces once detected in its constitution and terms of reference. The public schools have apparently tamed the zeal of even their most hostile inquisitors, who in any case faced a somewhat intractable issue. The choices before them were to abolish the public schools altogether, to stipulate that the schools should open a percentage of their places to Government supported pupils, and to leave them as they are. Some public schools provide an excellent educational service, to those that can afford it, not least because of the high staff : student ratio they maintain. It would be a negative measure to abolish the schools entirely, yet there are severe problems in doing anything less. Local education authorities invited to support students at public schools have always been reluctant to meet the higher fees and in the past the places offered to them by various public schools have not fully been taken up.

The alternative to local authority support is that central government should finance a public school education for selected pupils. But to send the best pupils to public schools would betoken a lack of confidence in the state system and provoke a predictably unsympathetic reaction from its teachers; while to select students for public schools on any grounds other than merit would raise cries of anguish from disappointed parents.

The problem about the public schools is that, given the chance, many people would prefer to enrol their children there rather than at state schools. To integrate the two systems would entail giving formal recognition

to the public schools' greater popularity. The Public Schools Commission has apparently discovered no escape from this dilemma, and the objects of its inquiry are expected to continue much as before.

This is in many ways a pity, because the kind of segregation perpetuated by the public schools system is doubtless a handicap to its pupils and divisive to society at large. The people most eager to remedy this situation are probably the teachers and administrators at public schools, but as independent critics of the Government's educational policies they do not always see eye to eye with what are sometimes regarded as the doctrinaire approaches to the problem adopted by the Department of Education and Science.

The reconstituted commission is to consider its remaining terms of reference, which are to advise on the integration of day independent and direct grant grammar schools.

Another A-Level

ONE of the proposals for sixth-form experiment now filtering its way through to the joint working party of the Schools Council and the Standing Conference on University Entrance is a scheme for teaching mathematics and physics in combination, chiefly for the benefit of intending biologists but also in the hope that such a course will provide non-scientists with an easy (and rewarding) way of learning a little science. The initiative for this proposal has come from Mr David Tomes, head of the physics department at Wellington College. He has enlisted the help of Mr John Osborne, senior science master at Westminster School, and both of them have been encouraged by the friendly reception their proposals have received from other teachers and even from the Schools Council. Their next objective will be to interest half a dozen schools in teaching their course, ideally in the school year beginning in September 1969. To reach this goal, it will be necessary for them to persuade the examinations boards to provide a suitable examination and also the universities to accept an A-level in physics and mathematics combined as a suitable qualification for entry.

Mr Tomes is particularly anxious to win the interest of the medical schools; he points out that the course he is designing is one of the few ways in which intending medical students can come closely into contact with mathematics in the sixth form. At present, in Britain, intending medical students tend to follow courses in physics, chemistry and as much biology as they can stomach, with the result that they may finish up knowing nothing of calculus or probability. There are several reasons why a combination of physics and mathematics should seem preferable to the combination of physics and chemistry now being taught in some schools under the label of Nuffield physical science—for one thing, it should be a good deal easier to teach. The other side of that coin, however, is that the physical science course allows sixth-formers to postpone a decision about the kind of science they will eventually settle for at least until they have finished their examination. The combination of physics and mathematics will necessarily distinguish from the beginning between intending biologists and the rest.

In the long run, of course, the success of this A-level course, like that of the other variations on the traditional pattern of science education in British schools,

will depend to some extent on the pattern which is eventually recommended by the working party of the schools and the universities. If the outcome is a pattern along the lines which many university educationists have been advocating, A-level subjects as such may eventually disappear from the schools. Everybody seems to agree, however, that that will take a considerable time.

How Engineers Do

THE College of Engineering at Illinois University has compiled a revealing report on the subsequent progress of its alumni. In financial terms it appears that the brightest graduates do not invariably make out best, but it helps, none the less, to have the letters PhD after one's name.

By 1967 the average monthly salary of those who graduated in 1957 was \$1,227; holders of a doctorate earned an average of \$1,444 a month, but those with no advanced degree and those with a master's degree in business administration were alike in bringing home a monthly \$1,196. Ranking the 370 graduates who answered the questionnaire in ten groups by order of their class of degree, it emerges that the second decile is earning the highest monthly salary (\$1,347) and the sixth decile the lowest (\$1,125); the correlation between worldly and academic success is present but not conspicuous.

A quarter of the graduates are employed in management or administration; research, development, production and manufacturing account for another quarter. Only 2 per cent are in teaching and one individual has become a psychiatrist. Only 40 per cent had remained in the same job since graduating and more than half of those who changed jobs had done so more than once.

A companion survey made of engineers who graduated in 1962 produced similar results. With an average monthly salary of \$968, only 10 per cent of the younger alumni were in management and proportionately more in research and development. To the question of whether any persons known to them had left jobs in industry because of the "unfavourable attitude of young people toward business and their dissatisfaction and disillusionment with American industry", a third of both groups replied in the affirmative. Between a quarter and a third read the *Wall Street Journal*, but less than 4 per cent admit to taking the *New Yorker*.

New Booster

THE Goldfinch booster is half way through its flight trials at Woomera and could come into service in 18 months. It will provide a most useful addition to the capacity and versatility of the Skylark sounding rocket, the principal tool of the British space research programme for the past 10 years

There is already one booster available for improving Skylark's performance, called Cuckoo. With the advent of the highly successful stabilized Skylark which enabled a start to be made on X-ray astronomy and has already made important contributions to solar physics, payload demands on Skylark have increased. The stabilization equipment in the nose cone accounts for a sizable proportion of the payload, reducing the weight available for experiments. A

Cuckoo-boosted Skylark is used for stabilized flights. The Goldfinch booster's performance is about double that of Cuckoo; it will add about 6 feet to the total vehicle length. The object is to carry a 600-pound payload to 200 km or so. In terms of the same payload weight, this is 30-40 km higher than is possible with the Cuckoo-boosted Skylark. This will add a few seconds of experimental time. Alternatively a smaller payload could be carried to greater altitude or a larger one to a lesser height. Individual flight configurations are tailored to the requirements of the particular experiment. The addition of the Goldfinch facility will therefore further stretch the basic Skylark vehicle and increase its value for scientific work.

The 14 Skylark flights from Woomera last year were all successful, and the rocket has proved a very reliable performer. It and its boosters all employ plasticized solid propellant developed at the Government's Explosives Research and Development Establishment at Waltham Abbey. The current proving tests of the Goldfinch booster at Woomera are in the hands of the Royal Aircraft Establishment, and when they are complete the British Aircraft Corporation at Bristol will take over production. The Science Research Council is the commissioning authority.

New Computer Man

INTERNATIONAL Computers, Limited, at last has a permanent chairman. ICL, formed by the merger of International Computers and Tabulators with the computer interests of English Electric and Plessey, has been looking for a chairman for some months. Last week it announced that the man is to be Sir John Wall, whose career includes periods in private industry and in the civil service. Colonel Terence Maxwell, who has been acting as chairman of ICL in a caretaker capacity and who made it clear that he was staying only until a successor could be found, moves down to deputy chairman.

Sir John Wall began his career as a merchant banker but moved into the civil service in 1939, remaining at the Ministry of Food for thirteen years. In 1952 he transferred to Unilever, and later became managing director of Electrical and Musical Industries, Ltd. Two years ago he was seconded to the General Post Office as a deputy chairman, and has been involved in the operation of changing the Post Office from a government department to a public corporation. He will not now be returning to EMI at the end of his secondment, but will instead be going to ICL. His appointment seems an admirable one; although not born and bred into computers, Sir John is clearly an able manager with enormous experience. ICL, which seems likely to occupy a position somewhere between public and private industry, might have been designed to take advantage of his experience. He is unlikely to be impressed (or depressed) by the complexities of running a business in harness with Whitehall—as well as being a former civil servant himself, he was a member of the Fulton Commission.

Fishing Goes Flat

THE British trawling fleet has had a disastrous year, according to the report of the White Fish Authority for the year ended March 31. It was even worse than