

enforceable. Mr Matthews proves neither point. The analogy with doctors and lawyers is misleading; they, after all, gain a wide degree of influence over the personal affairs of their clients by virtue of which their behaviour needs to be regulated by particular safeguards. These are more in the nature of specific rules built on long professional experience than general prescriptions about right or wrong. Another profession which increasingly has access to private information is that of computer staff, and the British Computer Society is now considering a code of ethics which will doubtless cover such matters. But engineers, as a profession, do not seem to be faced with this kind of problem.

The various engineering institutions in Britain have their own codes of professional conduct, but, unlike the architects, for example, there is no professional register from which transgressors can be struck off or suspended. The worst punishment an engineer can endure, which is rarely applied and does not in any case prevent him from practising, is to lose the membership of his particular institution. The engineering institutions intend to unify their various codes of conduct, and discussions are now in progress with the Council of Engineering Institutions. The next step will be to devise an effective means of enforcing the code, possibly by setting up an entirely independent disciplinary body such as exists for doctors, lawyers and architects.

It is open to doubt whether the more general ethical precepts proposed by Mr Matthews have any place in a working professional code. For example, the seventh of the twenty laws inscribed on Mr Matthews's tablets lays it down that the engineer "should allow no criticism of the profession made in his presence which he regards as unjust to pass without challenge" while the sixteenth demands that he "strive for the continual betterment of industrial relations". These may be fine sentiments, but are they the stuff that everyday life is made of? Little credit is to be gained, by the engineering or any other profession, by pretending to an incredulous world that its members, on pain of losing their proficiency badges, will henceforth abide by a boy scout's ethos.

EURATOM

Community with Nine Lives

EURATOM, the Common Market's nuclear community, has survived its latest crisis by the narrowest of margins, and is now in business until July 1, 1969, at least. By then, the Common Market ministers responsible for it will have produced, so they say, a new five year plan. Followers of Euratom's fortunes over the years will believe that when they see it. The latest crisis has been caused principally by France, which has been trying to turn the work of the community to its own advantage. This in itself is no crime, and all Euratom members do the same, but France is willing to take the process further than the rest.

By the end of the meeting of ministers on December 21, however, agreement had been reached on a budget of \$48 million for 1969. More important, perhaps, was

the agreement that about half this budget could be spent on joint Euratom projects in which all countries combine, and the other half on "complementary" programmes, which are subscribed to by only those countries which declare an interest. The position taken by France was that much less than half of the budget should be spent on community projects—some \$17 million—while the rest should go to complementary programmes in which the French would not have been involved. The Dutch were hoping to salvage the community, to a limited extent at least, by encouraging the remaining five members to support all the complementary programmes, which would also have drawn attention to France's isolation. In the event, this hope seems to have been dashed by Belgium, which said that its contribution to some of the complementary programmes would be only nominal.

The EEC Commission seems to have taken a very tough line at the December meeting, and its president, M. Jean Rey, went so far as to describe France as an "impossible partner". The agreement does represent a compromise by France, and it brings another six months of job security to the staff of Euratom. If the original French plan had been adopted, the research staff, 2,700 strong, would have been severely pruned. Indeed, France's original proposal that there should be no community research work at all would have meant a reduction of two-thirds in the numbers employed.

With another six months' grace, Commission officials are hoping to shift the emphasis in Euratom away from nuclear work towards other important industries, like metallurgy and computers. If this ploy works, the programme could perhaps be coordinated with the limited amount of technological cooperation which has been agreed between the six and other countries, including Britain. But if France is still determined to exclude Britain from the EEC, it is unlikely to fall for a gambit as obvious as this one. In any case, once in, it is likely that Britain would be very much happier with the looser kind of association which France seems to be pushing for, rather than the unified community which is still favoured by the five.

PHYSICAL STANDARDS

New Volts for Old

STANDARDS laboratories throughout the world are adjusting the values of their primary electrical standards of voltage and resistance to bring them in line with the standards maintained at the Bureau International des Poids et Mesures (BIPM) at Sevres, near Paris. The British National Physical Laboratory has announced that as from January 1, 1969, its unit of resistance will be increased by 3.7 parts per million and the unit of voltage will be reduced by 13 parts per million. United States and Canadian laboratories have agreed on similar changes and other national laboratories are expected to follow suit. Fortunately, the changes involved are so small that they will affect only extremely precise scientific and technological research work.

Under the present system, each country maintains its own permanent standards of voltage and resistance and assigns absolute values to them on the basis of measurements made in terms of the fundamental international (SI) units—the metre, kilogram, second

and ampere. Agreement between different laboratories is not perfect and every three years each laboratory sends its standard cells and resistors to the BIPM so that they can be evaluated in terms of the "BIPM volt" and "BIPM ohm". For the sake of continuity the stated values of the standards are not adjusted each time these comparisons are made.

As measuring techniques improve and the standards themselves become more stable and reproducible, however, the differences between the units maintained in various countries become more significant. The most recent and precise determinations indicate that the BIPM ohm is within 1 part per million of the correct value while the BIPM volt is probably 11 parts per million larger than the correct value. At an international meeting in October, metrologists agreed that the BIPM volt should be adjusted accordingly. Other countries are making this the occasion to make their own units agree more closely with the BIPM units.

The standard resistance is measured by comparison with the reactance of a mutual inductor used on alternating current at a known frequency. The inductance is calculated from the physical dimensions of the coil. The Metrology Division at the National Physical Laboratory hopes that, by using a capacitor instead of the inductor, it will be able to measure resistance ten times more precisely. The voltage of a standard cell is compared with the potential difference across a known resistor carrying a current from the coils of a current balance. The absolute value of the current is determined in terms of the mechanical force between two conductors carrying the same current.

METRICATION

One Swallow for Summer

ALMOST five months to the day after Mr Anthony Wedgwood Benn, the Minister of Technology, announced in Parliament that the Government would be setting up a Metrication Board as soon as possible, Lord Ritchie-Calder was named on December 19 as its chairman. The appointment of the other board members will not be announced until Parliament has reassembled later this month, which has disappointed officials as well as many industrialists, who feel that the sooner the board is appointed and starts work the better. It seems, however, that Mr H. Cruickshank, the chairman of the construction industry's metrication working party, will belong to the board, while Mr A. H. A. Wynn, the Ministry of Technology's senior official working on metrication, and Mr H. A. R. Binney, director-general of the British Standards Institution, are almost certain to be asked as well.

Lord Ritchie-Calder seems to be everyone's idea of the ideal man for the job, which during the next seven to ten years will entail giving advice to all and sundry on the problems that will arise from adopting a fully metric system of weights and measures. Lord Ritchie-Calder, who said last week that he will start work in March, sees the job as a huge public relations exercise with ramifications in every sphere of life. The problem is simply to persuade people to adopt the metric system voluntarily. Persuading industry should be easy, but persuading consumers and retailers, who are not organized among themselves, is where the difficulties begin. Lord Ritchie-Calder says that he expects the



Lord Ritchie-Calder.

board will encourage the setting up of consumer and retailer groups and councils and exploit all the communications media in its attempt to win over the public.

Lord Ritchie-Calder is best known as the former journalist Ritchie Calder, with a flair for explaining science to the layman, who contributed regularly to two now defunct newspapers—the *News Chronicle* and the *Daily Herald*. His political leaning has always been to the left—before the war he led marching strikers. In 1966, when he became a life peer, he accepted the Labour Party Whip in the House of Lords. This accords with what is believed to be the Prime Minister's view that metrication is potentially too political to be left to the technicians.

HONOURS

Scientists Honoured

PROFESSOR P. M. S. BLACKETT, President of the Royal Society since 1965, has at last accepted one of the four life peerages announced this week in the New Year Honours; his wife will no longer be able to make her favourite joke, "Not even the Labour Party can make a Lady of me". Bernard Katz, professor of biophysics at the University of London, and Michael Francis Addison Woodruff, professor of surgery at Edinburgh University, have both been knighted. Also knighted are James William Howie, medical director of the Public Health Laboratory Service; Stephen John Watson, lately professor of agriculture and rural economy at the University of Edinburgh; Derman Guy Christopherson, vice-chancellor at the University of Durham, and Christopher Sydney Cockerell, consultant at Hovercraft Development Ltd.

SELENOLOGY

Album of the Moon

from our Astronomy Correspondent

THE magnificent photographs of the Moon taken by Borman, Lovell and Anders which have captured the front pages of the newspapers are unlikely to add as much to scientific knowledge as proponents of manned