REVISING THE LAW OF PATENT

THE Patents Liaison Group was originally constituted in accordance with proposals made by Mr. R. Maudling, then President of the Board of Trade, in June 1961, to formulate views on the proposals of the Common Market countries with regard to a common patent system. The Group, at his further request, also advised the Minister on a draft of a Convention on unification of points of patent law proposed under the aegis of the Council of Europe and signed by the United Kingdom and other countries at Strasbourg on November 27, 1963. The Group was reconvened to consider the Convention and to report on those changes in the Patent Act, 1949, which would be involved in the ratification of the Convention by the United Kingdom. For this purpose, the Group, of which Mr. G. W. Tookey was chairman, was enlarged by representatives of the General Council of the Bar and the Law Society, in addition to those from the International Association for the Protection of Industrial Property (British Group), Association of British Chambers of Commerce, Chartered Institute of Patent Agents, Federation of British Industries, National Association of British Manufacturers, Trade Marks, Patents and Designs Federation, and the British National Committee of the International Chamber of Commerce who were originally included.

The report now presented to the President of the Board of Trade* points out that the Group's task was not to translate the provisions of the Convention into a United Kingdom statute. Instead, it was to undertake the complicated business of amending the existing Statute so as to remove parts which are inconsistent with the Convention and to insert in their place new provisions which conform to the requirements of the Convention and are couched in language which fits the general pattern of the Statute and is not ambiguous. The amendments should also make clear which precedents are applicable for the future and which are not. Much case law has been built up from the days of the Statute of Monopolies in 1623, and the definition of 'invention' is still based on the language of that early Statute. This Statute—it has been the subject of much judicial interpretation—requires alteration in certain respects.

The Group's recommendations are collected under four general headings, and those of major scientific interest are to be found under the first and third of these, relating to the novelty and inventive step and to patentable inventions, respectively. In the Convention an invention is stated to be new if it does not form part of the state of the art. This is defined as comprising "everything made available to the public by means of a written or oral description, by use or in any other way, before the date of the patent application or of a foreign application, the priority of which is validly claimed". Some extensive revision of the Patents Act, 1949, will be required to fulfil the obligations on this subject resulting from the Convention. The limitations of place and time in United Kingdom law must give way to the concept of absolute novelty and the law must be revised so that an invention is not regarded as new if in any way it has been made available to the public in any part of the world before the priority date of the patent application for the invention, or is obvious having regard to what has thus been made available to the public.

The group recommends that Section 32 (1) (*e*) and (*f*) of the Patents Act should be amended to read: "(*e*) that the invention, so far as claimed in any claim of the complete specification, already formed part of the state of the art as it existed before the priority date of the claim; (*f*) that the invention, so far as claimed in any claim of the complete specification, was obvious and did not involve any inventive step having regard to the state of the art as it existed before the priority date of the claim".

Further, the definition in Section 101 of the Act should include the following definition of the 'state of the art': "'State of the art' means all matter available to the public in the United Kingdom or elsewhere by means of a written or oral description, by use, or in any other way, so that persons skilled in the art are or can become acquainted with such matter."

It will be necessary to revise Section 7 of the Act so as to remove the provisions which limit the official search to United Kingdom patent applications dated within 50 years of the filing date; to delete the Sections relating to secret use; and to abolish the concepts of "invention of importation" and of the communicated inventions. Section 15 will also have to be revised so as to permit reference to any document published in the United Kingdom or elsewhere. Further amendment will be necessary to the Section protecting inventions displayed at an exhibition certified by the Board of Trade or described in papers read before learned societies, and the Section protecting inventions communicated under international agreements will have to be deleted.

With regard to patentable inventions, the Group considers that there is nothing in the Strasbourg Convention which would prevent the United Kingdom from formulating a new definition of invention. However, none of the proposals which it examined was free from difficulties, and the Group is satisfied that it is preferable not to frame a definition. The field covered by science and technology is already extremely wide, and, with the progress of time, the boundary of patentable subject-matter will inevitably increase. The Group considers it wiser not to seek to put a limit on what should be regarded as an invention and recommends that the new Act should not define 'invention' with any greater particularity than is necessary to conform to the Convention. Deletion of the existing definition and its replacement by wording to the effect that patents may be granted for inventions which can be made or used in any kind of industry, including agriculture, will lead to some uncertainty until the Courts have established some case law, but the Group was convinced that this flexible course was preferable to a restrictive one.

To some extent, the area of uncertainty can be narrowed by inserting in the Act a short list of exceptions. Two such exceptions are stipulated in the Convention itself: inventions contrary to *ordre publique* or morality and inventions in respect of plant or animal varieties. These the Group recommends should be specifically excluded: exclusion of plant or animal varieties from patentability is necessary to avoid overlap with the Plant Varieties and Seeds Act, 1964. The Group doubts, however, whether a distinction can or should be drawn between processes which are 'essentially biological' and those which are not, bearing in mind that any process for treating plants or animals which utilizes the natural functions of living matter will be more or less 'biological'. It recommends, therefore, that there should be no specific exclusion in respect of the plants or animals.

In addition to these exclusions, the Group recommends six other categories of exclusion, which might, in fact, be found by the Courts not to be 'inventions' within the meaning of the Act. These are: (i) methods of calculation: theoretical ideas and scientific principles; (ii)

* Board of Trade. *United Kingdom Patent Law: The Effects of the Strasbourg Convention of 1963.* (Report on legislative changes which would be involved in the proposed ratification by the United Kingdom of the Strasbourg Convention on the unification of certain points of substantive law on patents for invention by the Patents Liaison Group.) Pp. 18. (Cmnd. 2835.) (London: H.M.S.O., 1965.) 1*s*. 6*d*. net.

business schemes (for example, methods of office management); (iii) commercial, financial and propaganda schemes; (iv) treatment of human beings; (v) designs or arrangements in which the novelty resides solely in appeal to the eye, (vi) designs or arrangements which serve only to convey information and in which the novelty resides solely in the information conveyed.

The Group recommends that adequate steps should be taken to enlighten agricultural interests as to the changes in the United Kingdom law which are contemplated and to explain the reasons for these changes.

The Group points out that the unification Convention does not completely solve the problem of how to resolve conflict with prior unpublished applications. Article 6 of the Convention broadly requires that parties of the Convention shall not allow double patenting. The present statutory provisions in the United Kingdom rest basically on the principle that double patenting is to be avoided, but the interpretation given to these provisions in recent years has produced serious difficulties. The Group agreed generally that a straightening out of United Kingdom law is necessary to bring some real sense into this subject quite apart from the requirements of the Convention. Generally, the Group is also agreed that a later patent should not be granted if it purports to prevent the working of the invention as claimed in an earlier patent in any manner in which a competent person would normally work it. Some suggested forms of wording for this 'prior claim' proposal are appended to the report. Nevertheless, the Group concludes that there should be no requirement that a patent granted on the earlier application should be granted, or valid if granted.

THE FUTURE OF NUCLEAR POWER

THE John Macrossen Lecture was given by Sir John Cockcroft in the same year as the third International Conference on Atomic Energy was held at Geneva. The Lecture is a very brief statement of the prospects of the economic development of nuclear power at that date, a subject very fully dealt with at Geneva. The capital costs per kW of electricity generated by the stations built by industry for the Central Electricity Generating Board will almost have halved in the 6 years between the completion of the 275-MW Berkeley station and the 1,180-MW Wylfa nuclear station, each of them containing two reactors. The fall is due in large part to the increased size of the unit; fuel costs have also fallen, but the overall cost of power by any calculation is still higher than that from coal-fired stations of the same dates.

The advanced type of gas-cooled reactor was expected in 1964 to cost less than a coal station of the same date, and within a year of the delivery of this Lecture the firm tender prices for the Dungeness *B* nuclear station showed that this was, in fact, the case, provided the station is built at the tender price.

In the United States similar dramatic falls in costs have been experienced with their water moderated reactors; and Canada's heavy-water reactor is expected to have very low fuel costs, although it will have a high capital cost.

These types of reactors, by the end of the century, would be using 100,000 tons of uranium per annum, on reasonable assumptions as to the rate of development of nuclear stations. To avoid a rise in the cost of raw materials, more of the uranium-238 must be used; the experimental fast reactor at Dounreay has operated well enough now to justify a design study for a 1,000-MW reactor to be ready for the late 1970's; this might herald a new generation of stations to use up the plutonium from the slow-neutron reactors and the fast reactor might breed 1·5 times the amount of fuel it uses.

Fusion reactions still remain as a possibility and as a hope for the future; stability of the confined plasma at low pressures has been achieved but not at high densities. It would be idle at present to predict whether these schemes will be successful. T. E. Allibone

NUMERICAL METHODS IN SUBSONIC FLUID DYNAMICS

A SYMPOSIUM on "Numerical Methods in Subsonic Fluid Dynamics" was held at the National Physical Laboratory during September 27–29, 1965, the local organization being shared jointly by the Aerodynamics and Mathematics Divisions. More than one hundred and thirty visitors from industry, universities, technical colleges and Government establishments, including several from Europe and the United States, participated in the programme, which was divided into four sessions, each consisting of two general survey lectures followed by three parallel discussion groups *A*, *B* and *C*. The subjects of the discussion groups were arranged so that *A* was a follow-up of the general lectures of the session, *B* was an independent subject introduced by a scheduled talk, and *C* was a more specialized subject determined by popular demand from the participants themselves.

The original initiative for the meeting came from the Aeronautical Research Council, which had some two years ago anticipated the need for a comprehensive examination of the role of the computer in fluid dynamics by setting up a Computer Panel. Quite early on, it became clear to the Panel that the full potentialities of the modern 'third generation' computer were not being adequately explored; consequently this symposium was arranged with the objects of elucidating some of the problems involved in the application of computers to fluid motions, and of stimulating interest in the exploration of new approaches to the subject which might be brought within the realms of possibility by the latest computing facilities.

The participants were welcomed by Dr. R. C. Pankhurst, representing the Acting Director of the Laboratory. Prof. B. Thwaites of Southampton University, chairman of the Computer Panel, then gave an introductory talk, in which he outlined the main problems facing the symposium. He suggested that scientists now needed to re-examine their motivations in research—were they interested mainly in mathematical analysis (which, in fluid dynamics, is very difficult) or in numerically expressed results? The answer might be different for the designer and for the 'pure' scientist. In either case, however, it was necessary to take into account the possibility of currently outstanding problems being solved, even within the next ten or twenty years, at the touch of a button; for this should surely influence the directions which work will take in the intervening period. Thus he emphasized the importance of directing the discussions towards what will be done in the future.

This was followed by a talk on "The Relevance of Numerical Analysis" by Prof. L. Fox of the University of Oxford. He concerned himself mainly with the finite-difference solution of the relevant types of partial differential equation, paying particular attention to the solu-