

Heidelberg and Academic Freedom

TRANSLATIONS of extracts of speeches made at the ceremonial dedication of the Philipp-Lenard-Institut at Heidelberg in December last were given in an article in *NATURE* of January 18, p. 93. The speech made by Prof. J. Stark, president of the Physikalisch-Technische Reichsanstalt and of the Deutsche Forschungsgemeinschaft, is published in full in the February issue of *Nationalsozialistische Monatshefte*. This journal, edited by the "Reichsleiter für weltanschauliche Schulung", Alfred Rosenberg, is intended to be the leading periodical for German intellectual and academic circles. Prof. Stark's speech expresses even more extreme views than were represented in the extract given in *NATURE*. It appears from a letter published this week in our correspondence columns that 1935-36 is not really the 550th anniversary of the University of Heidelberg, but the 549th. The facts as stated by our correspondent have been verified by reference to original sources at the British Museum. It has seemed curious to many of us that the University should have arranged for a half-century celebration, but it is even more strange that the 549th anniversary should have been chosen for it. No news has reached us officially from scientific societies or universities as to whether they propose to send delegates or not, or merely to present addresses. Announcement has been made, however, in the public Press, that the senate of the University of Birmingham has unanimously decided not to accept the invitation. The Universities of Oxford and Cambridge will also probably decline to send representatives. The Cambridge branch of the Association of Scientific Workers has sent to *NATURE* a letter, in the course of which it is urged that "a refusal to send representatives must not be interpreted as an affront to the University of Heidelberg, but as an indication that scientific opinion in Great Britain condemns the atmosphere in which members of that University are compelled to work".

Mr. H. G. Wells's Film "Things to Come"

MR. H. G. WELLS is the only man of letters who understands the scientific spirit, and has consistently urged the use of it in the solution of social problems. In his imaginative romances, as well as in works on social, religious and political questions, he has always presented science as a progressive influence and has remonstrated against the unworthy ends for which it is often used. The hope expressed in his "Anticipations" and "A Modern Utopia" took different form in "The Shape of Things to Come" published two years ago and was accompanied by a warning of disaster unless human purposes were determined by reconstructed principles. Science has put into the hands of civilised man the power to destroy himself or to make the world a celestial dwelling place; and the sooner this is widely realised the safer will the world be for humanity. There is no better way to-day of making this message universal than through the motion picture; and this is done in the marvellous film "Things to Come", the world première of which was given in London on Friday,

February 21. The film has been produced by Mr. Alexander Korda; and Mr. Wells, whose scenario of it was noticed in *NATURE* of January 11 last, has taken an active part in the production of the picture.

THE general story is that of the destruction of the civilised world by war-fever and pestilence, and after almost every material structure had been destroyed and intellectual culture had been lost, a new world government arises in which scientific leaders have control. Through the three generations represented in the film, some basic human attributes remain unchanged, and they are represented by Dr. Harding's devotion to medical research even when the world is in ruins; Cabal, who never falters in his confidence in the power of science to promote human welfare; the military autocrat, who regards gladiatorial conflicts as the only means of securing peace; his mistress, Roscana, with the eternal 'sex appeal' diverting ethical aims; Theotocopulus, the sculptor who even in a beautiful and regenerate world, raises a revolt against mechanisation and looks with longing to the Golden Age of the past; and finally the two young people who, still with the spirit of adventure in them, start for a journey around the moon in spite of all efforts of reactionaries to restrain them. It is scarcely within our province to comment upon the technique of this remarkable production, but we have no hesitation in saying that every moment and movement of the picture has a meaning and that the film stands as high above the usual sentimental stock of the picture house as a triumph of creative art does above a gaudy advertisement or a classical literary work is superior to a 'penny dreadful'.

The Lumière Celebration in London

WHILE the credit of inventing cinematography rightly goes to W. Friese Green, whose patent, obtained in 1889, covered the production of a perfect sequence of photographic images on a band of celluloid film taken by one camera with one lens and from one point of view, it remained to the brothers Lumière to invent the *cinématographe* and to show moving pictures to the public. In December 1895, Louis Lumière gave his first exhibition in Paris (see *NATURE*, Nov. 16, 1935, p. 803) and the new invention was introduced to British audiences through the enterprise of the Polytechnic in Regent Street on February 20, 1896. Figures given by Mr. Simon Rowson at a recent meeting of the Royal Statistical Society show how important is the position now held by the cinema in the social life of the country. In 1934, 957,000,000 people in the United Kingdom paid £40,950,000 to see moving pictures.

TYPICAL of the change which has come about and of the present status of the industry is the fact that the Polytechnic, which was the scene of the first exhibition, now possesses a School of Kinematography where students receive technical training in all branches of the industry. To honour M. Lumière, a celebration was held in the Polytechnic on February 20, the fortieth anniversary of the date on which his

invention was first shown to the English public. M. Lumière was present and was the recipient of a gold fountain pen and pencil as a memento of the occasion. The events of forty years before were re-enacted and copies of some of the films then shown were screened. In one or two cases the original projector was used, and the quality and steadiness of the pictures were remarkable. Among other films shown were early news reels and examples illustrating the stages in the development of motion picture technique and invention, including two short colour sequences. Fyvie Hall contained exhibits, many of them from the collection of Mr. Will Day, illustrative of the history of cinematography, ranging from moving lantern slides of one hundred years ago to examples of the most modern motion picture cameras and projection equipment. The exhibition remained open to the public and the films were shown for three days.

Utilisation of Fuel

TECHNICAL problems of the utilisation of fuel have long been a popular subject of discussion, but the troubles of the coal trade have recently evoked an unusual number of contributions. Sir Harold Hartley, in a paper before the Institution of Chemical Engineers, examined our "National Coal Resources", Sir Frank Smith discussed "Coal, Power and Smoke" before the Junior Institution of Engineers, Sir William Larke addressed the Fuel Luncheon Club, an anonymous "Observer" has recently issued a pamphlet on "Miners, Owners and Mysteries", and Mr. O. W. Roskill discussed before the Institute of Fuel the "Co-ordination of National Fuel and Power Supplies", while chairmen of public utility companies have much to say about coal when addressing their shareholders at this season. The reader will find considerable repetition in these discussions, but cannot escape the impression of the extreme complexity of the problems.

THE technical problems involved, though naturally complicated, are obviously capable of solution, and indeed would present no fundamental difficulty if national fuel services were being planned *ab initio*. The more difficult questions arise from the necessity for reconciling conflicting financial and industrial interests, conflicting local interests, conflicting national interests such as economics and defence, the promotion of fuel economy and the provision of employment. Most of the proposals for promoting efficiency or economy would involve a reduction, at least for a time, of labour or employment for some, and the adjustment of the coal industry to a new level of stability will clearly be long and difficult. Mr. Roskill, after surveying all the coal-using industries, advocates a concentration of the Ministry of Mines, Transport and the relevant section of the Board of Trade, into a new Ministry of Fuel, the chief object of which would be to reconcile now competing interests of the fuel industries. The "Observer", apparently an engineer, believes that the coal trade should adopt the methods of the engineering industry in its treatment of labour problems.

The Municipal Smoke Problem

THE problem of air pollution by smoke has long engaged the attention of scientific workers, but only latterly has the public realised that its solution is of first-class importance to the civil life of the community. The presence of pollutants in the atmosphere is proof of wastage of fuel. If fuel is properly and completely burned, the maximum amount of heat will be obtained without smoke, whereas if it is incompletely burned, smoke will be produced. The ultimate source of all heat, or energy, is the sun, which in its direct form of sunshine should be accessible, and in its indirect form of fuel should be conserved. Air pollutants must therefore be attacked for the two-fold reason that they blot out the sunshine, and are produced only by wastage of fuel. In November last, at the request of members of the General Science Club of teachers in the Pittsburgh High Schools, who considered it essential for all students to have a rudimentary knowledge of fuels and their uses, Messrs. H. B. Meller and L. B. Sisson, of the Mellon Institute of Industrial Research, issued a pamphlet on the subject. Therein are listed the fuels most commonly used, namely, coal (anthracite, semi-bituminous and bituminous), coke, oil and gas (natural and manufactured). Data are adduced to show in as compact a form as possible of what these fuels are composed, how and why they burn, what products they give off and whether such products exert a beneficial or deleterious effect. Finally, indication is given of the efforts which have been made to date to rid the atmosphere of pollutants. The booklet is in effect an exposition of facts which every citizen should know if he is to help in the solution of the problem of obtaining maximum heat from fuel with minimum air pollution.

The Indian Academy of Sciences

IN his presidential address in January of last year to the premier Indian academy, the National Institute of Sciences of India, Sir Lewis Fermor welcomed the formation in Bangalore of the Indian Academy of Sciences, which owes its inception to the energies of Sir Venkata Raman. The Indian Academy of Sciences is already well known through the medium of its publications, and in December last Sir Venkata Raman delivered his presidential address at the first annual meeting, which was held in Bombay. In this he clearly set forth the aims of the Academy, and at the same time he appealed for funds to enable it to continue and extend its activities, and also for the erection of a suitable building for which the generosity of the Maharajah of Mysore had already provided a site adjacent to the Indian Institute of Science. It is somewhat surprising to find in the address no reference to the National Institute of Sciences with which, from Sir Lewis Fermor's remarks, we had gathered it was to co-operate. We trust that the absence of such reference does not imply that this co-operation has ceased. If the growing body of scientific thought in India is to exercise that influence on the government of the country, which is its due, or if it is to be adequately repre-