

alphabetical order by the first letters of the first word. They must be grouped according to the subjects or situations on which they have a bearing, and be accompanied with all explanations necessary for the right understanding of their import and implications. Proverbs that are applicable in different situations may have to be repeated under

different headings; but to judge by my own experience, such repetitions need not be very many.

If due attention is bestowed upon the collection of proverbs, we may hope that the scientific study of them will keep pace better than hitherto with the progress made within other branches of folklore.

News and Views.

WHATEVER differences of opinion may exist with regard to Sir James Jeans's deductions concerning the origin and destiny of the physical universe, they have at least the cardinal virtue of making us think. His latest presentation of his views on these matters, which we publish as our supplement this week, is certainly no exception to the rule. The story he tells, with his customary skill in arranging his material and illustrating difficult points by telling analogies, leaves the reader sitting long in his chair, musing on old problems in the light of the new knowledge. In some respects the outlook has changed almost beyond recognition from that of our fathers and grandfathers; in other, and perhaps deeper, respects it remains very much as it has always been. The idea of a degradation of the physical universe by a series of sudden mutations appears to have taken the place of the old conception of a continuous process, and the change, from the point of view of the ordinary thinker, is by no means a superficial one. Spontaneous changes, such as those of radio-activity, have an air of mystery about them. Why should one atom of uranium suddenly undergo a metamorphosis while its apparently exactly similar neighbour remains unchanged for thousands of years? Fifty years ago such a conception would have been regarded as unscientific—a return to magic rather than a step forward. The quantum theory as a whole, in fact, when considered in detail, contains an element of arbitrariness which would not have been permitted in the older physics. It is only when we come to statistical results that law and order once more resume their reign. There still seems to be no escape from the second law of thermodynamics. If our view of the process of degradation of the universe has changed, the degradation itself still seems to be a fact, and in the place of an ultimate universe of dead, cold matter, we have an ultimate universe of dead, cold radiation. The difference scarcely seems a matter of vital concern.

DEGRADATION has an unpleasant sound, and it may be that the picture that Sir James Jeans draws will seem to many a gloomy and forbidding one. It can scarcely be repeated too often that any ideas now possible on such a subject as the fate of the universe can be regarded as little more than the first glimpse of a vast ocean from a point on the shore. They seem complete and self-contained because, like the ocean, they are necessarily bounded by a horizon, but the skyline must not be mistaken for a real limit. The very compactness of our view of the cosmic process is perhaps itself a sign that we have not reached finality. It is not for science to 'believe because it is impossible,' but in these matters we may well take

the conjugate course of disbelieving because it is possible. But, at the same time, tentative attempts to survey the universe are not on that account to be dismissed as useless. After we have heard all that modern men of science have to say, we may have to come out by the same door that in we went, but we shall have heard great argument and come out wiser than before. Perhaps for the present we can learn no greater wisdom than that a degradation of the physical universe is not necessarily a degradation of the world of spirit. Sir James Jeans has already told us that it is only on the dead ashes of matter that life can begin to exist. Might it not be that only in the dead smoke of radiation can life attain its fullest development?

HEARTY congratulations are due to Dr. James W. L. Glaisher, F.R.S., mathematician, who on Monday next, Nov. 5, celebrates his eightieth birthday. Born at Lewisham, he was educated at St. Paul's School, afterwards proceeding to Trinity College, Cambridge, where he graduated second wrangler. A teacher of great distinction in mathematical science, embracing the whole of his working life, Dr. Glaisher has earned the esteem and gratitude of a host of academical pupils. Author of many original papers, most of the special mathematical journals in Great Britain owe editorship or guidance to his dutiful and long-continued labours. Dr. Glaisher has been twice president of the Royal Astronomical Society. In 1908 the London Mathematical Society awarded him the De Morgan medal, and in 1913 the Royal Society allotted him the Sylvester medal. He was president of Section A (Mathematical and Physical Science) at the Leeds meeting of the British Association in 1890. Dr. Glaisher's father, founder of the Meteorological Society, and pioneer in scientific ballooning, who himself, it may be recalled, passed the span of eighty years, is remembered in particular for his balloon ascent with Coxwell, the aeronaut, to a height of seven miles.

DR. CHARLES NICOLLE, director of the Pasteur Institute of Tunis, who has just been awarded the Nobel prize for medicine for 1928, in consideration of his work on typhus fever, is one of the most distinguished of living epidemiologists. His researches on typhus, which have been continued for more than twenty years, are of the utmost importance, as they have done so much to throw light on the causation of the disease and have greatly contributed to its effective prevention. Nicolle was the first to show that typhus fever could be transmitted from man to the chimpanzee, from which it could be passed on to the lower apes. Further investigations revealed that the

guinea-pig could also be successfully inoculated with the blood of a typhus patient, though the symptoms so produced were not so severe as in the experimental disease in the monkey, but merely consisted in a rise of temperature. The agent in transmitting the disease in man was shown by Nicolle to be the louse, especially *Pediculus vestimenti*, and to a less extent *Pediculus capitis*, while other parasites such as fleas, bugs, and mosquitoes had no such action. Lastly, Nicolle proved that the injection of the serum of convalescents from typhus fever conferred an immediate though transient immunity on those exposed to the disease. It may be noted in this connexion that in conjunction with E. Conseil, Nicolle was the first to show that the serum of measles convalescents possessed a similar protective value, and was thus the pioneer of a prophylactic method which has been widely used on the Continent. The value of the work of Nicolle and his assistants, which has been confirmed by all the other investigators of typhus, has been repeatedly illustrated in combating epidemics, particularly during the War, when the destruction of lice was found to be the most effective method of controlling the disease.

ON Oct. 25 the Bishop of Oxford unveiled a tablet in the Church of St. Peter-in-the-East, Oxford, to the memory of James Sadler, the "First English Aeronaut." Sadler was born in High Street, Oxford, in 1753 and died in George Street on Mar. 27, 1828. He was buried in the churchyard of St. Peter-in-the-East. The tablet has been erected by the Royal Aeronautical Society. Nothing is known of Sadler's early life except that, like his father, he was a confectioner. His first aerial voyage was made at dawn at Oxford, on Oct. 4, 1784, in a Montgolfier or hot-air balloon, and lasted about half an hour. The following year he made other ascents, but then turned his attention to chemistry, becoming assistant to the professor of chemistry at Oxford; from 1796 to about 1807 he was chemist to the Board of Naval Works at the Admiralty. He endeavoured to improve the steam engine and experimented on air-pumps, blasting, naval guns, and muskets. With the suppression of the Board of Naval Works, however, Sadler fell on hard times; but friends came to his assistance, and for a few years he again turned his attention to aeronautics and was well known for his ascents from Bristol, Cambridge, London, Brighton, Dublin, and other places.

AT the annual meeting of the Institution of Mining Engineers on Oct. 24, the president, Prof. H. Louis, presented the medal of the Institution to Sir Henry Hall "in recognition of his long and distinguished services in the advancement of the science and technology of mining." Sir Henry Hall was born at Sedgfield in the county of Durham, and served his time at the Haswell Colliery in the same county. He was appointed H.M. Inspector of Mines in the Swansea district in 1873, and in the following year was appointed Chief Inspector of Mines of the Liverpool district, to which the North Wales district was afterwards added, and he continued to hold this position until his retirement from the inspectorate in

1908. His work as an inspector was highly appreciated by all with whom he came in contact, his sound knowledge of all mining matters and conspicuous fairmindedness being universally appreciated. His main work was in connexion with the part that coal dust plays in colliery explosions. According to his own statement, his attention was first directed to this subject about 1874, and in 1890 he performed his famous experiments by which he demonstrated that coal dust, even in the absence of gas, could produce violent explosions. He gave evidence on this subject in the following year before the Commission appointed to investigate the matter, and in 1893 published his well-known report on "Coal Dust Explosions in Mines." Even after his retirement his advice and opinions were constantly resorted to on all mining matters, and it can fairly be said that there are few men who have rendered better service than has Sir Henry Hall to the coal-mining industry of Great Britain.

THE decision of the British Broadcasting Company not to undertake an experimental demonstration of radiovision by the Baird Company at present, has probably come as a surprise to many. Though it is difficult to judge when the art is sufficiently advanced to meet the public demand for entertainment, we should have thought that arrangements might have been made for the Baird Company to give a few experimental demonstrations from one of the B.B.C. stations which could be received by those of the public who are interested. The public would then be in a better position to judge whether broadcasting radiovision in Great Britain was desirable or not. In the United States the WGY station at Schenectady has been broadcasting a complete drama called 'The Queen's Messenger' by radiovision. It seems to have been rather crude. The actor's head and facial expressions were faithfully transmitted, but when it came to action, merely the actor's hands pouring out a glass of wine, giving a ring, or holding a revolver could be seen. Each actor had to work in front of a white screen, a background which gave definiteness to his features. He was constrained to act within a very limited area and his features were heavily 'made up.' Those of the audience who knew the difficulties in the way were appreciative. Unfortunately, the optimistic accounts which have appeared in the press will lead to the disappointment of many who see the radio pictures for the first time. We see no reason, however, why preliminary experiments should not be permitted.

AT Edinburgh, on Oct. 25, the Secretary of State for Air discoursed to the Royal Geographical Society of Scotland on the dramatic way in which a novel and untried auxiliary arm has achieved the status of the Third Fighting Service. We are warned that the problem of air defence demands increasing expenditure. In some mitigation, the policing of uncivilised frontiers is found less costly with judicious use of the air arm, and fascinating glimpses were given of the effect of a flying display on the primitive mind. The application of air transport in unsettled territories is full of promise, but critical comment might be made

on the claim that civil aviation offers any serious competition to established railways and shipping lines, and the idea of mass migration by air within the British Empire has a somewhat airy basis. Civil aviation must be regarded at present mainly as a reserve, almost immediately available in emergency, to which the recent development of light aeroplane clubs promises an appreciable contribution. Expenditure in this direction may well produce better returns than further direct military expenditure, at least up to an appreciable proportion.

IN the somewhat optimistic references to airships in Sir Samuel Hoare's address, there is a welcome note of caution on the experimental nature of R100 and R101. The argument that we must build because others were building lost its force when the *Shenandoah* accident restricted American activities drastically. The argument is now used on the other side, that because British airships are being built, therefore the U.S.A. must do so too. The latest German airship is much smaller and less costly than the new British airships. The suggestion that it also is "as we believe, far inferior in design and construction to our own," seems less than probable, and it is a pity that the technical advisers should inspire such premature awards to their own ability. Apart from the question of airships, which is likely to remain contentious for some time to come, the speech commands confidence as a fair and balanced summing up of our air position in its vital relation to the security of Great Britain.

STUDENTS of living creatures will find much of interest in the series of animal paintings by Mr. C. E. Swan, on view in the Art Gallery at 14 Brook Street, New Bond Street, W.1. The paintings, fifty-two in number, are in the main studies of mammals, and especially of the larger carnivora. Lovers of the London 'Zoo' will here discover the portraits of some of their old favourites. Mr. Swan knows his animals, and he is particularly happy in rendering their expressions, as may be seen (to mention but three examples) in "Marcus" (No. 45, the well-known orang which lived some time ago in the 'Zoo'); in "Bos Caffer" (the African buffalo, No. 5); and in "Wandered from the Lair" (the two lion cubs looking at a snake, No. 26). The different characters of these two cubs may readily be perceived and understood by anybody who has ever made an intensive study of the various characters of a family of young carnivores. The paintings will remain on exhibition until Nov. 6.

THE lecture on "Science in Western Civilisation," which Mr. J. B. S. Haldane delivered to the Fabian Society on Oct. 25, was a reasoned plea for science in government, or, more correctly, the 'scientific viewpoint' in national affairs. Mr. Haldane would be satisfied if the Cabinet contained one member with a knowledge of science equal to a second class in the Cambridge Natural Science Tripos, Part I. Motor taxation, he suggested, must have been devised by a lunatic. Commenting on science in journalism, the lecturer said that the *Times* announced the production of the compound of helium and mercury as an important item of news, when full particulars had

been published in *NATURE* some weeks before. On eugenic questions, he drew opposite conclusions from Dean Inge and Major Darwin. If the wish to leave adequate fortunes restricted the size of families, why not abolish hereditary wealth? Forecasting the future, some of those present might expect to see synthetic foods and drugs, such as cocaine and morphine. Russia was trying to inculcate a scientific outlook and habit of thought, and was doing valuable research work, especially in genetics; but he refused to predict whether its form of national organisation would survive economic tests. Appropriately for a Labour gathering, he insisted that the scientific man is usually a manual worker. The lecture was followed by a large audience with sustained interest and, at its conclusion, elicited questions, in reply to one of which Mr. Bernard Shaw was assured that he (Mr. Shaw) was not a scientific man.

RECENT additions to the British Museum (Natural History) include the following:—In the Department of Zoology, a specimen of the Congo race of Lord Derby's Eland (*Taurotragus derbianus congolanus*), one of the most important accessions of recent years, has been received from Sir Charles Markham, Bart. The Congo race is very closely allied to the typical Derby Eland, from West Africa. The eastern race from the Lado Enclave (*Taurotragus derbianus gigas*) is frequently referred to as the Giant Eland; in general proportions, however, the Lado animal does not markedly exceed either the typical Derby Eland or the Congo form. To the collection of birds have been added seven examples of the Altai Snow Cock (*Tetrao gallus altaicus*), a large grey bird about the size of a hen Capercaillie, and grey all over with the exception of the breast, which is white. These birds were purchased in Smithfield Market, a large number having been imported in cold storage from the Altai Mountains in Central Asia, where the bird is not uncommon at altitudes over 7000 ft. above sea-level. Other species are found in the different mountain ranges of Northern Asia. The Geological Department of the Museum has received a collection of more than 400 specimens of London Clay fossils, collected bed by bed at Bognor, Sussex, by the donor, Mr. E. M. Venables.

AN interesting addition to the Mineral Collection in the British Museum (Natural History) is a large block (139 lb.) of willemite ore from Franklin Furnace, New Jersey, specially presented by the New Jersey Zinc Company for demonstrating the fluorescence of minerals in ultra-violet rays. The pale-green willemite (zinc silicate) is intermixed with snow-white calcite, pink rhodonite, and black crystals of franklinite. Under the influence of the ultra-violet rays, the willemite shines up with a brilliant green and the calcite with a rose-red glow producing a very striking effect. Another valuable present is a large isolated and doubly terminated crystal of quartz (rock-crystal) weighing 34 lb. recently collected on the Piz Nor, Tavetsch valley, Switzerland, presented by Mr. F. N. Ashcroft. The Department of Botany has purchased 652 specimens of Indo-Chinese plants from the classic locality in which

Joannes de Loureiro made in the eighteenth century the collection (now in the Department of Botany) on which his "Flora Cochinchinensis" (1790) was based.

THE Director of the Meteorological Office is investigating the violent 'whirlwind' which struck the West End of London on Monday evening, Oct. 22, and has asked for the loan of the records of recording barometers or any other recording meteorological instruments from anywhere within a radius of about 20 miles of Charing Cross. Up to Oct. 26, he had received 92 communications, of which 74 were accompanied by barograms, and many contained other valuable information. From the records received it appears that the disturbance moved northwards along a straight track of small width, from near Victoria Station to Euston, passing near Piccadilly Circus and Oxford Circus. It then continued in the same line with diminished intensity. Barograms on the track differ from those off it in showing an additional very sudden fall and recovery of the barometer as the disturbance passed. They tend to confirm that the phenomenon had many of the characteristics of an American tornado. Disturbances of a similar kind occurred in other parts of England on the same occasion, in particular at Bromley, Kent, and near Hythe, Southampton. Records should be addressed to the Director, Meteorological Office (M.O. 12), Air Ministry, Kingsway, W.C.2.

PROF. RAYMOND A. DART, professor of anatomy in the University of the Witwatersrand, Johannesburg, has been elected a corresponding member of the Italian Institute of Human Palaeontology, Florence, "in recognition of their deep appreciation of the distinction he has achieved in their branch of science." The membership of the Institute is restricted to 50 Italians and 50 corresponding members.

PROF. W. E. DALBY will give an address to the London Local Section of the Institute of Metals, on Nov. 8, at 8 P.M., at the Royal School of Mines, South Kensington, S.W.7, on "The Plastic Contour." Prof. Dalby will deal with his own work on the mechanical properties of materials. The meeting is an open one, for which tickets can be obtained on application to the Hon. Secretary, Mr. W. T. Griffiths, c/o The Mond Nickel Co., Ltd., Victoria Station House, London, S.W.1.

THE reform of the British patent system is the subject of a report which is to be issued by the British Science Guild next week. Eighteen months ago the Guild appointed a committee to study the problems which arise in this connexion, under the chairmanship of Dr. W. H. Eccles. The members of the committee included well-known inventors, research workers, barristers, patent agents, and ex-officers of the Patent Office, and it is understood that they will put forward about fifty proposals of a practical character for the general improvement of the system and the remedy of existing anomalies and hardships. It is now twenty years or more since the last extensive amendment of the patent laws in Great Britain took place, and the time is undoubtedly ripe for a thorough overhauling,

in the light of the experience gained during that period, of this vital factor in industry.

MR. CECIL L. HORTON, of the Department of Lands, Jerusalem, writes to point out that the equation between the month of August and the Moslem month of Muharram in our Calendar of Customs and Festivals (see NATURE, Sept. 1, p. 334) is incorrect. The Moslem year being divided into lunar months, there is no fixed correspondence between the Islamic and Roman calendars. He adds that in the current year the 1st Muharram occurred on June 18, and next year will fall about June 7. Mr. C. A. Silberrad, of Forest Side, Epping, also writes to point out that in our note on his correction in reference to the Moslem year (see NATURE, Sept. 29, p. 489) it should have been made clear that the maximum variation of twenty-two days was in respect of the Hindu solar-lunar year only, whereas the Moslem calendar works back eleven days in each Christian year, and a whole year in thirty-three Christian years. In the course of this cycle of thirty-three years any Moslem festival occurs approximately thrice in every month of the Christian year.

MESSRS. Bernard Quaritch, Ltd., 11 Grafton Street, W.1, have just published Catalogue No. 420 of second-hand books on botany, agriculture, early medicine and surgery, forestry, fruit-culture, gardens and gardening, herbals, modern medicine, and tobacco. Of the 1800 works listed, many are exceedingly rare. The catalogue should be of great interest and value to librarians and others.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—A research assistant and demonstrator in geology in the University of Leeds—The Registrar, The University, Leeds (Nov. 5). A graduate assistant to teach physics and electro-technology at the Junior Technical School and the Technical College, Barrow-in-Furness—The Director of Education, Town Hall, Barrow-in-Furness (Nov. 7). A professor of economics in the University of Adelaide—The Agent-General for South Australia, Australia House, Strand, W.C.2 (Nov. 20). A professor of mathematics in the University of Western Australia—The Agent-General for Western Australia, 115 Strand, W.C.2 (Dec. 18). A lecturer in economics and public administration in the Department of Adult Education of University College, Nottingham—The Registrar, University College, Nottingham. A Drapers' Company research scholar in dyeing at the Huddersfield Technical College—The Principal, Technical College, Huddersfield. A junior assistant under the Directorate of Explosives Research of the Research Department, Woolwich—The Chief Superintendent, Research Department, Woolwich, S.E.18.

ERRATUM.—The first sentence in the third paragraph of the letter by Messrs. Aborn and Davidson, entitled "X-Ray Studies of the Structure of Salts Adsorbed on Cellulose," in NATURE of Sept. 22 (p. 440), should read: "Investigations were made both with starch and with cellulose in the form of filter paper."