

News and Views.

THE King has approved of the following awards this year by the president and council of the Royal Society: A Royal medal to Sir William Hardy for his pioneer work on colloidal chemistry and the theory of lubrication. A Royal medal to Prof. A. V. Hill for his distinguished work on the physical and chemical aspects of muscular contraction. The following awards have also been made by the president and council: The Copley medal to Sir Frederick Hopkins for his distinguished and fruitful work in biochemistry. The Rumford medal to Sir Arthur Schuster for his services to physical science, especially in the subjects of optics and terrestrial magnetism. The Davy medal to Sir James Walker for his work on the theory of ionisation and ionic equilibria in solution. The Darwin medal to Dr. D. H. Scott for his contributions to palæophytology, particularly in relation to the period of coal. The Hughes medal to Admiral Sir Henry Jackson for his pioneer work in the scientific investigation of radio-telegraphy, and its application to navigation.

THE following is a list of those recommended by the president and council of the Royal Society for election to the council at the anniversary meeting on November 30:—*President*—Sir Ernest Rutherford; *Treasurer*—Sir David Prain; *Secretaries*—Mr. J. H. Jeans and Dr. H. H. Dale; *Foreign Secretary*—Sir Richard Glazebrook. *Other Members of Council*—Sir Hugh Anderson, Dr. F. W. Aston, Prof. L. Baird, Prof. F. O. Bower, Sir Archibald Garrod, Prof. E. J. Garwood, Sir Thomas Heath, Prof. J. P. Hill, Dr. P. C. Mitchell, Prof. R. Muir, Sir John Parsons, Sir Robert Robertson, Mr. A. A. C. Swinton, Sir Gilbert Walker, Sir James Walker, Mr. W. C. D. Whetham.

THE announcement that Sir Alfred Yarrow has made a donation of 10,000*l.* to the funds of the British Association is of particular significance, as showing the appreciation of scientific study and research by a great leader of industry. A few years ago another pioneer of engineering science—Sir Charles Parsons—made a like gift to the Association; and it may be hoped that the generous lead thus given will be followed by other representatives of progressive industry which benefit directly or indirectly by the advancement of scientific knowledge. Sir Alfred Yarrow, feeling that the present urgent needs of the British Association, in its work for science, should receive precedence over provision for the distant future, has made it a condition that his gift should be expended, as to both capital and interest, within a period of twenty years. Sir Charles Parsons has expressed himself similarly with regard to his gift. Through these gifts, and by the provision for their use in a single generation, the Association will be able to strengthen its powers of obtaining general attention for the objects of science, and of affording more steady assistance to scientific research in directions indicated as desirable during the deliberations of its various sections at the annual meetings.

WE learn with great pleasure that no less an artist than Sir William Orpen has consented to paint the portrait of Prof. J. A. Fleming, whose many friends and admirers, as we have already announced, are raising a fund for this purpose. The portrait is to hang in University College, London, with which Prof. Fleming has been so long and honourably connected, and no doubt Sir William Orpen's willingness to paint the picture is in part due to the fact that Sir William Orpen himself received his early artistic training at the Slade School, which is part of University College. A replica of the portrait is also to be presented to the Institution of Electrical Engineers, as representing the great scientific profession and industry for the advancement of which Prof. Fleming has done so much. In the popular view no doubt Prof. Fleming is chiefly known as the inventor of the famous 'valve', which, adapted as it has been in many forms to radio telegraphy and telephony, has made broadcasting possible. His other great activities as a teacher, and especially as a writer, must not, however, be forgotten. His many works, on alternating electric currents, on electric lamps, on electrical testing, and on electric wave telegraphy, are standard volumes, while his reminiscent account, "Fifty Years of Electricity," makes the most delightful and inspiring reading. It is an open secret that many years ago Prof. Fleming would, but for his unfortunate deafness, have been elected president of the Institution of Electrical Engineers, and to add to his many other qualifications for honour, he is well known as one of the most skilled and popular experimental lecturers on electrical subjects in the world. The subscription list for the portrait is still open, and intending contributors are asked to send their donations as early as possible to the honorary secretary of the Fund, Prof. W. C. Clinton, University College, Gower Street, London, W.C.1.

THE new science laboratories of the University College of North Wales, Bangor, were declared open on Tuesday, November 2, by Sir Joseph Thomson. A tour of inspection of the laboratories was made in the morning, and in the afternoon Sir Joseph addressed a gathering of about eighteen hundred people in the Pritchard-Jones Hall of the College. The science laboratories form part of the North Wales Heroes' Memorial, and consist of five separate buildings, which house the six Departments of Physics, Chemistry, Botany, Zoology, Agriculture, and Forestry. When completed, the whole memorial, which includes a memorial arch and a bursary fund in addition to the laboratories, will have cost a sum approaching 150,000*l.* Of this amount about 120,000*l.* has already been subscribed. The afternoon meeting was presided over by Lord Kenyon, president of the College. He read and presented to Sir Joseph Thomson an address in album form, and the laboratories were then thrown open to the public. The buildings are of one storey, with the exception of the agricultural block, which has two storeys. Each block covers a floor space of about

10,000 square feet. All the heating, gas, water hydrant, and electric mains which serve the different rooms are run in brick trenches under and between the buildings. By this means all the pipes and cables are readily accessible. Special mains have been laid by the Corporation. The physics block is furnished with a liquid air plant, and accommodation is provided for about 100 students and a dozen research men. Each research room is furnished with electric power supplies of 400 volts D.C. : 200 volts D.C., 150 volts from a battery (any voltage from 2 to 150 volts in steps of 2 volts can be obtained), and alternating current at about 220 volts and 50 cycles. The main laboratories, of which there are three, and the lecture rooms are provided with the same electric power supplies. The floors are of concrete, which is covered with cork lino for insulation purposes. The cable carrying the electric power and the battery leads run along shallow ducts in the floor. The department is furnished with a well-equipped workshop. A small hut has been erected a few yards away from the main physics building in which measurements in radio-activity will be conducted. The general lay-out and equipment of the other blocks are similar to those of the Physics Department.

THERE has recently appeared in the *Daily Express* a series of articles by leading men of science under the general title of "The Mystery of the Universe." The contributors are the Astronomer Royal (Sir Frank Dyson), Profs. Plummer, Eddington, and Andrade, Sir Oliver Lodge, and the Bishop of Birmingham (Dr. Barnes). The first four writers confine themselves in the main to an exposition of the leading facts and generalisations of modern physics and astronomy; Sir Oliver Lodge attempts "to weave together the four preceding articles and draw scientific conclusions"; and the Bishop of Birmingham considers the same material in relation to the much-discussed question of the connexion between religion and science. It is a matter for satisfaction that one of the principal London newspapers should publish such articles as these, and we hope the example will be followed by other daily papers from time to time. The influence of science on the life of the community is far greater than is commonly realised, and it is in every way desirable that at least the general outline of current research should be given as wide a publicity as possible. Nor can it be too strongly emphasised that this should be done by experts, and not by the ordinary reporter who, however well instructed he may be, has in practice often failed lamentably to give even an intelligible, much less an accurate, account of scientific matters. We offer our congratulations to the *Daily Express* on the excellent lead it has given in this direction.

A NOTEWORTHY feature of the series is that it deals exclusively with the physical sciences. Of the six contributors (considering only their scientific qualifications), three are astronomers, two physicists, and one a mathematician. This would perhaps seem fitting if the utilitarian aspects of science were in question, but they are scarcely mentioned; the emphasis, as the

title indicates, is laid on the unknown and the unapplied, and the fundamental relationships between science, religion, and philosophy form the background, concealed or expressed, of the whole. The exclusion of biology is to be regretted, for a symposium on the mystery of the universe which includes no discussion of life from the scientific view-point, must necessarily be unbalanced. The expressed conclusion that physical discovery brings us no nearer to a solution of the problem of the nature of life and mind makes the omission even more striking. If, however, we may take the subjects dealt with, and the manner of their treatment, as indicative of the trend of public thought in these matters, the change from the bitter squabbles of the last century between would-be advocates of religion and science is as welcome as it is complete. There is no longer a *conflict* between religion and science; there is a *relationship*, perhaps not yet discovered completely, which we seem to be able to approach with greater chance of success along the road of cosmic physics than along that of biology. This is, perhaps, the greatest advance which scientific philosophy has yet made.

THE authorities of the Science Museum at South Kensington have instituted a series of exhibitions of apparatus used in, and results obtained by, recent research, and the first of the series is now open to the public free. It deals with work which has been carried out at the National Physical Laboratory in the Departments of Physics, Metallurgy, and Engineering. The new hygrometers for cold stores, new thermal insulators, protectors against X-rays, new high vacuum pumps, apparatus for predetermination of the acoustical properties of halls, the composition of steels and other alloys, and the detection of defects in their interior by X-rays, furnaces for metallurgical investigations, and methods of testing the lubricating properties of oils under pressure are all shown, and later in the month it is proposed to show some of the results which have been obtained by the Adhesives Research Committee of the Department of Scientific and Industrial Research. These exhibitions will enable the general public to understand readily the advances which are now being made by research workers in science and how they may be applied in industry.

FOR some time past many students and others interested in Africa have felt that a special organisation, framed on an international basis, is urgently needed for the study of African linguistics and culture. Such an institution was desirable not only to continue work such as that carried on by the Hamburg Colonial Institute before the War, but also to collate, supplement, and extend the work of existing organisations such as, in England, the African and Geographical Societies and the Royal Anthropological Institute. The aim of the projected organisation was practical as well as scientific: it was intended not merely to promote African studies in the widest possible sense; it was proposed that it should, as the result of such studies, lay down lines for, and participate in, educating and training the African

native, by stages suited to his mentality and culture, for the inevitable clash of cultures when he has to meet conditions arising out of the European occupation and exploitation of his country. As a result of invitations issued after a conference held in London in September 1925, a considerable body of influential support has been obtained. The International Institute of African Languages and Cultures, as the new organisation has been named, will include among its members accredited representatives of the African Society, the Advisory Committee on African Education of the Colonial Office, of which the Secretary, Major Hans Vischer, has accepted the vice-directorship of the Institute, the Royal Anthropological Institute, the School of Oriental Studies, the Advisory Committee on Bantu Studies in South Africa, the National Research Council of the United States, the principal universities and learned societies interested in African studies of France, Belgium, Italy, Germany, Austria, and Sweden, and the missionary societies, both Roman Catholic and Protestant. Sir Frederick Lugard will act as chairman of the executive council. M. Delafosse, the well-known authority on Africa, and Dr. D. Westermann, equally well known as an authority on African linguistics, will be joint directors. An extensive programme of work, to a great extent but not entirely, linguistic, has already been mapped out. Further particulars of the Institute and terms of membership may be obtained from the temporary offices, Lever House, Blackfriars, London, E.C. 4.

THE *Rand Daily Mail* for September 20 contains a notice of a conference to be held at Potchefstroom which will endeavour to prove scientifically "that no reconciliation is possible between Scripture and evolutionary science, and that evolution is a false dogma of pagan origin and anti-Christian character." Among the points to be proved are the following: That the Bible alone explains the origin, essence, and final purpose of things. That there is a generally accepted theory of evolution, but there are no experimental proofs. That the facts of palæontology do not point to the gradual development of forms, but are explicable on the hypothesis of catastrophic change. That the fabulous age of the earth ascribed to it by geologists is an uncalled-for speculation. That the intimate connexion between man and the apes has not yet been proved. With regard to man and the apes, that descent is not the relationship between them has already been pointed out to the Fundamentalists of America by Prof. Osborn; but as for the other points raised, it is not our business to refute, but to direct attention to them. If they were raised seriously in the interests of scientific truth, there would be no cause for uneasiness; but as this is evidently a definite effort on the part of a theological faction to influence and organise ill-informed public opinion, we must regard it in a very serious light. Those who suppose that the cause of religion is helped by this sort of thing are deceiving themselves; there is nothing that can possibly damage it more than this ill-advised propaganda. It is especially dangerous in countries where democratic institutions are combined with a not very high

standard of general education. Sinister possibilities lurk behind this agitation, obscure as it may seem to those in England. Democracy, when it takes to persecution, can rival Torquemada, for from its verdict and sentence there is no appeal.

IN the *Nineteenth Century* for October Sir Frank Beaman has an article on "Psychology and Crime." He seems to be annoyed at the suggestion that psychology can have anything to offer towards the understanding of the criminal. With the actual administration of the law as it stands the psychologists would be quite in agreement with the writer. If the facts prove incontestably that A killed B, and if it is the law that any person who kills another is to be hanged, there is no more to be said. In law, though, as in other branches of knowledge, difficulties soon arise as to the exact connotation of the words and the exact sphere of application. It should be noted, too, that insanity is always "legal insanity"; insanity has a purely legal significance and has no place in medicine. Nearly half the article is by way of introduction, and we are given Sir Frank Beaman's views, expressed with dogmatic fervour, on the human factor in various sciences, political economy, the statistical method (which is very fallacious), the ignorance of medical practitioners (they do not know why some otherwise quite normal people are literally poisoned by eggs or by gooseberries), the variety of the human body, Mendelism (greatly over-vaunted), evolution (a question-begging term), psychology (the least trustworthy of the sciences), psycho-analysis (morbid and sensational), spiritualism (pretentious), the morbid taste of the general public, etc. The actual problem seems a little lost against this background. The general method is not unlike the Bellman's "What I tell you three times is true." There is something to be said for the more usual form of the statistical method.

THE Greenland expedition of the University of Michigan returned to America in September under the leadership of Prof. W. H. Hobbs, who gives, in *Science* of October 8, a short account of the work done during the summer. The base of the expedition was on Maligiak Fjord, fifty miles east of Holsteinsborg, where a meteorological station was set up. Pilot balloons were sent up to test the direction of the upper air currents. Some ninety balloons were traced to an average height of 7000 metres, several to 10,000 and one to 14,000 metres. Three meteorographs, with records intact, were recovered from *ballons-sondes* which had reached considerable elevations, in one case more than 1500 metres. An exploring party under Prof. Hobbs ascended the ice-sheet 100 miles east of Holsteinborg. Pilot balloons were traced to a maximum height of 5500 metres and wind observations were made at three-hour intervals at the surface. Self-registering meteorological instruments have been left at Holsteinborg to be used throughout the winter. Tidal observations were also undertaken. Prof. Hobbs plans to return to Greenland next summer with a larger expedition and to continue his studies of Greenland winds both on the margin and in the interior of the ice-sheet.

AN interesting correspondence in recent issues of the *Times* shows that the sound of the 'concentration shoot' at Portland on Saturday afternoon, October 30, was heard at great distances in the midland counties. There are records from Long Wittenham, near Abingdon (98 miles from Portland), Shipton-under-Wychwood and Shotover in Oxfordshire (103 miles), Bourton-on-the-Water in Gloucestershire (104 miles), Eton and Chertsey (108 miles), Bosbury in Herefordshire (112 miles), and Dunchurch near Rugby (141 miles). The wind at three of these places was roughly in the direction opposite to that of Portland. Moreover, the sounds were very distinct. At Eton and Bosbury the observers were working in their gardens. At Shotover, according to the president of Trinity College, Oxford, "the noise was so loud that we thought that it might proceed from some explosion at the Morris Motor Works, which lie to the south of the hill." The remarkable point about these observations is not so much the great distances of the places, but the unusual loudness of the sounds, which suggests that the places mentioned lie in an outer sound-area separated from the source by a silent zone.

THE paper read by Messrs. J. Beard and T. Haldane to the Institution of Electrical Engineers on November 4 was a very timely one, as they discuss the possibility of standardisation in the design of the systems used for distributing electric light. It seems certain that in ten years' time the supply of electricity to consumers in Great Britain will be at least doubled. It is very advisable, therefore, that piecemeal extensions of the various supply networks such as have sufficed in the past should no longer be made. The present time is most suitable for getting all the benefits of standardisation. The suggestions made are very helpful. Engineers have just adopted 230 volts as the standard pressure. One of the reasons for adopting this somewhat odd number is that when a three-phase system is used and 230 volts is used for lighting, 400 volts is available for power. As one of the pressures is equal to the other multiplied by the square root of three, it is impossible to make them both decimal. In the system of distribution proposed by the authors, the distributing pressure from the substation would be at 11,000 volts. It would then be transformed down to 400 volts and 230 volts by a four-wire three-phase distributing system. Continuity of supply is secured by having a duplicate high voltage supply. The low voltage cables are very convenient, having four equal cores inside a lead covering. The costs, however, which are independent of the load, are very large, the main item being the high cost of excavation for the distributor cables. This accounts for the rapid rate at which the total costs per unit delivered decrease with the load. If the load is doubled they are reduced by about one quarter. In our opinion, the adoption of a standard system such as that suggested by the authors would be in the interest both of the industry and of the country.

A PROPOSAL for a meteorological cruise in the Atlantic in 1927 is suggested in the *Meteorological Magazine* for September. The cruise is to honour the

memory of Colonel Chaves, the founder of the Meteorological Service of the Azores. The meteorological observations from the Azores were transmitted free by the Portuguese Government and have in the past added much to the possibility of successful forecasting of the weather in the British Isles. There is an eclipse of the sun on June 29 next year, of which the line of totality crosses the Irish Sea, and this is suggested as a starting-point. It is proposed that the cruise should occupy about 25 days, beginning with June 28. Readers of the *Meteorological Magazine* and others disposed to join in such a cruise are asked to communicate with Mr. C. J. P. Cave, vice-president of the Royal Meteorological Society, or with Sir Napier Shaw, lately Director of the Meteorological Office.

To the four series of picture postcards devoted to precious stones, and the two series representing decorative stones, the British Museum (Natural History) has now added two further series (D9 and D10) of cards illustrating crystals (London: British Museum (Natural History). 1s. each set). As before, each set consists of six attractively printed cards, accompanied by an explanatory leaflet. The leaflet includes a masterly little essay on crystallography, ranging in its scope from Steno's fundamental law of angles, announced in 1669, to the work of Laue and the Braggs on X-ray analysis. The first set of cards gives examples of cubic, tetragonal, hexagonal, and rhombohedral crystals; and the second of the remaining systems and of twin-crystals. Both in accuracy and attractiveness of reproduction, and in educational value, these new series fully maintain the high standard achieved by previous issues.

SENATORE G. MARCONI has been elected an honorary member of the Institution of Electrical Engineers.

DR. W. H. STEAVENSON, who contributed the article on Mars to our issue of November 6, has been elected president of the British Astronomical Association in succession to the Rev. C. D. Percy Davies.

It is gratifying to note that Mr. Mackay, who for several seasons past has been engaged in excavation at Kish in Mesopotamia, has been engaged by the Archaeological Survey of India to work on the sites in the Indus Valley on which remains of the earliest culture yet known in India, including the famous pictographs of Sumerian type, were discovered. Mr. Mackay's knowledge of Mesopotamia will be invaluable in these excavations should further material bearing any resemblance to Sumerian antiquities be brought to light.

THE Trustees of the Beit Fellowships for Scientific Research announce that Sir Otto Beit has promised to hand over to them a further sum of 15,000*l.* This will enable the Trustees to make all their appointments to fellowships for two years, instead of one year as has happened in the past. The fellowships are tenable at the Imperial College of Science and Technology, South Kensington, and since the foundation of the fund in 1913 there have been eighteen appointments. The extension of tenure will add considerably to the value of the fellowships from the point of view of the promotion of fundamental research.

SIR FLINDERS and Lady Petrie and other members of the British School of Archæology will leave in the course of a few days for Palestine, where the winter will be spent on excavating Egyptian remains in the southern area of that country. As announced since last season, the School, for the present at any rate, will discontinue work in Egypt itself owing to the difficult conditions in which archaeological research has now to be carried on. While it is not possible at this moment to mention any specific object in view, there are many problems requiring investigation. The work of the expedition will depend upon circumstances; but no doubt Sir Flinders Petrie hopes to secure further evidence bearing upon the Badarian culture, which, on his view, reached Egypt through Palestine.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—A professor of physiology in Presidency College, Calcutta—The Secretary to the High Commissioner for India, 42 Grosvenor Gardens, S.W.1 (November 20). A Principal of the Municipal Technical College, Dewsbury—The Secretary for Education, Town Hall, Dewsbury (November 20). A Warden of the Farm

Institute and Experimental Station at Askham Bryan, near York—The Joint Clerks, Yorkshire Council for Agricultural Education, County Hall, Beverley (November 30). An assistant horticultural instructor under the Kent Education Committee—The Director of Education, Springfield, Maidstone (November 24). An assistant lecturer in chemistry at University College, Swansea—The Registrar, Singleton Park, Swansea (November 27). A Vice-Warden for Ashburne Hall of Residence for Women Students of Manchester University—The Honorary Secretary, Ashburne Hall, Fallowfield, Manchester (November 29). An assistant lecturer in agricultural chemistry in the University of Leeds—The Registrar (November 30). A radiologist in the medical department of the Federated Malay States—The Private Secretary (Appointments), Colonial Office, 38 Old Queen Street, S.W.1 (December 4). An assistant in the department of zoology of the National Museum of Wales—The Director, National Museum of Wales, Cardiff (December 4). A professor of physical chemistry in the University of Bristol—The Registrar (December 10). A teacher of geography and mathematics at the Borough Polytechnic Institute—The Principal, Borough Road, S.E.1.

Our Astronomical Column.

COMETS.—Neujmin's periodic comet, 1916 II., has been detected by its original discoverer, Mr. Neujmin (presumably at the Simeis Observatory, Crimea), on Nov. 5 at 1^h 37.9^m U.T. in R.A. 10^h 10^m 56^s, N. Decl. 18° 29', magnitude 14.5. The date of perihelion deduced from the R.A. is Jan. 15.93, 1927, from the Decl. Jan. 15.80, 1927. The evidence is, on the whole, against the identity of the doubtful object photographed in 1920 with the comet, but is not yet decisive. The comet is approaching both sun and earth, so should become considerably brighter. The following corrected ephemeris is for 0^h U.T.:

	R.A.	N. Decl.	log r.	log Δ.
Nov. 16	10 ^h 43.1 ^m	14° 36'	0.1689	0.1411
20	10 54.9	13 1		
24	11 6.7	11 22		
28	11 18.5	9 38		
Dec. 2	11 30.2	7 50	0.1546	0.0922

A doubtful object (comet or minor planet) of the twelfth magnitude was discovered by Prof. J. Comas Sola, of Barcelona, Nov. 5^d 0^h, R.A. 2^h 56^m 36^s; N. Decl. 6° 31'; daily motion—1^m, south 3'. Later: Mr. B. M. Peek and Mr. G. Merton confirm the cometary character of the observations on the morning of November 10.

GIACOBINI'S COMET AND THE METEORIC DISPLAY OF OCTOBER 9.—Mr. W. F. Denning writes: "It appears certain that on October 9 the earth intersected a point in the orbit of Giacobini's comet, but that this point was about two months in front of the comet. The latter is due at perihelion on about December 10 next, so that taking the rate of velocity of the meteors at 14½ miles per second, as computed by the Rev. M. Davidson, the comet's place on October 9 was about 77 millions of miles distant along the orbit from the point of intersection with the earth on the above date. In 1900 the nearest approach of the two orbits was about 5½ millions of miles, but perturbations since that date have sufficiently disturbed the orbit of the comet to make it intersect that of the earth at this return. Had the comet arrived at perihelion two

months earlier this year, the conditions would then have favoured a meteoric display of exceptional grandeur. Dr. A. C. D. Crommelin's position for the cometary radiant is 265° + 54°, Mr. Prentice's radiant for the meteor shower was 263° + 54°, and the radiant of the fireball of October 9, as deduced by Mr. King and myself from a number of observations, is 262° + 55°, so the agreement is very good and near β Draconis."

MARS.—*Popular Astronomy*, Nos. 7 and 8, contain Report No. 37 of Prof. W. H. Pickering on the 1924 apparition of Mars. He commences with a discussion of the rotation period, and concludes that when allowance is made for Marth's change in the adopted position of Mars' axis in 1896, the period now generally employed, 24^h 37^m 22^s.65, represents the observations of the last fifty years. The research is complicated by the considerable changes of size and shape to which some of the dusky markings are liable.

In discussing various drawings of 1924, Prof. Pickering notes that there is considerable agreement among observers as to the position of the canals, but there is much personality as to the width assigned to them. An objection frequently brought by M. Antoniadi against the objective reality of the canals, based on their being drawn straight when far from the centre of the disc, is answered by a careful observation of the canal Amenthes-Thoth on October 19 and 20, 1924; it was respectively 16° east and 16° west of the centre of the disc. The curvature was clearly reversed in the two drawings, which corroborates the objective reality of the marking, and its close adherence to a great circle.

Proceeding to the question of the nature of the canals, Prof. Pickering notes his own opinion that the supposition of their being artificial explains more facts than any other, and that the regular patterns, such as pentagons and stars which were seen in 1892, 1907, and 1924, point in the same direction. He does not claim it as more than an hypothesis, but he considers that it is rendered more probable by his own observations of Martian clouds in 1922, and Dr. Wright's photographs in infra-red light in 1924, which indicated a considerable amount of atmosphere.