

two true Leonids and one slow, "stray," spent-looking shooting-star—in the strong moonlight, I should say that had the shower been in any force I should have seen more, and that therefore it must be taken to have been weak and to have gone past us inside the earth's orbit, as it did, presumably, in the past year or two. The radiant point was not determined, but it seemed to be in the usual position."

ing Fellows were elected the first members of the council of the Academy:—Sir W. R. Anson, the Right Hon. James Bryce, Prof. I. Bywater, Prof. T. W. Rhys Davids, the Rev. Prof. S. R. Driver, the Rev. Principal Fairbairn, Sir C. P. Ilbert, K.C.S.I., Sir R. C. Jebb, the Rev. Prof. J. E. B. Mayor, Dr. J. A. H. Murray, Prof.

Date, 1902.	Duration of watch (Local Time*);				Number of		Remarks. (* Local Times about 25m. slow on Greenwich Time.)
	From h. m.		To h. m.		Leonids	Other meteors.	
November 13 ...	12	0	1	0	0	0	Clear horizon-belt in E. and S.; cloudy afterwards.
November 14 ...	...		...	...	...	...	Cloudy throughout.
November 15 ...	12	0	2	0	0	1	Clear; moonlight } (2nd magnitude meteor; very slow.
„ 15 ...	3	0	4	0	0	0	
„ 15 ...	6	0	7	0	1	0	
November 16 ...	12	0	5	30	...	...	Cloudy.
„ 16 ...	5	45	6	15	0	0	Clear space around Leo.
November 17 ...	...		...	...	...	...	Cloudy throughout.
November 18 ...	12	0	4	0	0	0	Clear.
„ 18 ...	4	0	5	0	1	0	„
„ 18 ...	5	0	6	0	...	...	No watch kept.
November 19 ...	5	0	6	0	0	0	Clear.
Totals ...	...		...	2	1		

To complete the partial record which these notes supply of the shower's apparent strength this year, at somewhat near its time of greatest brightness, it may be hoped that more favourably observed particulars of the appearance of the Leonids may reach us yet from foreign places, and it might earnestly be wished, as well, that notes of the number of shooting-stars observed may have been kept at any distant station on the globe where possibly some sensible ramification and dense clustering of cometary dust along the wake of the departing meteor-stream may have happened to produce a fairly bright and numerous display of what it now appears probable may have to be known for some time to come, if not perhaps for all coming time, as the traditionally splendid celestial spectacle of the November Leonids.

A. S. HERSCHEL.

Observatory House, Slough, November 26.

Vitality and Low Temperatures.

THE remarkable results of the experiments of Prof. Macfadyen and others, on the effects of low temperatures on organic life, render it highly desirable to ascertain how long vitality can be retained under such conditions, and with liquid air now available it becomes possible to extend the inquiry for an indefinite number of years—a generation if necessary.

The fact that organisms, after having been maintained for six months at temperatures far below those at which vital activities are possible, have retained their vitality practically unimpaired, profoundly modifies the conception hitherto attached to the word "life," and if it can be shown that vitality can survive for a protracted period in these circumstances, the conclusion that it is a molecular function seems inevitable.

If such an experimental result were obtained, it would strengthen the possibility of Lord Kelvin's speculation that the origin of life on the earth may have been ultra-terrestrial, and this implies that the ultimate source would probably have to be looked for under conditions not common to, possibly transcending, our experience.

W. J. CALDER.

Stellenbosch, South Africa.

THE BRITISH ACADEMY.

AT a general meeting of the Fellows of the British Academy, held on November 19, the Right Hon. Lord Reay, G.C.S.I., president of the Institute of International Law and president of the Royal Asiatic Society, was elected first president of the Academy.

At the same meeting, the *Times* announces, the follow-

H. F. Pelham, the Rev. Prof. W. W. Skeat, Sir E. Maunde Thompson, K.C.B., Dr. A. W. Ward, Prof. James Ward.

At a meeting of the council, held on November 26, Mr. I. Gollancz, Fellow of the Academy, University lecturer in English at Cambridge, was appointed secretary of the Academy.

In the report of the anniversary meeting of the Royal Society, printed elsewhere in this issue, the position taken by the Royal Society in connection with the constitution of the British Academy is described. By its action, the Society limits its sphere of activity to that of the experimental sciences, and dissociates itself from the scientific study of archaeology, philology, philosophy, political economy and similar branches of knowledge. Its scope is thus to be that of the Paris Académie des Sciences—one of the five academies which constitute the Institute of France—and the British Academy will correspond very nearly to the Académie des Inscriptions et Belles-Lettres and the Académie des Sciences morales et politiques. Many men of science regret that the Royal Society has thus ceased to represent the totality of British scientific work, as it formerly did, and has limited its scope to certain branches.

ANOTHER HODGKINS GOLD MEDAL AWARDED.

IN March last, Dr. S. P. Langley, secretary of the Smithsonian Institution, appointed a committee to consider whether any discovery had been made since the award of the first Hodgkins gold medal in 1899, under the general terms of the gift, "the increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man," which would render it proper that such a medal should be again awarded. This committee consisted of the following distinguished men of science:—Mr. Richard Rathbun, assistant secretary of the Smithsonian Institution, chairman; Dr. A. Graham Bell, for electricity; Dr. Ira Remsen, for chemistry; Dr. Charles D. Walcott, for geology; Prof. E. C. Pickering, for astronomy; Dr. Theodore N. Gill, for biology; Prof.

Cleveland Abbe, for meteorology; Mr. William H. Holmes, for anthropology; and Mr. S. W. Stratton, for physics.

Owing to the absence of Mr. Rathbun, Dr. Reimsen served as chairman at a meeting of the committee held at the Smithsonian Institution in Washington, April 15. At this meeting, the following resolution was unanimously adopted:—

“That the committee recommend to the secretary of the Smithsonian Institution that it is desirable that one of the Hodgkins gold medals be struck, and that it be



awarded to J. J. Thomson, of Cambridge, England, for his investigations on the conductivity of gases, especially on the gases that compose the atmospheric air.”

The finding of the committee being approved by the secretary, steps were at once taken to have the second Hodgkins gold medal struck, under the personal supervision of its designer, M. J. C. Chaplain, of Paris. The medal (one side of which is shown in the accompanying photographic illustration) has recently been received by the Institution, and has been dispatched to Prof. Thomson through the Department of State.

*SIR WILLIAM ROBERTS-AUSTEN, K.C.B.,
F.R.S.*

BY the death of Sir William Roberts-Austen, which occurred at his official residence in the Mint on Saturday, November 22, metallurgical science has to deplore the loss of one of its most distinguished representatives. He had been in failing health for some months past, and had suffered from one or two sharp attacks of illness during the last few years, but even his most intimate friends, until a few days before his death, were quite unprepared for the suddenness of his end.

William Chandler Roberts, as he was formerly called, was born in 1843. His father, George Roberts, was of Welsh descent, whilst his mother, Maria Louisa, belonged to the Kentish family of Chandler which intermarried with the Austens. In 1885, at the request of his uncle, the late Major Austen, J.P., of Haffenden and Camborne, in Kent, he obtained Royal license to take the name of Austen.

At the age of eighteen, he entered the Royal School

of Mines with the intention of being a mining engineer, but after obtaining the associateship of the school he became, in 1865, a private assistant to the late Prof. Graham, then Master of the Mint, and was employed, at the outset, mainly on the researches in inorganic chemistry and on physical chemistry which continued to occupy Graham until the end of his days. Graham died in 1869, when the Department was reorganised in accordance with the provisions of the Coinage Act of the following year. Under that Act, the Chancellor of the Exchequer became “Master, Worker and Warden” of the Royal Mint. No salary was attached to the office, but it was provided that its duties should “be performed and exercised by his sufficient deputy.” In order to provide for the efficient discharge of the scientific work devolving on the Mint, a new post—that of “chemist of the Mint”—was created, and Roberts was selected to fill it, being appointed by Treasury minute of January 7, 1870.

On the death of Mr. Horace Seymour, the late Deputy Master, in June last, Sir William Roberts-Austen was appointed to fill the office *ad interim*, or until his own official connection with the Mint should be severed by resignation. This he had intended should take effect in the spring of the coming year. It may be said, therefore, that Sir William Roberts-Austen had, at one time or other, filled every office in the Mint which a man of his order could aspire to. No more convincing testimony to the manner in which he discharged his official duties, and no more eloquent proof of how he acquitted himself under the great responsibilities of his position, could be adduced than this single fact.

Roberts-Austen was one of the most many-sided men of his time. His intellectual activity found scope for itself in many ways. He had an insatiable capacity for work and he never spared himself. Those who knew him intimately frequently remonstrated with him on the manner in which he incessantly made large drafts on his store of mental and nervous power, with no thought of repose or recuperation. It was rarely that he could be induced to pay much heed to the warnings of his friends, declaring that he found in the very variety of his avocations the relaxation and rest which they desired him at times to take. This was strikingly exemplified by the manner in which he clung, with an interest amounting to affection, to his position as professor of metallurgy in the Royal School of Mines. Roberts-Austen always cherished, as one of the most treasured memories of his life, the recollection of his early association with the Royal School of Mines. Although the Royal School of Mines is to-day incorporated with the Royal College of Science, a fusion of which Roberts-Austen entirely approved and which he loyally supported, his colleagues on the council of the school were more or less dimly conscious that deep down in his mind, “at the back of his head,” as the saying goes, he was still apt to regard the school as a corporate entity with a separate existence, with all the powers, privileges and prestige which it enjoyed as a separate entity in his old Jermyn Street days. There was probably no one position he coveted more than its chair of metallurgy, and no incident in his career which gave him a greater sense of pleasure and satisfaction than his appointment, in 1880, to that chair in succession to the late Dr. Percy. The feeling with which he regarded the school is intelligible enough, for it is very human and sprang from his very affection for it. It is akin to that which leads the fond father or doting brother in his secret soul to resent the removal of the daughter or the sister to a new home. No amount of talk about “a larger potentiality for good,” “enlarged sphere of activity,” “greater measure of advantages,” &c., however willingly and sincerely assented to, will entirely subdue and efface the feeling which in the younger and more militant masculine members of a family has been known to degenerate into a secret wish