

At the same time lived another small animal, *Miolophus*, known only from a fragment now at York. It differs from most ungulates in having only a single inner cusp to the molars, so causing it to resemble a typical pre-molar. Another form, *Microcherus erinaceus*, is very aberrant, and its position is doubtful.

TESTIMONIAL TO DR. BENCE JONES

WE regret very much to hear that Dr. Bence Jones has been compelled on account of his health to resign the office of Secretary to the Royal Institution, a post which he has filled for so many years with equal honour to himself and advantage to the Institution.

His conviction of the value of original research, and of the special vocation of the Royal Institution to continue diligent in promoting it, was with him an unceasing stimulus to exertion. His attention to every detail left nothing neglected in the performance of his duties. His own scientific attainments have been of signal effect in maintaining respect for the Institution, and in procuring the co-operation of eminent men in the laboratories and lecture theatre. His love of the place and its memories has been shown by the pains he took to collect its early annals; including in this work an account of the discoveries of Young and Davy, and by his becoming the historian of Faraday.

The services of Dr. Bence Jones have been given under the pressure of important professional engagements, and latterly under the additional difficulties of failing health; and until now, when he has been reluctantly compelled to resign, he has never relaxed in the active prosecution of his honourable task.

We trust with the managers, however, that the aid of Dr. Bence Jones may not be altogether lost to the Institution; but that he will still afford to it the benefit of his counsels and experience. It is hoped that he may in future occupy a seat at the Board of Management; and further, that he will remain associated with the Institution by doing it the favour of accepting the position of Honorary Assistant-Secretary.

It has very naturally been proposed to present Dr. Bence Jones with a testimonial to be raised by subscription, and we feel confident that to so worthy a purpose there will be no lack of willing contributors. Individual subscriptions are limited to 3*l.* 3*s.* as a maximum.

It has been ascertained that the form of testimonial most agreeable to Dr. Bence Jones would be a bust of himself to be placed in the Royal Institution. Subscriptions to this testimonial may be paid either at the Royal Institution, or to "The Dr. Bence Jones Testimonial Account," at Messrs. Drummonds, the bankers, Charing Cross, who are authorised to receive the same.

CAPTAIN M. F. MAURY

MATTHEW FONTAINE MAURY, whose death, on Feb. 1, we recently recorded, was of French descent, and was born in Spotsylvania County, Virginia, Jan. 24, 1806. While still a child, his parents, who were in moderate circumstances, removed to Tennessee, where young Maury was sent to school. In 1825, when nineteen years old, he entered the service of the United States as midshipman, circumnavigating the globe in the *Vincennes*, during a cruise of four years. During this cruise Maury began his well-known "Treatise on Navigation," which was finished some years afterwards, and was for a long time used as a text-book in the U.S. navy. In 1836 he was made lieutenant and was gazetted astronomer to an exploring expedition.

In 1839, while travelling on professional duty, Lieut. Maury met with an accident which resulted in permanent

lameness and unfitted him for active service afloat. What appeared then as a great misfortune to the lieutenant resulted indirectly in an increase of his fame, and in the performance of services of high value to science and humanity. The lame lieutenant was placed in charge of the *Dépôt* of Charts and Instruments, out of which have grown the Naval Observatory and the Hydrographic Office of the United States. He laboured assiduously from the first day of his appointment to organise this *dépôt* more efficiently than formerly. How completely he succeeded is well known.

While sailing around the globe in the *Vincennes*, Maury made many observations as to the winds and currents. These he continued in his subsequent cruises. When he became superintendent of the Hydrographic Office he determined to do something towards elucidating the intricate subject of ocean meteorology. The beginnings of this great undertaking were small. Maury obtained at first copies of such log-books as he or his friends could command. He noted the direction of the wind, the currents, &c., on the maps which he had prepared. As the information came in, districts were filled up and places pointed out for investigation. In 1842 the system had taken such consistency in his own mind that the lieutenant communicated to the U.S. Naval Bureau of Ordnance and Hydrography a plan for supplying model log-books to the commanders of vessels in the naval and merchant marine service. These log-books are so arranged that a systematic series of observations might be registered. The plan succeeded so well that in eight or nine years he had thus collected a sufficient number of logs to make 200 manuscript volumes averaging each about 2,500 days' observations each. These materials were digested by a board of officers appointed for that purpose, and the more immediate result of their labours was to show the necessity for combined action on the part of the maritime nations in regard to ocean meteorology.

In order that his labours might lead to some practical result, Maury wrought zealously to bring about a meeting of meteorologists belonging to all maritime nations; this led to the conference which met at Brussels in 1853, at which England, France, Russia, Portugal, Belgium, Holland, Denmark, Norway and Sweden were represented, and which produced the greatest benefit to navigation, as well as indirectly to meteorology. One of its most eminent and practical results was the establishment in London of the Meteorological Department of the Board of Trade. It recommended a model log-book for all vessels, in which a brief and uniform register of the principal meteorological phenomena are entered. The British Admiralty, the Royal Society, and the British Association entered heartily into Maury's plans, and aided him in every possible way; though we are ashamed to say that England is almost the only civilised country in the world that did not confer on this great benefactor of humanity some mark of honour: other countries loaded him with well-deserved tributes of admiration and gratitude for his services.

At the outbreak of the American civil war in 1861 Maury threw in his lot with the South, and did much to strengthen its maritime defences and enable it to hold out for so long as it did. He afterwards retired to England, where he lived for many years, and where he was presented with a handsome testimonial raised by subscription, he having lost nearly his all through his attachment to the unfortunate South. Having offered his services to the ill-fated Maximilian, of Mexico, the latter appointed him Imperial Commissioner of Emigration; and after the fall of that short-lived empire, Maury returned to the United States, taking up his residence in Virginia, where he lived until his death, on February 1 last. During his later years he devoted his time and efforts to urging his fellow-citizens of the south to leave politics alone and

apply themselves energetically to the development of the agricultural resources of their country.

In 1856 appeared the first edition of Maury's "Physical Geography of the Sea," which ran through many editions in the United States, was republished in England, and translated into several European languages. In this work he embodied the results of his researches on winds and currents, and propounded his well-known theory of the Gulf-Stream. Although it has been shown that this theory will not hold water, it does not in the least detract from the high and enduring value of the services he rendered to navigation and to meteorology. There is no doubt that to him is due the honour of having first shown how the latter could be raised to the dignity and the certainty of a science, though, forsooth, it is yet far enough from deserving to be called an exact one. But Maury was essentially a practical man in the best sense of the term; all his labours from beginning to end had for their one great aim, to render navigation more secure and more economical; and in the accomplishment of this aim he was eminently successful. The saving in time, in money, and in life to Britain alone which has resulted from Maury's labours it would be very difficult to calculate; through him have the characteristics of almost every mile of that part of the ocean over which the commerce of the world is carried, become as well known as any district which has been mapped by the Ordnance Survey. Dr. Neumayer, than whom no one is better entitled to pronounce judgment on such a subject, in his recent pamphlet on the Exploration of the South Polar Regions, in opposition to some ill-informed detractors of Maury's fame, speaks of him in the very highest terms; and though we hesitate to class him, as a recent writer has done, with Newton, he will certainly, and deservedly, occupy a niche in the temple of fame as a benefactor of humanity and a promoter of scientific knowledge, to which not many men ever attain.

NOTES

THE Duke of Devonshire, Chancellor of the University of Cambridge, has consented to preside at the meeting of the friends of the late Prof. Sedgwick, which is to be held in the Senate House at Cambridge, on Tuesday, March 25, at two o'clock, to consider what steps shall be taken to raise a memorial to the late professor. Many men of eminence are expected to attend. It is rumoured that the memorial is likely to take the appropriate form of a new geological museum at Cambridge.

WE are sorry to record the death of the interesting wasp referred to by Sir John Lubbock in his address at last year's meeting of the British Association. It slept away as it were on Feb. 20 last, first the head dying, then the thorax, and then the abdomen. It has been deposited in the British Museum.

IN order that local inspectors of weights and measures may more conveniently and accurately compare all commercial measures containing subdivisions of the imperial yard, with verified copies of the official standard measures of length, which have been legalised under the provisions of the Standards Act, 1866, by Her Majesty's Order in Council of March 24, 1871, a model of a new subdivided standard yard, attached to a simple, ingenious, and comparatively inexpensive comparing apparatus, has been constructed by Messrs. Troughton and Simms, under the direction of the Warden of the Standards. This comparing apparatus has been expressly designed as one that may be used by local inspectors of weights and measures for comparing ordinary commercial measures of length, and it may now be inspected at the Standards Department.

WE have received a short paper by Mr. Lewis M. Rutherford on the stability of the collodion film. Urged by the statements

of Mr. Paschen, in the "Astronomische Nachrichten" in April last, Mr. Rutherford determined to subject the question between dry and wet process to a thorough examination, and made a number of measures, proving conclusively the superiority of the former to the latter. This conclusion is of great importance in connection with the approaching Transit of Venus. In all cases save two the distance was greater between the lines when the plate was dry than when wet, the mean excess of the nine measures is Rev. 0'0017, which is $\frac{1}{58,236}$ of an inch; it reaches in no case $\frac{1}{43,700}$ of an inch. This result is no doubt due to the cooling of the glass plate, by the evaporation which takes place the moment the wet plate is taken from the plate-holder and exposed to the air under the micrometer. This excess of distance (Rev. 0'0017), would be caused by an increase of temperature for the dry glass of about 4° F. This consideration reveals a source of error in the use of wet plates which he had not before considered, since the same evaporation takes place no doubt during the long exposures given to star plates; the amount will vary according to the hygrometric state of the atmosphere, and may be met by reading wet and dry bulb thermometers. Mr. Rutherford's objection to the method used by Mr. Paschen, is that instead of being confined to an investigation of what happens to the collodion film between the moment of exposure wet and the moment of measurement when dry, it is a comparison of the actual state of the plate when dry with what it ought to have been had all the adjustments, manipulations, and instruments been perfect.

AN exhibition for proficiency in natural science will be offered for competition at King's College, Cambridge, on April 22 and following days. Its value is 80% a year for three years. It is open to all British subjects under 20 years of age who bring a satisfactory certificate of good character. The examination will be in chemistry, physics, and physiology, with elementary papers in classics and mathematics. Applications should be sent to the tutor before Easter-day, April 13.

WE mentioned some months ago that Vice-Chancellor Bacon had decided against the validity of the late Mr. Yates's bequest to University College of endowments for the chairs of Geology and Mineralogy, and of Archæology, on the ground that the testator had never fulfilled his expressed intention of framing a code of rules and regulations for the manner in which the appointments to the professorships should be filled up. We are glad to see that the Lord Chancellor has, on appeal, reversed the decision of the Vice-Chancellor, so that the College will derive the benefits from the will designed by the testator.

A COMMITTEE has been formed among the members of the Berlin Geographical Society, and a plan has been drawn up in conjunction with the other geographical societies of Germany, for the completion from the west coast of Africa of the discoveries commenced by Dr. Livingstone from the East. The Committee propose that the expedition should start from the West Coast south of the Equator. The funds for the proper equipment and maintenance of the expedition are already partly provided.

THE Edinburgh Botanical Society has decided to offer triennially a prize of ten guineas, as an encouragement for practical research. The subject for competition is to be announced by the council at the commencement of each triennial period, and the successful competitor must have been a student who has attended the botanical class at the Royal Botanic Garden, Edinburgh, during at least one of the preceding three years, and who has gained honours at the class examinations.

THE mode in which the Fertilisation of Grasses, and especially of Cereals, is effected—a question of no small importance from an agricultural point of view—has recently been the subject of a series of observations by Delpino in Italy, and Hildebrand