

## LONDON LETTER.

ANOTHER of the veteran English naturalists has just passed away, after a long illness, in the person of Mr. George Busk, F.R.S., F.G.S., etc. By profession a medical man, and for many years consulting surgeon to the Seamen's hospital at Greenwich, he was one of those who sacrificed his professional prospects to a love of science for its own sake, and made his reputation chiefly as a teacher and examiner in the subjects of comparative anatomy and histology, in connection with the Royal college of surgeons and the University of London. He was one of the translators and editors of Kölliker's 'Manual of human histology,' and sole editor of Wedl's 'Rudiments of pathological histology.' In 1872-73 he was vice-president of the Royal society, and for about ten years was the secretary of the Linnean society. When an inspector of physiological laboratories was needed under the vivisection act, Mr. George Busk was appointed to the post, which he held, with great advantage to science, up to the time of his death.

A severe colliery explosion has just taken place in one of the deep pits (1,410 feet) of the Lancashire coal-fields, by which nearly forty lives were sacrificed; but one of the few survivors is able to give most important evidence on the behavior of the Davy lamp, and its share in causing this particular explosion. From the heaving of the coal, a sudden rush of gas came out upon his partner's lamp, the flame rapidly elongated inside, and in a very short time the gauze was seen to burst, and the explosion took place. This danger was not unknown to Davy, but it has hitherto been considered that the elongation of the flame gave sufficient warning to enable the miner to escape to a place of safety. In the present instance it seems clear that the three stages followed each other too quickly, the result being a lamentable sacrifice of life.

Considerable attention has been directed of late to the performances of the Marchant engine, for which it is claimed that the difficult problem of the return to the boiler of steam which would otherwise be wasted has now been practically solved by it. Several stringent tests have been made of this engine under the superintendence of responsible engineers previously unacquainted with it, and the result of one of the most recent may be here given. "The stated effective horse-power of the engine (93.3) was therefore obtained at the expenditure of 0.803 pounds Welsh coal per horse-power per hour, and we hereby certify to such ascertained result." The boiler pressure was 241 pounds per square inch; the average vacuum in the condenser, 17 inches; and the speed, 125

revolutions per minute. The results thus obtained work out to a fraction over half a pound per indicated horse-power per hour. The economy in coal is such, that it is calculated that the Peninsular and oriental steamship company would save £1,000 (\$5,000) per day by the use of such engines. As the condenser occupies only a sixteenth of the space of an ordinary water-condenser, it is adaptable to locomotives, which might, says Mr. Marchant, the inventor, be built to run 1,000 miles without a fresh supply of water.

The season of annual congresses has now well begun. Allusion was recently made in this correspondence to that of the naval architects in Liverpool, a concise summary of whose work appears in *Nature* for Aug. 12, and will well repay careful perusal. The mechanical engineers hold theirs in London during the present week. The controversy upon women's education, revived by Dr. Withers Moore in his presidential address at the British medical association last week, has already received contributions by cable from the United States, and has attracted much attention here. The educated layman's view of it is forcibly set forth in an article headed 'A plea for silly mothers' in the *Pall Mall gazette*, from which the following sentences may be quoted. "Where Dr. Moore has gone astray is, that while he wants to prove that the higher education unfits women to be mothers, all he does is, that overpressure does so: of course it does. Overpressure is bad for women; so it is for men. Some women are not fit for professional careers; neither are some men. . . . We no longer aspire to shut women out of the world in mediaeval seclusion; our aim is rather to keep them among its stir and strife in protected and shepherded peace, and in that work there is as much call upon the new chivalry as ever was made in an earlier civilization upon the knights of the lance and spear."

Dr. J. S. Billings's address on the position and prospects of the medical profession in America excited very great interest, as did the invitations from the American representatives to attend the International medical congress to be held next year in Washington. The present meeting has been more cosmopolitan than any former one, a hundred members coming from the continent, United States, or colonies, while there were members from Costa Rica, Calcutta, Japan, and South Africa.

A very interesting discussion, which has a scientific side to it, is going on with reference to the permanency of water-color pictures; and so much public interest has been aroused, that a committee has been appointed by the 'lords of the committee of council on education' to investigate

and report on the matter. The advocates of the permanency of water as a medium for color-painting cite in support of their views the fact that the ancient Egyptians, whose pictures in some cases are apparently as fresh and bright to-day as when first executed two or three thousand years ago, used water-colors. Old manuscripts, illuminated in water-colors several centuries ago, do not appear to have diminished in brilliancy. On the other hand, there are undoubted cases of fading of pictures by Turner and others, owing to prolonged exposure to sunlight. A comparison of collections of oil and water color pictures of equal age, however, seems to show that the former are at least as liable to fade as the latter. Such colors as ochres and siennas are permanent in both mediums, while lakes are fugitive in both, and the madder colors are generally considered lasting. A few years ago, Mr. Holman Hunt took much trouble to investigate the purity of artists' colors, which, he found, were frequently adulterated. The results he communicated at the time to the Society of arts. It is now suggested that a more extended official investigation should be made of the whole subject, on the lines which he then indicated, including in the research the action of the electric light, as well as that of sunlight, upon pure and adulterated pigments, and mixtures thereof.

W.

London, Aug. 15.

#### NOTES AND NEWS.

THE two hundred and fiftieth anniversary of the foundation of Harvard university will be celebrated on the sixth, seventh, and eighth days of November next. On Saturday, the 6th, undergraduates day, the students of the university will celebrate the event by literary exercises in the morning, athletic sports in the afternoon, and a torchlight procession in the evening. On Sunday, the 7th, foundation day, the anniversary of the passage by the general court of the colony of Massachusetts Bay, of the memorable vote, "The court agree to give four hundred pounds towards a school or college, whereof two hundred pounds shall be paid the next year, and two hundred pounds when the work is finished, and the next court to appoint where and what building," there will be commemorative exercises, under the direction of the college authorities, in Appleton chapel, conducted in the morning by Rev. Francis G. Peabody, and in the evening by the Rev. Phillips Brooks. On this day clerical graduates of the university are requested to refer in their pulpits, if the circumstances permit, to this act of the infant colony, and the benefits which have followed from

it. On Monday, Nov. 8, alumni day, the graduates of all departments of the university, and guests, will meet in Massachusetts hall, at 10 A.M., and proceed thence to Sanders' theatre, under escort of the undergraduates, where an address will be made by James Russell Lowell, and a poem delivered by Oliver Wendell Holmes, and honorary degrees will be conferred by the university. In the afternoon the association of the alumni, composed of all graduates of the college, with their invited guests, will have a collation in Memorial hall. It is suggested that the members of Harvard clubs in the various cities of the United States who are unable to attend the celebration at Cambridge should commemorate the day.

—The American public health association will convene at Toronto, Canada, Tuesday, Oct. 5, and continue four days. The executive committee have selected the following topics for consideration at said meeting: the disposal of the refuse matters of cities and towns; the condition of stored water-supplies, and their relation to the public health; the best methods and the apparatus necessary for the teaching of hygiene in the public schools, as well as the means for securing uniformity in such instruction; recent sanitary experiences in connection with the exclusion and suppression of epidemic disease; the sanitary conditions and necessities of school-houses and school-life; the preventable causes of disease, injury, and death in American manufactories and workshops, and the best means and appliances for preventing and avoiding them; plans for dwelling-houses. At the last annual meeting of the association, a resolution creating a section of state boards of health was adopted. A meeting of the representatives of the state boards of health has been called by the secretary of the Conference of state boards of health, on Monday, Oct. 4, and it is expected that the said representatives will on that day organize the section.

—The hydrographic office has received the following note: Aug. 31, at 9.45 P.M., the steamer City of Palatka, Captain Voegel, when a mile and a half north of Martin's industry light ship (off the coast, south of Charleston), in eight and a half fathoms of water, experienced a terrible rumbling sensation, lasting a minute and a half. There was quite a heavy sea from the south-east after leaving Charleston bar at 5.30 P.M. When this rumbling sensation took place, the wave-motion ceased. It was a perfect calm during the rumbling: after that, the usual motion of the south-east swell took place. The wind at the time was south-west, light, weather cloudy, barometer 30° 01', thermometer 80°. The sensation resembled a