OUR ENGLISH LETTER.

(From an Occasional Correspondent.)

NEWCASTLE-ON-TYNE, August 30.

The British Parliament of Science, as it is proudly styled, held its session this year in the city of Edinburgh (the "Modern Athens,") and, in the presence of a numerous assemblage of the "Blue Belles of Scotland," performed its usual routine of reports, papers, lectures, conversaziones, dinners, complimentary speeches, and flirtations, winding up with several glorious excursions to the bonnie Highlands, and the verdant islands of the Frith of Forth.

The week's doings, although crowned by the Centenary Festival of that Scott of Scots—the great Sir Walter—have not altogether satisfied the fastidious expectations of the London press, whose privilege it is to animadvert with smartness upon persons and proceedings, somewhat eccentric to the ordinary sphere of their observation. If the work of the British Association was limited to an annual display of a week's bunting, and to have no farther record of its transactions than the memory of crowded section rooms, sententious paper-mongers and virulent debates, followed by eager social lion-hunting and a final flourish of trumpets, then we might agree that the critics have some reason to pronounce the meeting at Edinburgh wanting in some of those sensational attractions which have surrounded many of its previous sessions.

No ROYAL PRINCE filled the chair with exemplary grace. No LIVINGSTONE became the cynosure of all eyes. No OWEN carried with him the enwrapped attention of an enthusiastic audience. The glories of TYNDALL'S dust and the gorgeousness of ROSCOE'S rainbows were not eclipsed or equalled. The courtly MURCHISON, the gallant PHILLIPS, the piquant SEDGWICK, the speculative DARWIN, and the philosophic AIREY, were conspicuous by their absence. Whilst, alas! the names of Brougham, Herschell, Brewster, Faraday, Edward Forbes, George Wilson, and William Allan Miller, do but recall the memory of princes of science now levelled in the dust.

Be it remembered, however, that the success of the British Association is not to be gauged by the transient brilliancy of its gala days, or by the influence of its annual gatherings upon the outside world. This is but a small portion of its work, and merely a popular mode of raising from the public a large voluntary subscription, most scrupulously devoted to the advancement of science by money grants for original research and associated investigation; for testing the value of inventions, and for solving large social problems requiring prolonged and combined scientific investigation.

Admitting, therefore, that there may be some ground for the animadversions of the press upon some of the prominent and popular features of the late meeting—granted that we have in former years listened to presidential addresses of a more philosophical and less metaphysical character, granting that vague speculations, and loose generalisations, and bitter semi-theological discussions, diverging into materialism on the one hand, and spiritualism on the other, give the sub-section of Biology an unscientific aspect; granting that, notwithstanding the unphilosophical and inconclusive reasonings of the captious debaters, the itching ears of a curious public delight to listen to these wranglings, and pressed in such crowds as to require quadrupled accommodation in which to applaud, to laugh, or to cheer and hiss the orators. Granted that the exact sciences of Chemistry and Astronomy are degraded by the association of the names of CROOKES and HUGGINS with the mystical and bat-like performances of the spiritualist "HOME."

Granting, we say, that much of this is "philosophy—falsely so called"—yet this is not THE BRITISH ASSOCIATION nor ITS WORK PROPER. Nor are the Committees altogether responsible for the introduction of such topics, for their popularity or for the license of the discussions. It is a phase in British and American social history, and the constitution of civilized society demands that such "yeast" should come to the surface, receive both discussion and criticism, and finally disappear before the test of public opinion. This phase of its experience does not grace the proceedings of the British Association, and although it challenges an undue share of public attention it will pass away as a transient confervoide growth of which no record will appear in the published volume of transactions, upon which no committee will be appointed to report, and no money grant voted for its further investigation.

Nor were the social questions in regard to woman's rights and responsibilities, brought forward by Miss Becker, in any better keeping with the proper work of the Association. The Social Science Association is the proper and legitimate arena for such topics, and it is by unfair though successful stratagem that such questions are slid into the section devoted to political economy and statistics. The members, however, crowded in not so much to listen to the argument as to see and hear the lady.

Of the solid scientific work done by the Association, such items as the report of the Kew Committee, the report of the Committees on Luminous Meteors, on Deep Sea Dredging, on Geological Explorations, and on the Utilization of Town Sewage, tell of a large amount of patient labour done and valuable facts accumulated for the benefit of science—some £2,000 having been thus expended during the past year, and a similar sum being placed at the disposal of committees for the present year in the sections of Meteorology, Mathematics and Physics, Chemistry, Geology, Biology, Geography, Economic Science and Mechanics.

It has indeed been matter of solicitous consideration amongst the leaders in science whether the scientific character of the Association might not be raised by continued meetings during the winter for the more thorough discussion and sifting of papers before publication.

Against this it is forcibly urged that the great object of the Association is to bring together on a common arena men engaged in scientific pursuits in different parts of the country and surrounded by the diverse influences of a purely scholastic or commercial neighbourhood.

This can only be done during vacation and by a peripatetic society. It can never be made to centre in a London society, for the teachers of science are actively engaged in their own localities throughout the winter. So far also as the opinion of the leaders of science is concerned, this is generally obtained through the leading scientific societies of London, and the Royal, the Linnean, the Chemical, the Geological, the Astronomical, and the Geographical societies afford a sufficient arena for London audiences. It is a special object of the British Association to bring the members of these societies into contact with equally devoted, though less known science workers in country districts.

As an instance of the class of papers elicited by the Association was a most valuable and interesting one read by Mr. Henry Deacon, J. P., of Widnes, near Liverpool, a well-known chemical manufacturer, who gave the results of 12 months' experiments on the large scale of a new process for the manufacture of bleaching powder.

Following out a suggestion made by Dr. Lyon Playfair, Mr. Deacon has devised, with great labour and ingenuity, a new method of evolving free chlorine from hydrochloric acid, which promises to revolutionize the manufacture of bleaching powder, producing a better article at a less cost and with far greater comfort and health to the workmen. This process involves the use of a condensing tower containing about 400 tons of clay marbles, the good old-fashioned marbles of our boyhood, saturated with sulphate of copper! Through this tower hydrochloric acid gas and atmospheric air, are drawn, which, by a continuous process are converted into chlorine gas and water. The process, both theoretically and mechanically, is a beautiful and perfect one, and is highly suggestive as probably leading to a similar cheap production of oxygen, which would be one of the most valuable discoveries possible for chemical manufacturers, from aqueous vapour. Great preparations are being made for next year's total eclipse of the sun, when it is expected that valuable observations will be made and registered.

The greatest treat of the meeting to visitors was the inspection at the Industrial Museum of a magnificent collection of science and art, now a proud rival to its elder sister at South Kensington. Under the indefatigable energy and industry of Professor T. C. Archer, formerly of Queen's College, Liverpool, this grand temple of applied science stands unrivalled, containing, as it does, the famous museum of the University added to the very large collections of home and foreign industries, which are well represented and admirably displayed. Scotland may well be proud of such a glorious institution, which would do credit to the metropolis of any nation, and which looked gay indeed at the "reception" given by this hospitable city to the members of THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE MONTREAL HORTICULTURAL EXHIBITION, MONTREAL.

The twenty-sixth exhibition of the Montreal Agricultural and Horticultural Association was opened at the Victoria Skating Rink on Tuesday, the 19th inst. The rink was decorated for the occasion, and the scene on entering was in every way a charming one. The show this year, though a fair one, was very far below the average, owing, no doubt, to the advanced time of the season.

Half-way down the rink from the entrance-way ran six tables, which were divided from eight tables at the other end by the large fountain. On entering the rink and turning to the table at the extreme right, and which may be called No. 1, was a collection of dried grasses, followed by a collection of beautiful dahlias. Next was a collection of phlox perennials, followed by a large display of brilliant immortelles; a good display of phlox annuals, and a collection of dazzling verbenas, side by side with which was a batch of double zennias, mixed with them and conspicuous being a number of handsome gladiolus.

On the second table was a small collection of handsome bouquets, wreaths, and flower designs. Next was a collection of annuals of all the colours of the rainbow, followed by collections of biennials, streka, petunias and pansies, the latter being particularly good. This table was furnished with a blaze of glory in the shape of a large collection of asters, double, single, and of every sort.

The third table was mainly devoted to fuschias, geraniums, roses and green-house plants generally, and was followed by a table entirely covered with scarlet geraniums. The fifth and sixth tables were set aside for grapes and apples. Of the latter fruit ninety-six varieties were exhibited, embracing all sizes from the giant "Emperor Alexander" to the humble crab. The grapes were in great variety, and offered some remarkably good specimens. In this respect they made a good contrast to the pears and peaches, of which the collection was small and contained nothing of special importance. The collection of poultry, at the first of the upper eight tables, was also unimportant.

On the second, third and fifth upper tables were the vegetables of different kinds, all of them very fine. On table five was a magnificent specimen of the egg plant, as fine as the judges had ever witnessed. Tables six and seven were also devoted to vegetables, and table eight bore samples of grain and miscellaneous articles. On the whole the collection of vegetables made up the best part of the show. Among the miscellaneous articles were shown some very fine fresh butter, and honey in small quantity.

Table four, among the eight at the upper end of the rink, was devoted to stove plants and a very fine collection of ferns. On this table was a large collection of flowers exhibited by one hundred and eighty-three different contributors, from among the members of the Russell Hall Sunday School Scholars. This exhibition was very pretty and interesting. Our sketch shows the *tout ensemble* while the exhibition was being held.

OPEN WINDOWS AT NIGHT.

Very much has been written on this subject, and written unwisely; the facts are, that whoever sleeps uncomfortably cool will get sick. To hoist a window sky high when the mercury is at zero is an absurdity.

The colder a sleeping apartment is, the more unhealthy does it become, because cold condenses the carbonic acid formed by the breathing of sleepers. It settles near the floor and is re-breathed, and if in a very condensed form, he will die before the morning. Hence we must be governed by circumstances; the first thing is, you must be comfortably warm during sleep, otherwise you are not refreshed, and inflammation of the lungs may be engendered, and life destroyed within a few days.

An open door and an open fire-place are sufficient for ordinary purposes in cold weather. When outer windows are opened, it is well to have them down at the top two or three inches, and up at the bottom for the same space.

In miasmatic localities—and these are along water-courses, beside mill-ponds, marshes, bayous, river bottoms, flat lands, and the like—it is most important from the first of August until several severe frosts have been noticed, to sleep with all external doors and windows closed, because the cool air of sunset causes the condensation of the poisonous emanations which were caused by the heat of the noonday sun to rise far above the earth; the condensation makes the air "heavy" at sundown, made heavy by the greater solidification of the emanations by cold; and resting on the surface of the earth in their more concentrated and malignant form, they are breathed into the lungs, and swallowed into the stomach, corrupting and poisoning the blood with great rapidity.

By daylight these condensions are made so compact by the protracted coolness of the night, that they are too near the surface of the earth to be breathed into the system; but as the sun begins to ascend, these heavy condensions, miasms, begin to rise again to the height of several feet above the ground, and are taken into the system by every breath and swallow; hence the hours of sunrise and sunset are the most unhealthful of all the hours of the twenty-four in the localities named; and noontide, when the sun is hottest, is the most healthy portion of the day, because the miasm is so much rarified that it ascends rapidly to the upper regions.

The general lessons are, First—Avoid exposure to the outdoor air in miasmatic localities for the hours including sunrise and sunset. Second—Have a blazing fire on the hearth of the family room at those hours, to rarify and send the miasm upwards. Third—Take breakfast before going out, and tea before sundown; then being out after night is not injurious.—*Hall's Journal of Health.*

AMBERGRIS.

The use made by mankind of scents derived from the animal kingdom would form an interesting chapter in the history of our species. The use of scents is of very high antiquity, and it would be interesting to know how, when, and where the various scents were discovered. The principal scents derived from animals are musk, civet, ambergris. Musk is a scent that nature seems to have used in profusion, and it seems strange that we should find musk perfume present in such very different things as a little Chinese Deer—a plant very common in our garden—and the crocodile of the Nile. The most interesting, I think, of all scents is ambergris. My friend Mr. Ponder, has been good enough to transmit to me, through Mr. Herbert Dalton, of 12 Little Tower Street, (to whom thanks) a very interesting sample of ambergris. The true origin of ambergris (*Succunum gr seum*) was a matter of great dispute in former times, it is found floating in the sea, or cast up on the sea-shore in the neighbourhood of Madagascar, Jamaica, Bermudas, Maldives, Brazil, Molucca, Japan, China, coast of Africa, and it is said to also have been found on the west coast of Ireland, the coast of Norfolk, and the Orkneys. The greatest supply now coming into the market (Mr. Dalton informs me) is from the Bahamas and outside Morocco. Formerly several theories as to its nature existed The inhabitants of Madagascar said it was a kind of bird guano; secondly, it was said to be bitumen from springs; thirdly, a sea mushroom; fourthly, a vegetable wax or gum. The real fact, however, is, that it is simply a secretion from the intestine of the sperm whale (*Physeter macrocephalus*. I find a very good account of it in the "Natural History of the Cetacea," by Dewhurst, 1834. It is generally met with floating in the sea, but it is also met with in the intestines of sperm whales—healthy whales do not carry it, but it is generally found in dead or sickly whales. It is always in one place inside the whale—namely, at from two to seven feet from the termination of the intestinal canal. Mr. Dewhurst, therefore, thinks that it is a secretion which collects in the cæcum of the whale, and from the fact that it is found only in dead or dying whales, he conjectures that it may be possibly the cause of the death of the whale.

There can, however, be no doubt whatever but that ambergris is the refuse of the whale's food collected in a morbid form. On looking at it very closely I find that it is deposited in regular layers. In the specimen now before me there are three layers, first a layer very much the colour of brown sugar, then a layer of a much darker hue, almost black, then a layer of the light-coloured material; the finest ambergris is always in layers. The formation, in fact, reminds me very much of the intestinal calculi so common in horses. By delicate manipulation I find the ambergris will split off in layers as one splits up the pasteboard cover of an old book

The theory of its being a formation analogous to a calculus is confirmed from the fact that frequently hard, shining, black, horn-like substances are found embedded in the body of the ambergris. These are the beaks of cuttle-fish, which form a great part of the food of sperm whales; these cuttle-fish beaks, however, are not perfect. Mr. Dalton has been kind enough to pick out for me specimens of cuttle-fish beaks; they are more or less comminuted or broken; but one specimen still remains *in situ*, firmly embedded in the ambergris, like the bone of an Ichthyosaurus in Lias limestone. When the whale swallows the cuttle-fish, the soft parts are digested, but the hard beaks remain intact. That the beaks of cuttle-fish are hard to digest is evident from the fact that a few months ago, whilst dissecting a monk-fish, I found a collection of fifteen or twenty of the beaks in the stomach. I also found a lens of a cuttle-fish eye. It may be possible, therefore, that these cuttle-fish beaks act as nuclei for the formation of a diseased mass, which, to use Mr. Dewhurst's own words, "produces an obstipation, which ends either in an abscess, as has been frequently observed, or terminates the life of the animal."

While dissecting out the beak of the cuttle fish I found that the ambergris became softened in my hand. I therefore put some of the dust under the microscope, and find that it consists of a wax-like material that seems to be deposited in a coarse kind of structure like a wax-candle broken across. The black layer looks like the wrinkled skin of an elephant, and there appear projecting out of it and in lines across the blackened folds very minute spiculæ or hairs, reminding me of the appearance of the nettle. I have not the slightest idea what these crystals are. They may, however, possibly be "amberin;" this is a peculiar substance obtained by chemical analysis of ambergris, when ambergris is heated with boiling alcohol until it is saturated, amberin is grouped in small colourless crystals. By the analysis of John, ambergris appears to be composed of amberin 0.85 (more than four-fifths) an extractive matter soluble in alcohol, and probably contain-