

hurst College and Whalley Abbey, the Lake District, Haigh Hall, St. Helen's and Widnes, the Wigan Coal and Iron Company's Works, Chester and Eaton Hall, Liverpool (including a visit to a White Star steamer and a run along the dock's front), Clitheroe District (Geological), and others which may be announced in these columns next week.

Rufford Park and Rufford Old Hall will also be visited, as well as the county town, Lancaster, which deserves more than passing mention. There is the old church there, the ancient castle (the residence, ages ago, of John of Gaunt), aqueducts of some importance, the Roman camp in the vicarage grounds, the assize courts, and many other objects of attraction and public buildings, including asylums and hospitals of ancient and of modern establishment, and of very various character.

There will be garden parties at Knowsley (by the kindness of the Earl and Countess of Derby), at Lathom House (on the invitation of the Countess of Lathom), and at Ince Blundell (the residence of Mr. T. Weld Blundell). In addition, the Mayor of Southport will give a garden party at Hesketh Park on Friday, September 21; and it is rumoured that he will also have two afternoon receptions, on days to be arranged hereafter, at his own residence, Woodbank. The Rev. C. Hesketh Knowlys, the rector of the mother parish of North Meols, will also give a garden party in his grounds.

The three railway companies running into the town, two of which have terminal stations at Southport, are all offering advantages and facilities in order to help making the meeting a success. For instance, the London and North Western Railway will run through carriages to Southport on September 17, 18, and 19, from London (Euston Station), Willesden Junction, Northampton, Stafford, and Crewe, by the 7.15 a.m., 11 a.m., 1.30 p.m., 3.0 p.m., and 4.0 p.m. trains, and similar arrangements will be carried out for the return journey.

Liberal arrangements have also been made by the local railway companies for the benefit of excursionists to the many attractive districts in the north and west of England.

The arrangements at the Reception Room in Cambridge Hall will be of the usual complete kind at these gatherings, including postal, telegraph, ticket, reserved seats, lodgings, inquiry, lost property, daily journal, members' lists, local programme, guide-book, and other departments. The hall has been newly decorated throughout for the occasion, and, when furnished and in full work, will doubtless bear favourable comparison with similar rooms at previous meetings of the Association. The telephone will also be brought into play, so as to connect all the Section Rooms both with the Reception Room and the Winter Gardens, as well as with the principal hotels and other large establishments in the town.

A local fund has been raised of over 2600*l.*, and strenuous efforts are being made to increase that amount to 3000*l.* This will most probably be accomplished.

Looking to all these facts—bearing in mind that Southport has a promenade of over a mile facing the sea, on which are three of the chief hotels and a string of handsome private residences and lodging-houses; a pier, which, with its extension, is within a few hundred yards of a mile in length; the boulevards (in Lord Street and

its continuations east and west), bordered by handsome edifices, public buildings of no mean architectural pretension, banks, &c.—enough has been said to justify the hope that Lancashire will once more distinguish herself as the hostess of the British Association, as she undoubtedly did in 1870 (the last time that it met within her borders), when, under the presidency of Prof. Huxley at Liverpool, one of the most characteristic, as well as one of the most numerous attended and in every way brilliant and successful meetings of the British Association was held.

#### PROFESSOR HAECKEL ON CEYLON

*A Visit to Ceylon.* By Ernst Haeckel; Translated by Clara Bell. (London: Kegan Paul, Trench, and Co. 1883.)

WHEN a man of scientific genius writes a popular book, it will generally be found to be either a great success or a great failure; mediocrity, as a rule, does not attend the work of such a man in either direction. Now Prof. Haeckel is already well known to all the world as one of the few leaders in science whose literary ability is on a level with his more professional attainments, and whose genius is therefore exhibited in exposition as conspicuously as it is in research. Thus it was that when we heard he intended to publish a popular account of his six months' travel in the tropics, we expected a great treat in the way of literary performance. We had, of course, read a good deal about Ceylon before, and thus knew that it was a part of the world which in point alike of natural scenery and natural history was well calculated to arouse the enthusiasm of such an artistic-minded naturalist as Prof. Haeckel; and knowing that his pen can paint almost as vividly as his brush, we were prepared for something of unusual interest in the story of his "Visit to Ceylon." Perhaps, therefore, it is not possible to say anything in higher praise of his book than that it has even surpassed our anticipations. The man of science has retired, as it were, into the background, and left the way clear for the man of letters, the shrewd observer of men and things, the poetic lover of Nature—the frank, open-hearted, wide-minded German character which finds so admirable an expression in this great German biologist. Whether he is diving down among the coral reefs, forgetting his wounds in the keen joy of exploring the beauty and the wonder of those biological treasure-houses, or whether he is scrambling to the "World's End" through almost untrodden and untreadable jungles 8000 feet above the sea; whether he is moving in English society and deeming it needlessly formal in the matter of dressing for dinner under a tropical climate, which has turned his carefully-provided swallow-tail coat as white as a sheet with mildew; or whether he is living for six weeks at a time zoologising in a remote native village without ever seeing a white man—wherever he is and whatever he is about, we are alike charmed by the character of the man which unconsciously looks out at us in every page, and throws around him, as it were, a halo of romance.

We have said that in all this the man of science has been allowed to retire into the background. But not on this account has the man of science been idle. Prof.

Haeckel went to the tropics to work and not to play, and work he did, with a vigour and pertinacity which, under the circumstances described, can only be called astonishing. To have gone out day after day and week after week surface-fishing in an open boat beneath the almost vertical rays of a tropical sun, is in itself to have performed a feat of physical endurance which, so far as we are aware, has never been performed by any other naturalist; and to have worked steadily for half a year from daydawn to night, exploring, collecting, and investigating as Haeckel investigates—feeling all the while, as he expresses it, that each day was costing him, as a mere matter of money, somewhat over 5*l.*—to have worked thus would have been to exhaust the strength of many a younger man even in a much higher latitude than that of Ceylon. The results attained by such a naturalist in such a region, and working at such a pressure, of course constitute an immense harvest—so much so, indeed, that he thinks he has more material in his collections than the term of his natural life will admit of his sufficiently investigating. But with all this, he has wisely avoided burdening his account of “A Visit to Ceylon” with any details of his scientific labours. The book is intended for general readers, and while a sufficient number of scientific observations on the flora and fauna of the island are thrown in here and there to complete the picture which he gives of the place, these are always judiciously subordinated to the main design of speeding an honest tale by telling it plainly.

After an entertaining account of his voyage and of a week spent in Bombay, the traveller proceeds to give his first impressions of Ceylon. He is most of all struck with the magnificent luxuriance of the tropical vegetation, some of his descriptions of which are admirable specimens of word-painting. Everywhere he meets with the greatest kindness and courtesy, of which he is lavish in his acknowledgments. Having been a guest at various houses, visited and studied botanical gardens, made sundry excursions, &c., he eventually sets up a zoological laboratory upon the coast. This having constituted the main object of his journey, he had taken with him sixteen large packing cases filled with all the equipments required for zoological and morphological research. The choice of site lay between one or other of two sheltered bays—Galle and Belligam. At the former he would have the advantage of living among civilised Europeans, and of being the guest of the hospitable and cultivated English consul, Mr. Scott, of whom he speaks in terms of high esteem; at the latter he would be the only European within a radius of many miles, and require to take up his quarters in a small government house. Such being the circumstances, he says:—

“After much hesitation, and long debating the *pros* and *cons*, I finally decided for Belligam, and I had no reason to regret the choice. The six weeks I spent there were full to overflowing of wonderful experiences, and never to be forgotten as forming the crowning ‘bouquet’ of my Indian journey, the sweetest and brightest flowers in a garland of delightful memories. Though I might perhaps have carried on my zoological studies better and more conveniently in Galle, I gained infinitely more on the side of general knowledge of nature and humanity in the charming seclusion of Belligam.”

If the naturalist had no reason to regret this choice,

assuredly his readers have not, for the account which follows of his residence among the natives is the most entertaining part of his narrative. On his first arrival he is met by a general assembly of the inhabitants, his advent having been expected in consequence of the governor of the island, Sir James Longden, having written to the native officials “to be in all respects civil and serviceable.” The civility in the first instance takes the form of series of ceremonious addresses presented to him by one native magnate after another, emphasis being given to the close of each by “a grand rattle of drums performed by a row of tom-tom beaters squatting in the background.” These high functionaries presented in their dress a sort of hybrid between the European and the Cinghalese. “Beginning at the top, a tall English chimney-pot charmed the eye—of all head coverings beyond a doubt the most hideous and inefficient. However, as the Cinghalese see Europeans wear this cylindrical headpiece on all solemn occasions as the indispensable symbol of birth and culture, never abandoning it even in the greatest heat, they would regard it as a serious breach of etiquette to appear without the singular decoration.” Below the hat there came “an enormously high and pointed white shirt-collar, and a coloured silk scarf tied in a bewitching bow.” Then a swallow-tailed dress coat, white waistcoat with jewelled buttons and gold chains. But instead of trousers wherewith to complete this grotesque imitation, each of the dignitaries ended off in a red or party-coloured petticoat and bare feet.

Having suitably acknowledged this unexpected ceremony, Prof. Haeckel sets to work unpacking and setting up his laboratory in one of the rooms of the government house. From that moment throughout his stay of six weeks he is pestered by the insatiable curiosity of the entire neighbourhood, and even by that of native visitors from a distance, which on one occasion presented themselves in the form of four old maiden ladies of distinction, “each more wrinkled and hideous than the last,” who desired to be instructed in science and to have their photographs taken. The Professor is here ungallant enough to remark, “If they had been but three, I could have mistaken them for the three Phorcydes, the witches of the classical Sabbath, and might have made myself agreeable to them after the fashion of Mephistopheles.” Hoping to satisfy the universal curiosity in a collective manner, he tried the experiment of giving lectures through an interpreter; but he found that there was no spark of real scientific interest underlying the childish desire to see something new. However, he managed to get on admirably with all around him, gave away multitudes of presents in the shape of coloured prints, &c., presided one day over the grand Buddhist festival for the 19th of December, and on the 20th filled the same office of president at the annual festival of the Wesleyan mission. “I had done honour to the sublime Buddha yesterday, and to-day I must pay tribute to worthy Mr. Wesley. . . . My friends in Galle and Colombo, who heard through the papers of my extraordinary proceedings, laughed at me ‘consumedly.’”

But we have no space to give any sketch of the strange experience of these six weeks’ sojourn among the primitive natives, so curiously composed of the instructive, the æsthetic, the ludicrous, and the pathetic. We have said

enough to show that the book ought to be read by every one, and therefore we shall now conclude by drawing more prominent attention to sundry opinions and suggestions, which, as Englishmen, we should desire to see our Government consider and act upon.

First, as regards the promotion of science :—

"The extraordinarily favourable climate and position of Peradenia especially fit it for more extensive use from a scientific point of view as a botanical station. In the same way as our young zoologists find the recently established zoological stations on the sea coast (at Naples, Roscoff, Brighton, Trieste, &c.) of inestimable value for their deeper scientific studies and experiments, a year's residence in such a botanical station as Peradenia would give a young botanist more experience and work than he could obtain in ten years under the various unfavourable conditions at home. Hitherto, less has been done in the tropical zones than elsewhere for such establishments for study and experiment, though they would be exceptionally beneficial. If the English Government would establish and maintain such a station for botany at Peradenia, and one for zoology at Galle—in the charming bungalow, for instance, belonging to Capt. Bayley, which is admirably suited to such a purpose [and would be sold by the owner to effect it]—they would be doing signal service to science, as they have already done by the *Challenger* Expedition and other great undertakings—and once more put to shame the great Continental States of Europe, who spend their money chiefly on breechloaders and big guns."

In reading this passage all true Englishmen should feel regret that their Government is not deserving of the meed of praise which the courtesy of the writer bestows. Seeing that we are the great maritime and colonising power, it is nothing short of a public disgrace that we are without a zoological station upon any of our thousands of miles of coast, and that hitherto there is no prospect of our escaping from the sarcasm (whether conscious or unconscious) wherewith the national seat of "deeper scientific studies and experiments" in marine biology is here specified as *Brighton*. Is it too much to hope that the Fisheries Exhibition may at length help to open the eyes of a Liberal Ministry to the importance of doing something in this direction?

Only in one particular does the English rule in India fall under censure, and this has reference to the atrocious treatment of the stage-coach horses. The scenes described are certainly monstrous beyond imagination—flogging by the whole village, dragging by the nostrils, wringing by the ears, and burning with torches. Truly, as Haeckel observes: "It is difficult to conceive how the English Government, which is generally so strict in its arrangements and discipline, has not long ago put an end to this brutality to animals, and more particularly extended its protection to the wretched horses that serve the 'Royal Mail Coach.'" Here is surely something for the anti-vivisectionists to memorialise upon with benefit.

We cannot take leave of this delightful book without congratulating the translator on the beautiful English into which she has rendered it.

GEORGE J. ROMANES

#### OUR BOOK SHELF

*Elements of Histology.* By E. Klein, M.D., F.R.S., &c. (London: Cassell and Co., 1883.)

THIS, which is the first of Cassell's "Manuals for Students of Medicine," contains 342 closely-printed

pages, with 168 well-executed woodcuts, mainly reproduced from Klein and Noble Smith's "Atlas of Histology," or the "Handbook for the Physiological Laboratory," intercalated in the text. It is not too much praise to say that the information in this little volume is generally very complete, quite up to date, and written in a concise, though, at the same time, thoroughly clear style.

Dr. Klein wisely omits all reference to the titles of works and papers, introducing where necessary simply the name of the discoverer of, or observer most intimately associated with, the structure referred to. Where different opinions exist, this is obviously convenient, and the right thing to do; but why on page 7 the names of fifteen histologists, followed by the words "*and many others*," should be given, it is difficult to understand, especially as they are quoted with reference to the indirect division of nuclei or Karyokinesis, of which every worker at histology must have seen many examples.

In a work like the present, where all usually received ideas are given, it is curious to find that no reference is made to Schäfer's with regard to striated muscle. Surely this cannot be an accidental omission, especially as Haycraft is twice quoted.

That the action of tannic acid on human red corpuscles is not described in the text, although figured (p. 9, fig. 9a), is clearly an oversight, as that of boracic acid on newt's red corpuscles is both figured and described. In future editions it will be convenient if the same numbers be used in the text as in the diagram when describing the different parts of the kidney tubules, constant reference to the description of fig. 133 being now necessary.

With the exception of the above minor details, unqualified praise must be given, and the "Elements of Histology," which is really a very complete manual, should be used and re-used by every student and practitioner of medicine who wishes to acquire a sound knowledge of the normal histology of man.

J. W. G.

#### LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

#### "Elevation and Subsidence" again

A LETTER appears yesterday, again criticising Mr. Starkie Gardner's general views about pressure, in the same sense as was done by myself a fortnight ago. But, referring to that gentleman's opinion that pressure can render rocks molten or fluid, Mr. Young goes on to remark: "Is not the supposition the exact reverse of what is really the case, viz. that not only does pressure *not* liquefy rocks, but actually *prevents* their melting at a temperature at which they *would* melt were the pressure removed?" Your correspondent, offering this remark with a query, seems as if his mind was not quite made up on the subject; and with reason; for it must, I think, be considered at present an open question whether the temperature of rocky matter is, or is not, raised by pressure.

Sir W. Thomson stated, in an address to the Geological Society of Glasgow in 1878, that certain experiments by Dr. Henry Muirhead and Mr. Joseph Whitley seemed to show that iron, copper, brass, whinstone, and granite are less dense in the solid than in the liquid state at the melting temperature. If so, pressure would assist in liquefying these substances. On the other hand, some observations of Mr. Johnston-Lavis, made on lava at Vesuvius, point in the opposite direction. Granted that the earth is, as a whole, extremely rigid, we cannot gather from that fact any certain information about the effect of pressure on "rocky matter," when near the melting temperature. We do not know whether the nucleus of the earth consists of matter which could, under any conditions, be directly converted into surface rock; nor yet do we know anything certain about its