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MEMOIR

OF THE LATE

PROFESSOR EDWARD FORBES.

BY

JOHN HUGHES BENNETT, M.D., F.R.S.E.,

PROFESSOR OF THE INSTITUTES OF MEDICINE, AND OF CLINICAL MEDICINE, IN THE
UNIVERSITY OF EDINBURGH.

"But the fair guerdon when we hope to find,
And think to burst out into sudden blaze,
Comes the blind Fury with the abhorred shears,
And slits the thin-spun life."—*Milton*.

EDINBURGH :

SUTHERLAND AND KNOX.

LONDON: SIMPKIN, MARSHALL, & CO., AND SAMUEL HIGHLEY.

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MDCCCLV.

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MURRAY AND GIBB, PRINTERS, EDINBURGH.

MEMOIR

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PROFESSOR EDWARD FORBES.

[FROM THE MONTHLY JOURNAL OF MEDICINE FOR JANUARY 1855.]

SINCE the publication of our last number so many able sketches of the career of the late Professor Edward Forbes have appeared in the different newspapers and literary journals, that the chief incidents of his life, and the general tenor of his writings, must be familiar to most of our readers. We cannot, however, on this account, refrain from the melancholy satisfaction of offering our meed of homage to the memory of one whose intimate friend we are proud to have been for the long period of twenty-one years, or from attempting to sketch that character, and those great acquirements in science, literature, and art, which we have had every opportunity of studying in their early dawn, as well as of appreciating in their full maturity.

It was at the commencement of the Edinburgh academic session 1833-34 that we first met Forbes. He was then 18 years of age, and had already spent one year in the University as a medical student. When a boy in his native place of Douglas, in the Isle of Man, he had exhibited a taste for drawing and for forming collections of natural objects, so that, when his school education was over, it was a question whether he would choose art or science as a profession. He decided in favour of the first, and in the spring of 1832 went to London in order to commence regularly the student-life of an artist. After six months' training, however, in the school of the late Mr Sasse, he was persuaded by his friends to enter at a university, and to study medicine, as the means of enabling him to combine, at the same time, practical aims with the indulgence of his tastes. This brought him to Edinburgh, where he first matriculated in 1832, and attended the usual routine of the medical classes for three successive years. During this period he could never conquer his dislike to medicine as a profession. He was seldom seen in the dissecting-room or Infirmary. Even his attendance on the purely medical classes was of no great use to him, as he did little else than sketch the features of the professor or of the surrounding students. We still, fortunately,

possess some of the rough pen and ink sketches he then made, and here give one of the late Professor Hamilton, which he drew at our side when we attended together the lectures of that distinguished teacher of midwifery :—



But, whilst inattentive to the more strictly medical studies, he was enthusiastic in his attendance on the botanical and natural history lectures and excursions of Professors Graham and Jameson, with both of whom he became very intimate. His tendencies were to ramble over the country, and explore the neighbourhood of Edinburgh to a considerable distance, collecting plants, shells, insects, minerals, and every other object interesting to a naturalist. Many are the struggles we have had to resist his invitations on these occasions, in order to follow our own more special subjects of study. With the results of those excursions his rooms were always littered—specimens of rocks, shells, plants, books, sketches and scraps of poetry, being intermingled in admired confusion.

Nothing could be more diversified than the mental characteristics of the various young men who constituted the privileged set of Forbes' friends during the years 1834-5 and 35-36. To suppose, as some do, that they were all naturalists like himself, is very erroneous. They were chosen from the literary, theological, legal, and medical faculties of the University, and therein was the chief charm of their society. They were all ardent students, however, in their respective departments, and leaders in the Speculative, Physical, and Medical societies. Though hard workers, they by no means despised recreation—they did not "scorn delights" though they lived "laborious days." Hence there was a geniality and feeling of good fellowship flung over their scientific, literary, and professional discussions; an intermingling of wit, poetry, song, and good sense at their convivial meetings; a total absence of jealousy, and a strong desire for one another's advancement, which not only cemented their friendship, but exercised a great influence on their subsequent career. Theirs, indeed, was the true enjoyment of the student's life,

in which the *utile* and the *dulce*—hard study and refined enjoyment—mingled together in glorious harmony.

“Denkt oft, ihr Brüder
An unsre Jugendfröchlichkeit!
Sie kehrt nicht wieder
Die goldne zeit.”

Such, indeed, were the strong feelings of friendship and unity of sentiment which existed in this group of students, that a society or order was at length formed, the members of which were distinguished in the University by wearing a red ribbon across their breasts. This association aimed at bringing together every earnest student, who also possessed feelings of good fellowship, so that mutual assistance might be afforded in their various pursuits. It embodied rules for testing and admitting candidates, and put forth the following manifesto, chiefly drawn up by Forbes, as expressive of its principles :—

“The highest aim of man is the discovery of the truth ; the search after truth is his noblest occupation. It is more—it is his duty. Every step onwards we take in science and learning tells us how nearly all sciences are connected. There is a deep philosophy in that connection yet undeveloped—a philosophy of the utmost moment to man—let us seek it out. The world in which we live is a beautiful world, and the Spirit of Omnipotence has given us many pleasures and blessings—shall we not enjoy them ? Let us refresh ourselves with them thankfully, whilst we go forth in our search after truth. We are all brethren, but it has pleased God variously to endow our minds : some delight in one thing, some in another ; some work for the good of the body, and some for the good of the soul ; let us all work together in fellowship for our mutual happiness and joy. Wherefore should men quarrel one with another, because they hold different doctrines ? Such as seek for truth in the right spirit sympathise with each other, and however opposite may be their present opinions, revile them not, but assist in their development, knowing, however wide apart may seem the paths they have chosen, one goal is aimed at, and if persevering, both must meet in the one wished-for temple. Let those who feel the spirit to develop the wisdom of creation, and to act for the good of their fellow-men, strong within them, unite together in a bond of fellowship, each brother devoting his time and his energies to the department for which he feels and proves himself best fitted, communicating his knowledge to all, so that all may benefit thereby, casting away selfishness and enforcing precepts of love. By such means glory shall accrue to his order, so that it may wax powerful in intellectual strength, and become a mental and a moral safeguard to the world, and a bond of union among all nations. Such is our brotherhood.”

Of this brotherhood Charles E. Stewart was president, and Donald Mackaskill and Edward Forbes vice-presidents. Stewart died in 1838, and was succeeded by Forbes, who assuredly has ever carried out the principles of the order, and been actively engaged in bringing about co-operation among earnest men for the advancement of truth.

In the session 1834-5, he and three others of the brethren were associated in bringing out a weekly publication, called the "University Maga." It was illustrated by sketches of several prominent men about College, executed by Forbes, and contains several of his poetical effusions. The following is one of his songs at this period, and bears relation to a public meeting of the medical students, having reference to the then imperfect working of Mr Warburton's Anatomy Bill.

THE ANATOMY BILL.

"O come, ye grieving Medicals, and listen to my lay,
Warburton's bill the subject is, a bad one, too, you'll say,—
But what else can I sing about, since in the rooms around,
Than that curs'd bill, no other *subject* happens to be found!

O measureless the evils are that measure hath brought on :
Anatomy is cut up quite, and surgery is done !
The demonstrators, too, are now all at their wits' end set,
And though they're at *extremities*, not one limb can they get.

Should one by chance a thorax get, one's *parted* from the *part*,
By that *disheartening* bill ere yet one can cut up the heart ;
Our bones are *boned* and buried too, ere *bonus* we may gain,
And to examine arteries, we try it all in *vain* !

The lecturers deserted are amid their empty rooms,
And *grave* as dead men lying fast enshrouded in their tombs !
No resurrectionist dare take his digger in his paws,
Lest that cursed *bill* should *hook* him with its prohibition *clause*.

The bill which burking should prevent has burked anatomy !
The bill for keeping murder down has murdered surgery !
The operation's *capital*, as some old fools have said,
Since operations of all sorts it knock'd hath on the *head* !

O *Billy, Billy* Warburton ! what have you been about ?
More subjects far had been brought in, had your bill been thrown out ;
And if with better *measure* you don't furnish us, I ween,
Soon in the schools, as well as rooms, no *body* will be seen !

Then rouse ye, suffering Medicals, your sentiments declare ;
The *dead* weight of Warburton's bill no longer calmly bear ;
Petition ! meet ! and speechify ! seize all sorts of occasions
To demonstrate how much you stand in need of *demonstrations* !

On the approach of spring, 1836, it became necessary for him to prepare for his examination, at the prospect of which he manifested, on all occasions, the greatest repugnance. But as the necessity of "going up" was strongly urged upon him by his friends, and as he was deficient in the requisite knowledge, the writer of this sketch (being at the moment considered chief *medicus* of the set), undertook to grind him in anatomy and physiology. With great trouble we at length forced him to write out his schedule of study and send it in to the secretary's office. Then commenced many dismal evenings and yawnings over the bones, and anatomical books, of which he soon became weary, often arranging with friends to come in at the time when he thought he should be tired of such work. We need scarcely say that Cloquet's Anatomy and the bones were then thrown aside, for an evening of gaiety and philosophical discussion.

His ideas of an examination at this time were described in the following fragment of a

VISION OF ONE "GOING UP."

"Methought that most eventful day had come,
 When I before professors most austere
 Must go, and undergo examination,
 And that I sate me trembling and afraid,
 On the stone steps of famed Physician's Hall.
 When as I sate, there came from out the door
 A poor rejected student, whose pale looks
 And palpitating heart, bespoke his fate,
 Still stronger told by sight most horrible
 Of prussic acid bottle in his hand,
 The final finisher of all his woes ;
 And at his heels a fierce examiner
 Rush'd reckless, with a loud resounding laugh,
 When me espying, in he bade me come,
 And meet my fate—entranced by the gaze
 Of his fierce eye, and by the solemn sound
 Of voice used to imperative command,
 I follow'd him instinctively, and saw
 A sight which sickens me to recollect.
 There, in a lofty and a lengthy hall,
 Around a table covered with green baize,
 Sate the examiners—animals
 Of wond'rous shapes, with horns, and bills, and claws,
 And hoofs, and asses' ears, and grinding teeth,
 Wherewith to torment and to terrify
 The luckless student, who, unknowing what
 A horrid fate awaited him, came there,
 In Sunday clothes, to seek for a degree.
 * * * * *
 There came a horrid shriek across my brain,
 And in excess of terror I awoke,
 Then thankful found myself once more alive,
 In my arm-chair's embraces, by the side
 Of half-exhausted fire—so breathed a prayer,
 And rang my bell for a supply of coals,
 Then reading Cloquet, fell asleep again !"

After this it need not be wondered at, that when summoned to appear on a certain afternoon, he at the appointed time was *non inventus*. He shortly afterwards, however, assisted his friends Drs Graham, Neil, Greville, Balfour, Tyacke, and others, in the formation of the Botanical Society, in which he was especially a supporter of the plan for exchanging specimens of plants, whereby his knowledge of their localities might be extended.

He spent the winter session of 1836-7 in Paris, attending the professors of the Jardin des Plantes and the Sorbonne. There he drew around him English and French students, and propagated among them the principles of the order already referred to, and so organised a branch of it which we found in full operation on our visiting Paris in the following year. In the autumn of 1836 he roamed over the south of France, and crossed the Mediterranean to Algiers. He had previously visited Norway, and from this time he was in the habit of making

autumnal excursions to various parts of Europe, "botanizing, geologizing, and zoologizing," as he used to express it. The results of these expeditions were published in numerous papers which he communicated to the various scientific journals, and they laid the foundation of that extensive knowledge of nature, and of that brilliant reputation which he subsequently attained.

He passed the session 1837-8 in Edinburgh, a winter memorable for the serious snow-ball riot among the students, to quell which the military were called out, who entered the College at the point of the bayonet. This disturbance gave rise to an immense number of songs and pasquinades, many of which were written by Forbes, who afterwards published the greater number as a pamphlet, under the name of "The Snowdrop." He illustrated it with sketches of the late Lord Robertson, who successfully defended the accused students on their trial, and of the accused and accusers who figured in court. Amidst all his gaieties and lighter productions, however, science was not forgotten, for in 1838 he published his "Malacologia Monensis, or Catalogue of the Mollusca inhabiting the Isle of Man and the neighbouring sea." This, his first work, was dedicated to Professor Jameson, "by his sincere admirer and attached pupil."

The years 1839 and 1840 were occupied principally in extending his knowledge of marine zoology, although other parts of natural history were not neglected. He was accustomed to live for many months together, with his friend Mr Goodsir, at Anstruther, in Fife, in whose company he not only dredged the neighbouring seas, but extended his excursions to the Shetland and Orkney Islands, and also to the Hebrides. In the winter seasons he gave numerous lectures to popular institutions in Edinburgh, St Andrews, Cupar, and Dundee, and commenced a systematic course to the students of Edinburgh, on natural history, which for want of encouragement was not concluded.

In those investigations into marine zoology, he employed the dredge, an instrument which he was accustomed to say is as useful to the naturalist, as the thermometer is to the natural philosopher. Certainly he and Mr Goodsir used it continually in their numerous joint excursions, and through Forbes it was elevated into a very important means of research. When the British Association met in Glasgow, in 1840, he proposed that a dredging committee should be formed, the establishment of which he celebrated by the following song. Its style may be judged of by the first three verses:—

THE DREDGING SONG.

BY A MEMBER OF THE DREDGING COMMITTEE OF SECT. D.

"Hurrah for the dredge, with its iron edge,
And its mystical triangle,
And its hided net with meshes set,
Odd fishes to entangle !
The ship may move through the waves above,
Mid scenes exciting wonder ;
But braver sights the dredge delights,
As it roveth the waters under !

Chorus —Then a-dredging we will go, wise boys !
Then a-dredging we will go !

Down in the deep, where the Mermen sleep,
 Our gallant dredge is sinking;
 Each finny shape in a precious scrape
 Will find itself in a twinkling!
 They may twirl and twist, and writhe as they wist,
 And break themselves into sections;
 But up they all, at the dredge's call,
 Must come to fill collections!

Chorus—Then a-dredging, etc.

The creatures strange the sea that range,
 Though mighty in their stations,
 To the dredge must yield the briny field
 Of their loves and depredations:
 The crab so bold, like a knight of old,
 In scaly armour plated;
 And the slimy snail, with a shell on his tail,
 And the star-fish radiated!

Chorus—Then a-dredging, etc.

In 1841, he published his "History of British Star Fishes, and other animals of the class Echinodermata," in which many new species he had discovered in his dredging expeditions were, for the first time, described. This book is beautifully illustrated from his own designs, many of which exhibit a playful humour or a sentiment that gives an exquisite zest and interest to a subject, which at the time was little understood. In April of the same year, at the invitation of Captain Graves, he joined, as naturalist, H.M. ship "Beacon," which was commissioned to bring from Syria the remains of antiquity discovered at Xanthus by Sir Charles Fellows. On this expedition he, in conjunction with the Rev. Mr Daniel and Lieutenant Spratt, carefully examined the country and coast of Lycia. They discovered no fewer than eighteen ancient cities, the sites of which had been unknown to geographers. They traced the marches of Alexander the Great and of the Consul Manlius through this part of Asia Minor, and indicated many of the spots said to have been visited by St Paul. The natural history of the whole district was carefully described by Forbes in the second volume of the work, which he and Lieutenant Spratt subsequently published giving an account of their travels. Mr Daniel fell a victim to the endemic remittent fever of the district, and Forbes himself afterwards had a narrow escape from its grasp, as at the commencement of the attack, although suffering from great prostration, he insisted on visiting the tomb of Hippocrates in the island of Cos. So much enthusiasm was, at all events, engendered by his medical studies, but to that illness may be ascribed much of the occasional languor and feverishness under which he ever afterwards laboured.

It was now that his good training in Edinburgh as a naturalist became of such value to science; for not only as a botanist and zoologist did he observe the flora and fauna of the regions he traversed, but as a geologist, he connected them with the rocks and minerals with which they were associated. These combined observations led him to that beautiful generalization which at once placed him in the foremost rank of living naturalists, and indicated the law which regulated the development of animal and vegetable life in the depths of the

ocean. His researches were made public at the Cork meeting of the British Association in 1843, when he read his "Report on the Mollusca and Radiata of the Ægean Sea, and on their distribution, considered as bearing on Geology." This paper was drawn up from the results of 100 fully recorded dredging operations in various depths from 1 to 130 fathoms, and in many localities from the shores of the Morea to those of Asia Minor, besides numerous coast observations whenever opportunity offered. In this paper, he observes that the Ægean Sea, although most interesting to the naturalist, as the scene of the labours of Aristotle, has been but little investigated since his time.

During 1842 he remained attached to the "Beacon," working with his dredge in the Ægean Sea, and among the islands of the Grecian Archipelago, multiplying observations, collecting plants, minerals and animals, and sketching the beautiful scenery and the picturesque groups of men and women which attracted his attention. He, of course, encountered numerous adventures, the relation of which in after years constituted one of the charms of his conversation. One story he used to tell with infinite humour of how, at some remote island, he was presented to an invalid Greek lady as a distinguished physician from Edinburgh—how embarrassed he felt at his complete ignorance of the complaint, but how, notwithstanding, by means of sundry shakes of the head and saying nothing, he established for himself a high reputation as a doctor, and ultimately took his leave—without a fee it is true—but accompanied by the good wishes and blessings of the husband and relatives.

The purposes for which the "Beacon" were sent out could not be accomplished, so, in the spring of 1843, Forbes returned to England. He had previously left instructions with his friend, Mr Goodsir, in the event of any situation becoming vacant, which he could worthily occupy, to apply for it in his name. Accordingly when the Professorship of Botany in King's College, London, became vacant, application was thus made for it, and Forbes was appointed, so that on returning a few days afterwards, he unexpectedly found himself a metropolitan professor. He visited Edinburgh, however, before entering upon the duties of the chair, and we shall not easily forget the pleasure we then experienced on looking over the rich portfolio of drawings he brought with him. Water-colour drawings, sketches in pencil and chalk of Eastern landscapes, marine views, temples, and ruins—groups of Turks and Greeks, picturesque costumes, comic incidents, mingled with copies of plants, shells, fishes, and other objects of natural history—the whole forming a characteristic medley, indicative of the character of his observations, and skilful method of treating them. On the 8th of May he gave his introductory lecture at King's College, which was subsequently published, and he afterwards introduced the Edinburgh plan of teaching botany practically in the fields, lanes, and open country. "Those who attended his class," says the *Athenæum*, "will ever remember the charms he threw around the study of vegetable structure, and the delightful hours they spent in his company during the periodical excursions, which he made a point of taking with his pupils in the neighbourhood of London. Nor were these excursions attended by pupils alone. Many are the distinguished men of science in London who sought this opportunity of availing themselves of his great practical knowledge of every department of natural history. It was

during the delivery of his first course of lectures on botany, that he worked out the interesting relations that exist between the morphology of the reproductive system of the Sertularian zoophytes, and its analogy with that of flowering plants. His paper on this subject was read at the British Association at York in 1844."

Shortly after becoming a professor in King's College, he accepted the appointment of librarian and curator to the Geological Society of London. "In this position," says a friend of his, writing in the *Scotsman* of Nov. 22, 1854, "his extended knowledge of recent vegetable and animal species, and his remarkable acquaintance with the laws of their distribution (particularly as regards invertebrate animals), became available for general palæontological research. Here, too, he was enabled to apply to geological research that peculiar knowledge of the conditions of existence of species which his continual operations with the dredge had led him to."

In 1845 he resigned this office, and accepted that of palæontologist and lecturer on natural history to the Government School of Mines, in connection with the Ordnance Geological Survey, under the direction of Sir Henry de la Beche. From this period his life was occupied in arranging and describing the great accumulation of fossils and geological specimens which the survey was continually bringing to light,—in making excursions in connection with it, or in autumnal trips to different parts of Europe,—in attending the scientific meetings of the Royal, Linnæan, Zoological, Geological, and other Societies, and the British Association, to all of which he read many valuable papers, besides co-operating with the fellows in their committees and councils. He was also continually giving courses of lectures at King's College or in the School of Mines, besides frequently lecturing at the Royal and other popular institutions. On one occasion, having three months previously promised to lecture at Islington, he was dining at a friend's house in Surrey when he received a telegraphic message saying the audience were waiting for him. He had quite forgotten his engagement, and, whilst hurrying to the place by railway, vainly endeavoured to recall to his remembrance on what subject he had been advertised to lecture. The audience were very much out of humour when he appeared, but, without a moment's hesitation, he gave them a most brilliant extempore discussion, illustrated, as he alone could do it, by rapid drawings of animals with chalk on the black board, which soon excited the deepest interest. He has often since declared that that was the very best lecture he ever delivered.

His writings during this time were many and important. Among others may be noticed his contributions to the "Memoirs of the Geological Survey of Great Britain," including a valuable paper, or, as it may more justly be considered, a complete original work—"On the Connection between the Distribution of the Existing Fauna and Flora of the British Isles, and the Geological Changes which have affected their Area." In this Memoir is exhibited his intimate and extensive knowledge of the three kingdoms of nature, whereby he communicated a great impulse to geological science, which its cultivators even now are only commencing to appreciate. His beautiful figures of new fossil species of shells also, are among the most perfect things of the kind ever

published. In 1848 the Ray Society brought out his "Monograph on the British Naked-eyed Medusæ." Of this book, though it exhausted the subject at the time it was written, and was most beautifully illustrated by thirteen folio plates, the figures in which were drawn by himself, he modestly observes, "Even now I can offer only an outline of a most curious and interesting, though neglected, department of British zoology. The greater part of the matter in this essay is new. With one exception, kindly communicated by Mr Alder, every species has been examined by myself. Every figure is original. Any defects in the engravings must be laid to my charge; their merits are due to my friends, Mr W. Bailey and Mr C. R. Bone, for whose exertions I have to return many thanks." He next occupied himself, in conjunction with Mr Hanley, in a large work on the "History of British Mollusca," in which the wonderful power he possessed of delineating animals, at once accurately and artistically, was again brought into play. From the preface of this work also may be gathered how numerous and widely scattered were the naturalists who aided him in his labours, and how careful and conscientious he was in ascribing to all the merits belonging to them. In this respect, indeed, always fearful of doing injustice, he was accustomed to over rather than under-rate the scientific qualities and labours of his friends. This work was completed in 1853, in four large volumes, with numerous plates.

To him is mainly owing the arrangement of specimens in his own department of the Museum in Jermyn Street, and the natural history collection of plants and animals now exhibited in the Crystal Palace at Sydenham. He also took a deep interest in the exhibition of 1851, and wrote an account of its vegetable productions for the *Art Union Journal*. Indeed he contributed, in addition to his scientific papers, an almost endless number of reviews and poetical pieces to the various literary and artistic periodicals. His article on "Shell Fishes, their Ways and Works," in the first number of the New Series of the *Westminster Review*, is a beautiful specimen of easy writing; and the brilliant article on "Siluria," in the last number of the *Quarterly*, is from his pen.

Forbes entered largely into society, in which he was at all times popular. His wit and innocent humour served to light up the social circle, where he shone as brightly as in philosophical discussion or scientific investigation. Although he had not the most remote idea of tune, he used to chaunt his various poetical effusions, or songs as they were called, to a species of recitative that rendered them highly amusing. At the first meeting of the British Association in Birmingham the great expenses of the ordinary led him and a few scientific friends to dine daily at a small tavern which presented the sign of the "Red Lion." Before the conclusion of the meeting, the Red Lion dinners became so famous that the tenement would scarcely hold the guests, and it was resolved to continue them wherever afterwards the Association should meet. Gradually a club was formed, called the Red Lion Club, the members of which still assemble regularly in London, and amongst them may be found some of the most distinguished cultivators of science, literature, and art, of the metropolis. It was at these meetings he chaunted his songs, which were always highly relished from the ease and gaiety that distinguished them, and

from their reference to recent scientific or public events. Thus, at the meeting of the British Association at Oxford, in 1846, Mr Strickland gave a long evening lecture on the Dodo, a bird found on three islands of the Indian Archipelago by the early Portuguese navigators, and only extinct within the last two centuries. The subject was discussed for several hours the following morning in Section D, and gave rise to much amusement, when, in spite of the Prince of Canino's contending for the Dodo being of the cock-a-doodle species, it was generally voted to be a gigantic pigeon and a percher, though destitute of flying wings. At the next Red Lion dinner Forbes chaunted a long "ornithological romance," giving a history and full account of the discovery and opinions concerning the Do-do. The following are some of the best verses of this song :—

THE FATE OF THE DO-DO.¹

Do-do ! Although we can't see him,
His picture is hung in the British Museum ;
For the creature itself, we may judge what a loss it is,
When its claws and its bill are such great curiosities.

Do-do ! Do-do !
Ornithologists all have been puzzled by you !

Do-do ! Monsieur de Blainville—
Who hits very hard all the nails on his anvil,
Maintains that the bird was a vulture rapacious,
And neither a wader, nor else gallinaceous :

A Do-do ; a Do-do,
And not a cock-a-doodle doo !

Do-do ! John Edward Gray, sir,
Doubted what Mr de Blainville did say, sir,
And held that the bird was a vile imposition,
And that the old Dutchman had seen but a vision—

A Do-do ; a regular do !
And didn't believe one word was true !

Do-do ! alas for our wisdom !
Strickland has come to the judgment and his doom,
From a hole in the head, and a bone with a ridge on,
Is that our *rara avis* was only a pigeon,

Our Do-do only a doo,
A regular doo, like a turtle-doo !

Do-do ! Alas there are left us
No more remains of the *Didus ineptus*,
And so, in the progress of science, all prodigies
Must die as the palm-trees will, some day at Loddiges,

And, like our wonderful Do-do,
Turn out not worth the hullabaloo !"

But during all this time, though incessantly occupied in writing papers and books, arranging species, making excursions, multiplying observations and deducing laws, he ever considered all these as preparatory to the one great object of his life—namely, the occupation of the chair of Natural History in the University of Edinburgh. Even his marriage, which occurred in 1848, to the youngest daughter of the late General Sir C. Ash-

¹ He pronounced these syllables as in the verb "To do."

worth, did not, as with most men, induce him to take a house and furnish it. Though in London he was not of it, and he perseveringly refused to hamper himself with any incumbrances which might interfere with or ultimately prevent his elevation to the great professorship in the North. All his hopes and future plans pointed to Edinburgh as the only appropriate place for developing that vast amount of natural history acquirement he had attained. There, in the centre of the well-explored scenes of his youth, and surrounded by the friends and brethren of his student-days, was to be systematized the extraordinary mass of isolated observations which he had all his life been laboriously accumulating. There he was to give forth to crowded audiences the great generalizations which his penetrating intellect had enabled him to form. There he was to obtain that leisure which would enable him to finish those splendidly-illustrated works that were to hand his name down to posterity. There was to be formed a magnificent museum, to be arranged after a method of his own, and for which, during many years, he had been silently making preparations. Whole collections formed by naturalists in various parts of Europe were to have been absorbed in this great undertaking, and to him many jealous cultivators of science had promised to surrender treasures which no other man now is likely ever to command. So consistently and ably had he carried out those principles of scientific brotherhood which we have seen he developed in his early youth, that there can be no doubt that the Edinburgh Museum, which he had long determined to erect into a great monument to his name, would have ultimately equalled, if not surpassed, all similar institutions of the kind. Those and like plans he developed to us in the conversations we had with him on his first arrival in Edinburgh after his appointment to the chair; and all who knew him will readily believe that they were not mere dreams or idle imaginings. For ourselves, we are firmly persuaded that, had he lived other ten years, his name would have descended to posterity as illustrious as those of Aristotle, Linnæus, and Cuvier.

At length he arrived at the goal of his wishes. How did his old friends rejoice on the 15th of May 1854, when, at his inaugural lecture, they spontaneously hastened from all parts of the country to welcome him and do him honour! None of them will soon forget the splendid auditory which assembled in the largest class-room of the University, crowded to overflowing with the learning, talent, and science of the modern Athens. To them with what meaning did the following passages teem, in the noble discourse he then delivered, and which he afterwards revised for publication in the June No. of the *Monthly Journal of Medicine*:—

“If any spot on earth is peculiarly adapted for the study of natural history it is this—the district in whose centre we are now assembled. Everywhere about us are abundant and admirable illustrations of zoology, botany, and geology. Of its excellent and well-explored flora I leave my eminent colleague and old friend, the Professor of Botany, to speak. Amid the rich materials of its fauna I learned some of my earliest and best zoological lessons. To dredge the Frith of Forth under the guidance of shrewd, strong-handed, and strong-armed Newhaven fishermen, was an early ambition of mine, and one never too often gratified. I know the riches of the living treasures that lie in its sub-

marine deeps, and along its shores ; and though, since the time I ventured to print occasional notices of these embryo efforts, I have explored most part of the coasts of the British Isles, and our seas far out, and foreign seas and estuaries, famous for their productions, I have not found any marine region with a population more varied within its limits, and better calculated to illustrate effectively the subjects of a naturalist's studies.

“ As to geology, where can there be a better district for practising the student in field observation? The leading phenomena of rock-masses are brought almost to the door of our class-rooms. Sedimentary and igneous rocks contend to show us their anatomy and conformation. If a considerable part of the series of strata that constitute the geological scale be wanting, their very absence, through comparison, may be made a theme of instructive discourse, whilst there are many of the most interesting formations, both fossiliferous and unfossiliferous, within the limits of a day's excursion. The variety and beauty of the mineral contents of the igneous rocks around Edinburgh have long been famous, and have imbued every geologist, who received his early training in this University, with a respect for mineralogical evidence, and a habit of readily perceiving and using mineral characters—a great advantage.

“ The tastes of most men can be traced back to the habits of their youth, and these habits are, in a great measure, moulded by the circumstances, physical as well as intellectual, amid which that youth has been passed. Grand scenery suggests grand thoughts, and every ennobling thought elevates, not merely momentarily, but permanently, the mind in which it glows. It is a great gain to a university to be placed like this, amid scenes of unrivalled beauty. The youth whose hours of relaxation are spent in the presence of those magnificent prospects, so rife and many around us, carries with him in after-life the memory of their beauty and their grandeur. The man who has gazed upon and felt the worthy delineation of a glorious landscape, a grand Turner or a luxuriant Claude, never forgets the genial, wholesome, glow of admiration that pervades his spirit at the time. How much more must he feel this ennobling sensation when he gazes on the reality of majestic landscape? And if, with all this precious accumulation of the vast and beautiful, there be combined that which is admirable in the minute—if nature, in her smallest elements, be prolific in objects of study and reflection, it is not to be wondered at that this University has been a hot-bed of naturalists, and that their philosophy has been one catholic in essence and far-extending in its range.”

And then his graceful conclusion and eulogium on his old master and predecessor :—

“ After many years of study, and travel, and precious opportunities for acquiring experience, I return to the city where I was first initiated into the science of nature, and where within these walls I learned those lessons of patient inquiry and minute observation, to whose working and training I am indebted for the place that I now hold among the Professors of my *Alma Mater*. To my illustrious predecessor and master who passed from amongst us ripe in years, honours, and fame, so lately, I gratefully record my acknowledgments for the encouragement of those tastes and the founding of that knowledge which have proved to me a chief delight. Who, that in time past

was his pupil and found pleasure in the study of any department of Natural History, can ever forget his enthusiastic zeal, his wonderful acquaintance with scientific literature, his affection for all among his friends and pupils who manifested a sincere interest in his favourite studies. When, in after life, their fates scattered them far and wide over the world, some settling amid the civilized obscurity of rural seclusion; some rambling to the far ends of the earth to sift and explore wild savage regions; some plunging into the boiling and noisy whirlpool of metropolitan activity; none who remained constant to the beautiful studies of his pupilhood was ever forgotten by the kind and wise philosopher, whose quick and cheering perception of early merit had perpetuated tastes that might have speedily perished if unobserved and unencouraged. The value of professorial worth should chiefly be estimated by the number and excellence of disciples. A large share of the best naturalists of the day received their first instruction in the science that was afterwards to prove their fountain of honour from Professor Jameson. Not even his own famous master, the eloquent and illustrious Werner, could equal him in this genesis of investigators. Under his auspices, too, were lasting friendships and unions of kindred minds formed that have been productive in good to the cause of knowledge. Valuable as were his writings—each when estimated with regard to the position of science at the time of its issue, an effective advance—his pupils were even more valuable. The greatest praise of a great professor is that which proclaims he has founded a school. And where else in the British empire, except here, has there been for the last half century a school of Natural History?"

The course which he thus commenced was attended to its conclusion by a class of students and amateurs so numerous that it could scarcely be accommodated on the benches, one hundred and fifty professional students alone having enrolled their names. What a contrast did this present to the hard worked for pittance afforded to him as a man of science by Government! How he revelled in the idea of the easy income and the time at his own disposal which the possession of the Edinburgh chair would give him—and how apparent it was, that although grateful for the encouragement and advantages afforded to him by official appointments in London, his genius and scientific spirit had long pined to throw off the trammels which had been imposed upon them! These and similar feelings he has recorded in the following mock-heroic stanzas:—

A DOLEFUL BALLAD ABOUT THE RED TAPE WORM.

Written by a Government Clerk, who at an advanced age had awakened to a knowledge of the fallacy of the Superannuation Fund.

" Oh the Red Tape Worm is munching my soul !
 Oh the Red Tape Worm is crunching my poll !
 Spirit and body—substance and form—
 All chew'd up by the Red Tape Worm !

The Red Tape Worm, though wondrously wise,
 Is very shorted-sighted, or has no eyes;
 And the best anatomists all would fail
 To make of the animal head or tail !

I know a Treasury clerk or two,
Who love that worm as its mother would do;
Who'd rather see Newton and Shakspeare fry
Before they would let one Tape Worm die.

In Downing Street the Tape Worms thrive;
In Somerset House they are all alive;
And slimy tracks mark where they crawl
In and out along Whitehall.

A very young Tape Worm we may meet
In Marlborough House and Jermyn Street,
Rearing to play its parent's part
On a milky mixture of science and art.

The Red Tape Worm is especially fat
When lodged in the brain of a diplomat,
'Tis there he'd coil and suck for ever
His loved tit-bit of Turkey's liver.

* * * *

When I'm dead and yield my ghost,
Mark not my grave by a Government post;
Let mild Earth Worms with me play,
But keep vile Tape Worms far away.

And if I deserve to rise
To a good place in paradise,
May my soul kind angels guide,
And keep it from the official side!

[*The Government Clerk revels for a moment in this dream of celestial bliss, but suddenly awakes to the maddening reality, and sings,—*]

Oh the Red Tape Worm is munching my soul!
Oh the Red Tape Worm is crunching my poll!
Spirit and body—substance and form—
All chew'd up by the Red Tape Worm!"

It would be easy for us to introduce a vast number of humorous songs by Forbes, more or less related to his natural history studies, not to speak of others not connected with them. Thus, "The Sea-Serpent," "The Potato," the "Chanson Microscopique," "Chloroform and the Dead Pig," "John Chinaman," and "Father Matthew," are all excellent. We cannot, however, forbear from introducing "The Oyster," not only on account of its merits, but because it is the last we heard him chaunt. We sat next him at the annual dinner given by the Promoter of the Medical Faculty of the Edinburgh University in August 1854, on the graduation day, when he introduced the following rhymes, by saying they were a report of a lecture by an Irishman on

THE ANATOMY OF THE OYSTER.

"Of all the conchiferous shell-fish,
The oyster is surely the king;
Arrah, Mick! call the people who sell fish,
And tell them a dozen to bring.
For its I that intend to demonstrate,
The cratur's phenomena strange;
Its functions to set every one straight,
And exhibit their structure and range,
In sweet rhyme!

Now boys, I beseech, be attentive,
 On this Carlingford fasten your eyes,
 As I spread it before you so pensive,
 Its gape opened wide with surprise;
 See that small purple spot in the centre,
 That's its heart, which is all on the move;
 For though looking as deep as a mentor,
 Its tenderly bateing with love
 All the while!

Like a Chesterfield peacoat, its liver
 (Of fusty brown Petersham made)
 It folds round its stomach, to give a
 Supply of fresh bile when there's need.
 For though *we*, when we swallow our oyster
 Like it raw, and by cooks undefiled,
 The cratur itself is much choicer,
 Preferring its condiments biled!
 It's so nice.

The fringes that circle its body,
 Which epicures think should be clear'd,
 Are the animal's lungs—for 'tis odd he,
 Like a foreigner, breathes through his beard.
 And among all its memorabilia,
 Than this structure there's none half so queer,
 Though Sharpey may say they are *cilia*,
 A wiser contrivance to speer.
 Let him try!!

Now these are the facts in the history
 Of an oyster I'd on you impress;
 I've sarved them up plain without mystery,
 To cook them would just make a mess.
 So now, boys, we'll fetch in the whisky,
 Since the water is hot on the hob;
 Whilst we stir up our native so frisky,
 By sticking a knife in his gob!!
 Dear ould fish."

It was observed by a Professor present at the dinner, that the last line reminded him of certain ineffectual efforts to inject the oyster, by the late Dr Barclay, who concluded his attempts by saying, "Well, you brute, if I can't inject you, I'll eat you," suiting the action to the word. At this same dinner also, Forbes communicated a fact illustrating how lecturers are sometimes suddenly manufactured in London. At the commencement of one of his courses on Botany, in King's College, he observed a gentleman assiduously writing notes day after day. He seized an opportunity of remarking to this individual, that he seemed to be taking a great amount of trouble. Whereupon it was frankly explained to him, that the supposed student had been recently appointed lecturer on Botany in one of the London medical schools, and knowing very little of the subject, found it convenient to deliver to his own students in the afternoon the lecture he heard Forbes give in the morning.

Last autumn, after remaining for a short period in London, and making final arrangements for the transmission of his private collections, books, etc., to Edinburgh, he joined the meeting of the British Association at Liverpool,

where he was elected President of the Geological Section. We have been informed that nothing could exceed the tact and judgment with which, during one of the most stormy debates that ever occurred, and in which his many friends were engaged on opposite sides, he contrived not only to prevent rancour and ill-feeling, but even to introduce a genial humour, and extract harmony from discord.

He commenced the winter session in Edinburgh with a fatigued and jaded look, and informed us that, on a geological trip before the Liverpool meeting, he had very imprudently continued to walk and drive four hours, after being thoroughly wet through in a heavy shower of rain. He complained of chills and feverishness, indicating, as he insisted, a return of his old enemy, the remittent fever he had caught in Greece, and for which he took quinine. On Sunday, November 5, we were summoned to his bedside, and found him labouring under slightly febrile symptoms, with an accelerated pulse. Notwithstanding our urgent remonstrances to the contrary, he insisted on going to the College next day as usual, and such was his anxiety regarding the formation of his class, that he continued to lecture up to the Thursday following. Then hoping a few days' rest would restore him, he announced his intention of suspending his lectures until the following Monday. The febrile symptoms however continued to increase, and on Sunday he complained of obscure pain in his back. Notwithstanding the most active treatment the case admitted of, the symptoms on Tuesday assumed a severity that left us in no doubt as to the grave nature of the case. Mr Goodsir and the writer, who were in constant attendance on our dear friend, now sought the further advice in consultation of Dr Christison. We need not say how anxiously every point was considered, or how despondingly we were obliged to confess that little hope existed of his recovery. On Thursday the progress of the disease destroyed even the little hope that remained to us. He was informed of his approaching end, and received the intelligence with calmness, made provision for his wife and family, left his scientific papers to R. Godwin Austen, Esq., secretary of the Geological Society, and all his collections of natural history to the Edinburgh University, which he loved as a student, and adorned as a professor. He died on Saturday, November 18, at the early age of 39 years.

We were then informed that he had frequently expressed a desire that after his death the body should be examined, for the benefit of science; a circumstance we are proud to record of him, as indicative of the ardent love of knowledge by which he was ever distinguished. His wishes were fulfilled and the morbid changes which had occurred were ascertained to be a chronic abscess of the left kidney, which latterly occasioned extensive abdominal disease beyond the reach of art, and for the particulars of which we must refer to the *Monthly Journal of Medicine* for January 1855, p. 90.

To describe the sensation which the death of Professor E. Forbes occasioned is scarcely possible. That he who had of late filled so large a space in the eye of the scientific world—one of the council of the Royal Society, President of the Royal Geological Society, and of the Geological Section of the British Association—member of the Linnæan, Zoological, Geographical, and other Societies—

that he who, at the age of 39, had succeeded to the chair of Jameson in the Edinburgh University, and for whom a long career fruitful in new discoveries, honours and emoluments seemed so certain, should be thus suddenly cut off, was not only most unexpected, but appeared to be a misfortune too great to be readily realised. But so it was; and although the great systematic works he projected will never appear, still so powerful has been the influence of his genius, that wherever natural history is cultivated—wherever the union of botany, geology, and zoology can be appreciated—wherever science, literature, and art are acknowledged to be capable of elevating the mind and purifying the heart, his loss will be mourned as that of one of their most earnest and truthful disciples. His remains were accompanied to the Dean Cemetery by the members of the University Senate in their robes, with the venerable Principal at their head; by the Lord Provost, Magistrates, and Town Council of the city; by a large number of students, and a great concourse of his friends and brother naturalists, who assembled from all quarters to pay this tribute of respect to his memory.

The following extract from the *Literary Gazette* seems to us so truthful an analysis of his character, that we cannot do better than simply transcribe it.

“Edward Forbes had a great intellect. He was an acute and subtle thinker, and the broad philosophical tone and comprehensive grasp of his many-sided mind enabled him to appreciate and to understand the labours of others in fields of inquiry far different from his own. A naturalist by inclination and by profession; a close observer in the museum and in the field; possessed of a vast acquaintance with the details of those branches of science which he had made his especial study; no less capable of the widest generalizations, as his *Ægean* researches more especially show; in speculation a Platonist, delighting in Henry More; in literature and in art blessed with a solidity of judgment and a refinement of taste such as fall to the lot of few; in social life a humorist of the order of Yorick: gifts like these are alone sufficient to raise a man to eminence, and to lead us to lament, as a great calamity, his sudden and early death. But it was not these qualities which distinguished him so highly beyond his fellows. To say that he had them will not enable those who stood without the privileged circle of his friends to comprehend why, within that circle, the old mourn him as a son, and the young as a brother. It is not because he was so gifted that the veterans of science one and all affirm his loss to be irreparable, and the aspirants know that they may succeed but cannot replace him. Our affections cling to character and not to intellect; and rare as was the genius of Edward Forbes, his character was rarer still. The petty vanities and heart-burnings which are the besetting sins of men of science and of men of letters, had no hold upon his large and generous nature—he did not even understand them in others. A thorough spirit of charity—a complete toleration for everything but empiricism and pettiness—seemed to hide from him all but the good and worthy points in his fellow-men. If he ever wronged a man, it was by making him fancy himself better than he was. Worked to death, his time and his knowledge were at the disposal of all comers; and though his published works have been comparatively few, his ideas have been

as the grain of mustard-seed in the parable—they have grown into trees, and brought forth fruit an hundred-fold.”

We are happy to say that Forbes' relatives have found among his papers a most methodical list of all his writings, which literally amount to hundreds in number, commencing with “Notes of Experiments on Animals of the Genus *Zymnœa*,” read to the Royal Physical Society of Edinburgh, June 24, 1832, and terminating with the article *Siluria*, in the last October number of the *Quarterly Review* (1854). There is also a Journal of his Voyage to Asia Minor and Greece, kept with the utmost regularity. We have been allowed to look over some of these papers, and have seen with astonishment the amount of labour of various kinds which he had accomplished. In science there are his long catalogues of plants and animals of different regions; his numerous contributions to different journals, and his published works. Several books, including “*The Rambles of a Naturalist*,” “*The Zoology of the European Seas*,” and various papers, are in a forward state of preparation, and many of the blocks already cut for illustration are now in the hands of his publisher, Mr Van Voorst. In literature there are endless lists of various papers and contributions to journals, besides a host of poetical compositions on almost every subject, and some serious pieces in verse of great beauty, of which latter we append to this notice a short and pleasing specimen. In art, there are endless sketches of men and things, poems illustrated in outline, water-colour drawings, and careful designs for future scientific publications. There is a very extensive series of landscape sketches in water-colour, depicting the influence of geological structure on scenery, which it was his intention to have brought out as a separate publication. His collected works would, if judiciously edited, serve to show the world what Forbes had already done, and of how much he was capable; and we sincerely trust that some kindred spirit in science and literature will still, for the sake of his memory, combine those already published with the fragments he has left, and present us with a work worthy of his genius and equal to his fame.

But who can do justice to the wonderful power he possessed of inspiring confidence and respect in all with whom he came in contact—to that earnestness which evidently guided his own proceedings, and which he infused into the labours of others—to the remarkable quality of availing himself of the investigations of his fellow-naturalists, and, while thus carrying out his own generalizations, elevating the isolated observer in the opinion of himself and of the public—or to the genial humour which presided over his intercourse with others, and especially gave a charm to his lectures, and even to his scientific publications? Who that has heard him unfolding his beautiful theories, and seen him illustrating them by sketches on the board, now rapidly producing all sorts of animals—now, with a steady artist's hand, displaying the graceful curves of a shell, and then, by a touch, imparting animation to what had previously been dead and inert,—which of his audience have not recognised that his philosophy was “not harsh and crabbed, as dull fools suppose,” but capable of at once exciting enthusiasm and creating admiration? In him, indeed, was a union of qualities so valuable and varied, that we doubt the probability of our

soon meeting with it again ; for he possessed the investigating and generalizing power of the man of science, the skilful hand of the artist, the imaginative mind of the poet, and the truthfulness and simplicity of an upright and noble nature.

The following are a few lines of poetry, illustrative of Forbes' more serious compositions :—

TO A STAR.

“ A night sky overhead ;
 One solitary star
 Shining amid
 A little cloud of blue, for dark clouds hid
 Its sister-sunlets. On its azure bed
 It seemed a sun, for there
 No jealous planet shone with which it to compare.

 The dark clouds rolled away,
 And all night's shining train
 Of suns and stars,
 And the great moon, poured forth their silvery light.
 Where, then, was that fair star which shone so bright ?
 Where was it ? none could say ;
 Yet there it surely was, although it seemed away.

 So lustrous shall we find
 On earth each living soul
 When seen alone ;
 And though, when brighter forms around it press,
 We lose its form and doubt its loveliness,
 Still should we bear in mind
 That it is not less bright although it be outshined ! ”

We conclude with some lines by a gentleman (Mr Dobell) well known in the literary world, who attended the course of Natural History last summer, and who wrote, on hearing of the death of Professor Forbes,

Nature, a jealous mistress, laid him low.
 He woo'd and won her ; and, by love made bold,
 She showed him more than mortal man should know ;
 Then slew him lest her secrets should be told.”



Tail piece by Forbes, from his book on Star Fishes.

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