

top and the bottom of the mine. The attraction of that shell, therefore, is the difference between the two numbers which I have given, or is 1-14900th part of gravity nearly. But if that shell had been as dense as the earth generally, its attraction would have been 1-5600th part of gravity nearly. Therefore the earth generally is more dense than the coal measures in the proportion of 149 to 56 nearly. You will remark that all these numbers are rough, and to make their results available, some small corrections are required (to which I have not alluded) and some knowledge of the density of the different beds, &c., which I do not possess at present.

I am, my dear Sir,

Yours, very truly,

G. P. AIREY.

The Late John Lockhart.

The hand of death, though most conspicuous of late in the battle-field, has not been idle in the walks of science and literature. Some, indeed of the men of note whom we have recently lost are of so great eminence that we look around among the rising generation with something like despair to find any capable of filling the gaps which have been left.

Such a one was John Gibson Lockhart, the biographer and son-in-law of Sir Walter Scott, who now lies in the same grave with him at Dryburgh. Mr. Lockhart was the second surviving son of a Scotch clergyman, of gentle descent and old family, in the county of Lanark. He was born, 1791, in the manse of Cambusnethen, whence his father was transferred, 1796, to Glasgow, where John Lockhart was reared and educated. The inheritance of genius (as in many other instances) would appear to have come from his mother, who had some of the blood of the Erskines in her veins. His appetite for reading, even as a boy, was great. Though somewhat idle as regards school study, he yet distinguished himself both at school and college, outstripping his more studious competitors, and finally obtaining, by the unanimous award of the Professors, the Snell Exhibition to Balliol College Oxford, where he was entered, 1809, at the early age of 15. Dr. Jenkins, the present Dean of Wells, was his tutor. Before leaving the University he took honours as a first-class man. After a sojourn in Germany sufficiently long to enable him to acquire its language and a taste for its literature, he was called to the Scottish bar in 1816; but though endowed with perseverance and acuteness sufficient to constitute a first-rate lawyer, he wanted the gift of eloquence to enable him to shine as an advocate. As he natively confessed to a party of friends assembled to bid him farewell on his departure from Scotland for London, "You know as well as I that if I had ever been able to make a speech there would have been no cause for our present meeting." His wit, his learning, and extensive reading found, however, a ready outlet through the pen. In 1818 Lockhart was introduced to Scott, who in 1820 evinced his esteem and affection for him by giving him in marriage his eldest daughter. At Scott's death in 1832 he was left sole literary executor. Many of the cleverest things in *Blackwood's Magazine* (established in 1817) were written by Lockhart in concert with his friends John Wilson, Capt. Hamilton, Hogg, &c., and much ill-blood was caused among the Whigs, who from assailants, now began to be assailed by opponents of no mean skill in fence. Party warfare then ran high in Edinburgh; much ill-blood was engendered. Unfortunately, the strife was not confined to squibs, and at least one fatal catastrophe was the result. These events left a lasting impression on Lockhart's mind, and when, in 1826, he was invited to become editor of the *Quarterly Review*, he quitted Edinburgh without regret, with his family, as he received from the Government of Sir Robert Peel and the Duke of Wellington the post of Auditor of the Duchy of Lancaster. The management of the *Quarterly Review*, to which he contributed many valued papers, chiefly biographical, continued in his hands for 28 years down to 1853, when his failing health compelled him to resign the labour. The latter years of his life were mournfully darkened by domestic calamity. The deaths in succession of his eldest boy—the pet of Sir Walter, the "Hugh Littlejohn" for whose instruction he wrote *Tales of a Grandfather*—of his wife, and all the other members of Sir Walter Scott's family, were followed and wound up by that of his only surviving son, under circumstances of poignant grief to a father's heart. The vials of sorrow seemed to have been emptied upon his head.

With broken health and spirits he betook himself to Rome, by medical advice, with slight hope on his own part of benefit. Having little taste for foreign travel, he returned home in the spring of the present year. He made a partial rally on his arrival in Scotland, but a very severe attack of diarrhoea in the month of October shattered his already enfeebled frame: he was removed from Milton Lockhart, the house of his eldest brother, M.P. for Lanark, under the care of his old friend, Dr. Fergusson, to Abbot-ford, where he breathed his last, on the 25th of November, in the arms of his daughter, the sole survivor of the line of Scott in the second generation.—*Evening Mail*.

On the Re-Cutting of the Koh-i-Noor Diamond.

BY PROF. J. TENNANT.

At the meeting of the British Association at Belfast, the author gave some account of this diamond, and described some of the remarkable changes which it had undergone, and on this occasion exhibited some interesting diagrams illustrating the crystalline form and cleavage of the diamond. Mr. Tennant now introduced the subject by drawing attention to the former weight of the diamond, compared with its present bulk, now reduced by cutting; and also to its mineralogical appearances. With regard to the history of this extraordinary gem, he stated that some people had actually disputed its authenticity, which caused some discussion amongst those best informed in matters of this description. At the Great Exhibition in 1851, an opportunity had been afforded, such as was never previously enjoyed by the public, of studying the substance of a vast number of foreign valuable stones, and probably of Koh-i-Noor diamond was the most attractive in that valuable collection. The rough manner in which that diamond had been cut, however, had disappointed many who looked upon it. When the sun shone on it at noon-day the stone appeared peculiarly brilliant, but when the atmosphere was dull, it had merely the appearance of a thick piece of glass. This placed it in a very unfavourable position, and caused doubts to arise in the minds of some gentlemen as to its authenticity. This diamond originally belonged to Runjeet Singh, who usually wore it upon his left arm, according to the custom of Eastern potentates; and the original mounting was now in the hands of Her Majesty's jewellers. The stone perfectly agreed with the drawing which had been made of it by Miss Eden, and also of the account given of it by the Hon. W. G. Osborne, who had published a very interesting description of the Court of Runjeet Singh, where the old man (who was blind and a cripple also) sat arrayed in a robe of simple white, wearing upon his arm the Koh-i-Noor diamond, and surrounded by his eastern nobles. On special occasions, Runjeet Singh was in the habit of decorating his horse with this precious gem, together with numerous other valuable stones, mounted upon various parts of his harness. All authentic accounts of the East proved that the nobles were in the habit of decorating their horses in this manner; and the horse of Runjeet Singh was decorated with diamonds valued at £300,000, the great Koh-i-Noor being placed on the pommel of the saddle. Lord Auckland and his sister, the Hon. Miss Eden, had this diamond sent to them for inspection, in the East Indies, and Miss Eden's drawings agreed with the appearance of the diamond on its arrival in this country. Mr. Tennant stated that in 1853 he had given in a report as to the cutting of the Koh-i-Noor diamond; and after producing various models, Her Majesty fixed upon the present form, by which the widest spread of brilliancy was obtained. When the diamond was exhibited at the Crystal Palace it weighed 186.1-16 carats; its present weight, reduced by cutting, was 102.13-16 carats. The Persian diamond weighed 130 carats, and the great Russian diamond 193 carats. After giving a description of the method of cutting diamonds, and the plan adopted for cutting the Koh-i-Noor, he observed that the late Duke of Wellington had been an interested spectator of the operation, and was a frequent visitor during its progress. It was finished in September, 1852, and occupied thirty-eight days in cutting. Diamonds were usually reduced to one-half their weight in cutting; and he gave the exact weight of the Koh-i-Noor, in order to correct various erroneous statements which had been published on the subject. The finest diamond in France weighed 139 carats, and had cost £130,000; it was called the Regent, or Pitt diamond. To arrive at an estimate of the value of the Koh-i-Noor the author stated, that it was only requisite to multiply 102 (its weight) by 102, and then by 8, which would give £83,232 as its value. This rule would not apply to stones having defects, as instanced in the celebrated "Nas-uck" diamond, for which the East India Company refused £30,000, and yet this stone when