

the imaginary two-foot rule—and why is about 115 feet more common than other distances?

I think it probable the sort of objects with which a man is familiar in his daily life may have some influence on his judgment in this respect. The men I questioned were for the most part engaged in warehouse or out-door work. I should like to know what answers watchmakers or jewellers would give. This theory, however, fails to account for the different estimate formed by the same individual, when the moon is high above, or on the horizon; but I imagine, in the latter case, the imaginary rule is superseded, or more properly modified, by the terrestrial objects which are in the field of vision with the moon.

Cardiff, March 7

GEORGE C. THOMPSON

#### Cuckows' Eggs

MAY I be permitted to make a few observations upon Mr. Sterland's letter in your issue of the 27th of January, relative to the cuckows' eggs' controversy.

In answer to Prof. Newton's query, "If the eggs in question were not cuckows', what birds laid them?" Mr. Sterland says, "My reply is simply that they were laid by the birds in whose nests they were found."

Besides the well-known fact mentioned by Mr. Newton (NATURE, p. 266), "that when birds lay larger eggs than usual the colouring is commonly less deep," which tells so strongly against Mr. Sterland, I will only mention the following instances.

1st. The egg No. 9 in the series given by Herr Baldamus, (see *Zoologist* for April 1868), which the Royal Forester, Mr. Braune, found in the ovary of a just-killed cuckow, and which "was coloured exactly like the eggs of Hypolais."

2ndly. The egg No. 26 in the same series, belonging to the collection of Dr. Dehne, described as a "light-greenish blue egg without any markings," and "might have passed for the egg of either species of the redstarts," which specimen "was laid in a cage by a cuckoo that was caught in a hay loft." (The italics are mine.)

3rdly. The two instances given by Mr. H. E. Dresser, (NATURE, p. 218) of two eggs of the cuckow "closely resembling" those "of the common bunting (*Emberiza miliaria*)," one found in a blackbird's, the other in a robin's nest.

Can Mr. Sterland explain away the 1st and 2nd instances? and how does he reconcile the 3rd instance with his affirmation? Will he venture to say that the two apparent bunting's eggs were laid by a blackbird and a robin respectively, or, will he risk the remark that a common bunting had taken a cuckow-like freak into its head and been laying its eggs in other birds' nests? As either alternative is too absurd to be worth a moment's consideration, we can only conclude that they are cuckows' eggs, unless there has been some mistake as to the nests from which they were taken—scarcely likely, if Mr. Dresser's remarks are carefully read.

Therefore I think Mr. Sterland must admit, if he accepts these facts as authentic, that the cuckows' eggs do vary to a large extent, and doing so, he has little foundation for doubting the identity of the specimens mentioned by Herr Baldamus as taken from nests whose eggs they resembled.

For my own part I have every confidence in the discrimination of that ornithologist, and am not afraid that he had been carried away by a pet theory that led him to imagine this or that egg taken "out of the nest of the hedge-sparrow or tree-pipit" to be a cuckow's merely because it is "an egg rather larger than the rest, but marked and coloured in a similar manner." If Mr. Sterland will carefully examine Herr Baldamus's evidence he will find that it is not of such a superficial character.

I agree with Mr. Sterland that it is certainly singular that British and Continental observers should come to such opposite conclusions as to this variation of the cuckow's egg in their respective countries; but this is no reason for impeaching (merely because our experience differs) the testimony of the eminent Continental oologists who affirm this extreme variation, and to some of whom Herr Baldamus's theory is probably unknown; as instance, in the two quotations by Prof. Newton (NATURE, p. 266) from *Des Murs* and *Degland et Gerbe*.

Can it be that such extreme variation really does occur on the Continent, and is yet comparatively absent in Britain? I leave it to abler hands than mine to discuss; but if it should prove so, it will be another feature in the already remarkable habits of the cuckow.

Tadcaster, Feb. 7.

FRANCIS G. BINNIE

#### MR. RUSKIN ON RIVER CONSERVATION

IN his recent Friday evening discourse on Verona and its Rivers, at the Royal Institution, Mr. Ruskin, speaking of the Adige and the Po, said: "I want to speak for a minute or two about these great rivers; because in the efforts that are now being made to restore some of its commerce to Venice precisely the same questions are in course of debate which again and again, ever since Venice was a city, have put her Senate at pause—namely, how to hold in check the continually advancing morass formed by the silt brought down by the Alpine rivers. Is it not strange that for at least six hundred years the Venetians have been contending with those rivers at their mouths—that is to say, where their strength has become wholly irresistible—and never once thought of contending with them at their sources, where their infinitely separated streamlets might be, and are meant by Heaven to be, ruled as easily as children? And observe how sternly, how constantly the place where they are to be governed is marked by the mischief done by their liberty. Consider what the advance of the delta of the Po in the Adriatic signifies among the Alps. The evil of the delta itself, however great, is as nothing in comparison of that which is in its origin. The gradual destruction of the harbourage of Venice, the endless cost of delaying it, the malaria of the whole coast down to Ravenna, nay, the raising of the bed of the Po, to the imperilling of all Lombardy, are but secondary evils. Every acre of that increasing delta means the devastation of part of an Alpine valley, and the loss of so much fruitful soil and ministering rain. Some of you now present must have passed this year through the valleys of the Torcia and Ticino. You know, therefore, the devastation that was caused there, as well as in the valley of the Rhone, by the great floods of 1868, and that ten years of labour, even if the peasantry had still the heart for labour, cannot redeem those districts into fertility. What you have there seen on a vast scale, takes place to a certain extent during every summer thunderstorm, and from the ruin of some portion of fruitful land the dust descends to increase the marshes of the Po. But observe further—whether fed by sudden melting of snow or by storm—every destructive rise of the Italian rivers signifies the loss of so much power of irrigation on the south side of the Alps. You must all well know the look of their chain—seen from Milan or Turin late in summer—how little snow is left, except on Monte Rosa, how vast a territory of brown mountain-side heated and barren, without rocks, yet without forest. There is in that brown-purple zone, and along the flanks of every valley that divides it, another Lombardy of cultivable land; and every drift of rain that swells the mountain torrents, if it were caught where it falls, is literally rain of gold. We seek gold beneath the rocks; and we will not so much as make a trench along the hillside to catch it where it falls from heaven, and where, if not so caught, it changes into a frantic monster, first ravaging hamlet, hill, and plain, then sinking along the shores of Venice into poisoned sleep. Think what that belt of the Alps might be—up to four thousand feet above the plain—if the system of terraced irrigation, which even half-savage nations discovered and practised long ago in China and in Borneo, and by which our own engineers have subdued vast districts of farthest India, were but in part also practised here—here, in the oldest and proudest centre of European arts, where Leonardo da Vinci—master amongst masters—first discerned the laws of the coiling clouds and wandering streams, so that to this day his engineering remains unbettered by modern science; and yet in this centre of all human achievements of genius no thought has been taken to receive with sacred art these great gifts of quiet snow and flying rain. Think, I repeat, what that south slope

of the Alps might be; one paradise of lovely pasture andavenued forest of chestnut and blossomed trees, with cascades docile and innocent as infants, laughing all summer long from crag to crag and pool to pool, and the Adige and the Po, the Dora and the Ticino, no more defiled, no more alternating between fierce flood and venomous languor, but in calm clear currents bearing ships to every city and health to every field of all that azure plain of Lombard Italy. . . . Without in the least urging my plans impatiently on any one else, I know thoroughly that this which I have said *should* be done, *can* be done, for the Italian rivers, and that no method of employment of our idle able-bodied labourers would be in the end more remunerative, or in the beginnings of it more healthful and every way more beneficial than, with the concurrence of the Italian and Swiss Governments, setting them to redeem the valleys of the Ticino and the Rhone. And I pray you to think of this; for I tell you truly—you who care for Italy, that both her passions and her mountain streams are noble; but that her happiness depends, not on the liberty, but the right government of both."

#### CAPTAIN FRED. BROME

WITH great regret we have to record the death of Captain Fred. Brome, formerly Governor of the Military Prison on Windmill Hill, Gibraltar, and well known to many of our geological and archæological readers as the able and indefatigable explorer of the ossiferous caves and fissures of the rock.

His explorations, an account of which, so far as they related to the human remains and relics, was published in the Transactions of the Congress of Prehistoric Archæology for 1858, were commenced in April, 1863, and unremittingly continued, often under considerable difficulties, to December, 1868, when he was most unaccountably removed from the post he had so long and so well occupied.

The amount of labour and responsibility thus voluntarily undertaken by Captain Brome, solely in the interest of science, and without any personal motive whatever, can scarcely be imagined, nor can the value of the results obtained by him be easily over-estimated.

A more striking instance of self-devotion to a purely scientific object can nowhere be found.

The results of Captain Brome's work may be said to have afforded all, or nearly all, the knowledge we possess of the priscan population of the Rock of Gibraltar, and have added enormously to our materials for determining the nature of its quaternary fauna, as disclosed in the ossiferous breccia and other contents of the rock fissures, from the examination of which Cuvier truly anticipated that the most important information would be derived.

Captain Brome's death occurred, we are sorry to say, under very melancholy circumstances. Having been removed from the post which he had so long and so usefully filled, and for which, from his great experience, extraordinary energy, and high sense of duty, he was so admirably qualified, he was appointed, on coming to England, Governor of the Military Prison at Weedon. Here he hoped to find an asylum for his family, and some compensation for the sacrifices he had been compelled to make in leaving Gibraltar.

But this was not to be. Amongst the numerous reductions of late effected in our military establishments, the disestablishment of the prison at Weedon was one. The notice that his services would be no longer required was received by Captain Brome a short time since, and it seems to have so affected him, from the apprehension that his family would thus be deprived of all support—and this after a public service of thirty years—that, although a strong and vigorous man, he gradually sank, from mental depression, as it would seem, and he may truly be said to

have died of a broken heart on the 4th March, leaving a widow and eight children, we fear wholly unprovided for.

A more melancholy case, and one more deserving of the sympathy of the scientific world, and, as we should venture to hope, of the consideration of the authorities at the War Office, it is impossible to conceive. G. BUSK

#### THE GEOLOGY OF THE HOLY LAND

IN the year 1866 the Duc de Luynes organised an expedition for investigating the physical geography and geology of the Holy Land and part of the surrounding territories. Narratives of some features of the explorations have already been given to the world, but it is only now that the first part of the geological report appears. M. Lartet, the geologist of the expedition, has chosen as the vehicle of publication for his memoir, the opening number of a new magazine—the *Annales des Sciences Géologiques*. Instead of confining himself to a record of what he personally accomplished, he has with much labour given a brief summary of the publications of previous writers, and has incorporated their results with his own, so as to present in a clear and connected form the sum of all that is at present known regarding the geology of the country between Lebanon and the Red Sea. Until the whole of the memoir is published it would be premature to pass judgment upon the position which it will ultimately take in the geological bibliography of Palestine. The present instalment, after its introductory and historical sections, passes on to describe the igneous and crystalline rocks, leaving the great limestone and later formations for a subsequent paper.

Viewed in the great scale, the geological structure of Palestine is remarkably simple. A long table-land or succession of table-lands, consisting for the most part of horizontal or gently inclined cretaceous and nummulitic limestones, is traversed by the valley of the Jordan, and cut through by transverse valleys, many of which are now quite dry. Stretching southwards into the peninsula of Sinai, these calcareous plateaux end against a mass of high rugged ground—the mountain-group of Sinai and Arabia—consisting of crystalline rocks. Here and there on the west side of the Jordan Valley, but much more markedly on the east side, the table-lands are roughened by rocks of volcanic origin. Everywhere there is evidence of vast denudation, whereby the plateaux have been cut into valleys and hills, and of a former climate when rain and river-water were much more developed than they are now.

M. Lartet describes at some length the crystalline rocks which enclose the upper end of the Red Sea, and enters into considerable detail regarding the mineral differences of these various rocks; but he touches with tantalising brevity upon their geological relations—a fault, however, which he shares with all other writers who have treated of the geology of these regions. We only learn from him that there is a central nucleus of granite round which are folded successive zones of gneiss and various schists and slates, and that all these rocks are pierced by intrusive masses of porphyry, dicrite, melaphyre, serpentine, &c. From the granites and old intrusive rocks he passes, by what seems an abrupt and awkward transition, to the basalts and lavas, which are among the most recent of the geological formations of the country; and he then takes up the schistose rocks. This arrangement is much more a petrographical than a geological one. We cannot but think that it interrupts the chronological sequence of events which it is the business of a geologist to decipher and describe. The volcanic rocks were not erupted until the cretaceous table-lands had been long exposed to denudation. It would surely have been better, therefore, to have deferred the history of the eruptions until some