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The PRESIDENT.—The next business before the meeting is the Annual Address, which Professor Duns has been so good as to prepare. Unfortunately he is not able to be present at the meeting, but the Rev. R. F. McLeod has kindly consented to read the Address for him.

STONE FOLK-LORE. By Professor DUNS, D.D., F.R.S.E., F.S.A.Scot., &c.

STUDENTS of the literature of any one great department of scientific thought must often have noticed the commanding influence of the introduction of new terms. As the knowledge of phenomena increases, and additional facts are discovered, long and well-known truths assume new relations, both among themselves and with respect to others still fresh, but, it may be, little known. How are the new relations to be brought into line both with the new and the old facts? The process is not so simple as may at first appear. It implies the differentiation of closely related but not identical forms, and, if the integration sought for is to be of use, the power to assign these to groups in themselves well defined, and yet suggestive of the resemblances, and the differences, among the members of each group. Observation, induction, inference lead to generalization, and this finds expression in a characteristic new term. This method and its outcome have been influential both in the science and the unscience of all time. Indeed, the distinction between the true and the false is not to be sought for in defective method but in the mixed minor premise. Syntheses warranted only by facts are vitiated by being neither factful nor fanciful, but a blending of both.* The terms nature, physics, metaphysics, are old-world terms; physiology and psychology, in their present scope, are more recent; biology and sociology are more recent still. Many like instances might be given, but, as having a special bearing on the subject of the present paper, other two may be named—anthropology and archæology; the latter, however, is only the archaic aspect of the former, but each term

* The author, on being asked to look over the lines referred to by the Lord Chancellor (Lord Halsbury), replied: "I am not going into the mixed minor premise: what I have in view is the practice of blending traditional superstitions with historical facts, and assigning them the same value as data for generalizations."—ED.

represents a wide and often a highly complex generalization, helpful to thinkers as keeping a variety of subjects together, each of which, nevertheless, lays claims to separate and independent discussion. For example, archaic anthropology embraces among its several leading subjects one of which little can be made, if the relations of each to all are not recognised. I refer to "Folk-Lore," which, historically, is but of yesterday. When first used, the term was limited to the consideration of the traditional superstitions, and the social or domestic customs, met with chiefly among the illiterate scattered over rural districts, or prevalent in country towns far from centres of thought, action, and enterprise. And this was before the "schoolmaster was abroad," and the policeman present in these out-of-the-way localities. When even the feeble flickering of the oil lamp did not break the darkness, or make it visible in well-peopled places. Thus there was no chance of the weird, clever ghost being caught, or the would-be witch burned, or the man who met *himself* face to face when strolling at twilight in his own garden, being treated as a lunatic.

The folk-lore sphere is now greatly widened. Though so recently as 1846 it was no more than a subordinate branch of archæology, it now claims for itself a place and importance equal to that usually assigned to anthropology and archæology themselves. "It has now been extended to include the whole vast background of popular thought, feeling, and usage, out of which, and in contrast to which, have been developed all the individual products of human activity which go to make up what is called history. As the meaning of folk-lore has expanded, so the relations of the science that studies its manifestations have extended, till it has been correlated with all the groups of organized studies that deal with the past of Man. Folk-lore, in its investigations into popular belief, gives aid to, and receives help from the cognate studies of Mythology and Comparative Religion. Folk-lore, in investigating popular usages, often finds traces of past institutions which are being studied by the new and vigorous science of Institutional Archæology. And in studying the literature of the people—the ballad, the fairy-tale, the proverb, the chap book—folk-lore has often to resort for elucidation to the products of individual artistic creation which go to form literature properly so called, especially in that mediæval phase of it that is known as romance. And, finally, as it has been found by practice

that much of folk-lore that eludes explanation from the thoughts and customs of civilized peoples finds ready elucidation from savage practice and belief folk-lore has here points of contact with ethnography and anthropology."* The claims and scope of this very recent branch of archæological science could not be better indicated than in this quotation from the editorial prefatory notes to the first volume of the *New Review*, and subsequent volumes are crowded with illustrative instances. Popular superstitions and usages, State institutions of every description, legends of savagedom—as yet unmixed with those of early civilizations, or uninjured by European thought, or only beginning to be spoiled by the reflex influences of true science and modern progress — mythologies, religion, natural and revealed, and the multitude of highly complex, difficult, and often vital questions associated with these are all held to lie within the folk-lore field.

"Whate'er the eastern Magi sought,
Or Orpheus sung, or Hermes taught,
Whate'er Confucius would inspire,
Or Zoroaster's mystic fire;
The symbols that Pythagoras drew,
The wisdom the great Plato knew;
What Socrates debating proved,
Or Epictetus lived and loved;
The sacred fire of saint and sage,
Through every clime, in every age,
In [Folk-lore's] wondrous page we view,
Discovered and revealed anew.
* * * *
Ten thousand depths it can explore,
Ten thousand truths unknown before!"

These lines have no reference to the recent Quarterly. They trumpet the praises of an early seventeenth century folk-lore precursor (*prodromos*), who, in his "*Signatura Rerum*," demonstrated, after his characteristic fashion, "the beginning, ruin, and cure of all things." That which hath been will be. The *Signatura* of Jacob Behmen (1620) was, *at his day*, only a revival of the ancient medical "theory of signatures," much in vogue two centuries previously, when its application was confined to plants, but Behmen found room in it for all things, especially in their beginnings. And *De Origine*—research into origins—has still a fascination for many to whom a differentiated fundamental notion, if it can be captured, is

* "Folk Lore," *Quarterly Review*, Vol. I., p. 1, 1890.

precious as the *prima materia*, or the *luna albit philosophorum*—white gold—was to the alchemyst. But it is just here where some thinkers overstep the lines and limits of science. The question of origin is outside of its scope. True! the greed after "goold in goupens,"* and the thirst after life's elixir which animated the alchemysts did much to make mineralogy a true science, and to foreshadow the greatest and the grandest scientific generalization of recent time—geology itself. In this paper, however, we have chiefly to do with the popular notions of things, and only with a single and very limited set of these: those, namely, associated with some artificial and some natural shapes or forms of stone under the term Stone Folklore.

From earliest times men have looked out on nature from one or other of two points of view. To some it was a revelation, to others a mystery. To the former its phenomena were facts waiting for interpretation. To the latter they were suggestive of unknowable living presences, to them as real as the facts to the true student. Science was the outcome of the one attitude, superstition of the other. But in all cases to credit superstition to ignorance, and to separate credulity from knowledge is to miss the true state of the question. Like the trees of the forest, the tree of knowledge often bears, what the woodsman calls, "sports," aliens, essentially and historically, yet belonging to the individuality of the tree, and nourished by the very sap which gives strength to the true branches. Instances are numerous as the withered leaves on evergreens at midsummer. What a list might be given of men with this complex individuality—wisdom and credulity—among the alchemysts and mystics, and even among the crowd of recent believers in spiritualism! This association of the dreams of a sort of supernaturalism with stones rare or grotesque, or with something suggestive of human qualities, finds concrete expression in fetishism. Traced towards its origin, perhaps it is only pantheism broken into myriads of loose fragments, which stand very much in the same relation to that great dream of many great souls, that the numberless grains of sand of the desert do to the solid freestone of the quarry. Intellectual workers in many lands are diligently and carefully gathering up the fragments, trying to generalize them, and to assign

* Gold in abundance (handfuls).

them a definite place in the sum of human knowledge—historical, philosophical, scientific. What Portland cement does for broken stones and gravel by moulding them into solid blocks for useful purposes, folklore savants are endeavouring to do for floating traditions in every department of thought, and also for their numberless variants. And they think something certain and sure *has* been already done, but they do not seem to know how little that is! The whole subject is full of interest because it has so much of man's past in it. Moreover, even the mere ascription of imaginary qualities to natural objects may lead to the discovery of much in them which is true and useful. The British Pharmacopœia is a witness to this as to rare and abnormal forms both of stones, of plants, and of animals.

As to stone folk-lore, I distinguish between man's mark in the stone, and the influence of the unusual shape, or the imaginary quality of the stone on man. The former falls to the student of archæology, as philological or as artistic, or as both. The folklore field proper includes all varieties of the latter. My apology for the foregoing rambling remarks is that they fit the subject of this paper, which is not the philosophy of Folklore but some illustrative instances of it in the department of mineralogy. The illustrations might be brought together under two heads, (1) the Natural History Group, and (2) the Superstitions Group, but, as several might have a place in both of these, it will save repetition to keep the instances separate.

1. THE EAGLE-STONE (*Ætites* of some) is believed to be found only in the nest of the golden eagle, and to have been put there by the noble bird itself, to facilitate the hatching of the young, and to moderate the violent heat in the breast of the incubating female. The stone is described as tapering at both ends, hollow, and enclosing a smaller stone which rattles when shaken. When the mineralogist turned his light on the stones said to have been taken from the eagle's nest, they were shown to be common wherever ironstone occurs, and are simply clay ironstone nodules, consisting of a hard crust, with a loose part at the centre made free by shrinkage. Two hundred years ago this stone was credited with extraordinary virtues. It was the *lapis pregnans* of Sir Robert Sibbald (1694)—"the King's physician"—who ascribed to it power to influence not only the chick *in ovo*, but also the possibility of the human embryo. The shape of the free *nucleus* was held to indicate sex—male or female, or

neuter. Credulity dies hard. Doubts touching the alleged virtue of the eagle-stone did not begin to arise till the middle of the eighteenth century, and it was not till the beginning of the nineteenth that all its imaginary and semi-miraculous qualities fell into disrepute.

2. THE ADDER-STONE is of ancient as well as comparatively modern repute. Pliny refers to its occurrence in Gaul as an egg (*ovum anguinum*) of many virtues. The supposed mode of its formation differed in different countries, but in each it was associated with the adder. It was long held that at the season when adders slough, many meet in one place, rarely seen by man, when the largest casts its skin in the form of a perfect tube, through which the others quickly wriggle, each one leaving a coating of slime in it. This, in drying, assumes a globular shape with a hole in the centre, and thus was formed the druidical bead of the old antiquaries; the adder stone of the vulgar; the Roman glass bead of others. It was wont to be worn as a charm against evil spirits, as an amulet against, or for the cure of, whooping cough, as a remedy for inflammation of the eyes, and as an effective help in the cutting of the child's first set of teeth! The prevalence of such notions so recently as the close of last century seems to show that the believers in the adder stone's virtues were ignorant of the process of bead making, so far at least as concerned the production of the twisting ornament by the mode in which the colours are laid on.

3. THE SNAKE-STONE has a place in literature which will never allow the popular belief to be forgotten. The reference to it in Scott's *Marmion* makes this good :—

> "Whitby's nuns exulting told
> How of thousand snakes each one
> Was changed into a coil of stone
> When holy Hilda prayed.
> Themselves within their holy ground
> These stony folds had often found."

The range of the snake-stone belief is very wide, and is determined by the distribution of the rocks in which the so-called fossilized snakes occur. They are not limited to the Ammonites of the Whitby Lias, but are met with in each of the great divisions of the Mesozoic period, from the Trias to the Chalk. But there are also Palæozoic forms which have given rise to corresponding fancies, and to which medicinal virtues, protective or curative, have been ascribed — for example *Bellerophon*, *Euomphalus*, *Lituites*,

&c. Thirty years ago specimens of these were frequently brought to me by miners as "petrified snakes"—"lucky stanes," "guid against chincough," and "other ailings." When their nature was explained and thanks given for the gift, the question was several times put, "what for then dae ye keep them?" But Scottish miners are not alone in credulity. "In a small collection of petrifactions," says a Danish bishop, "is a snake as thick as a finger, worked with one side pressed into pyrites, whence it received a bright copper colour, which I trace to the Deluge!" "Whitby's thousand snakes" are simply fossilized specimens of cephalopodous mollusca.

4. BEAD-STONE is also named St. Cuthbert's beads, Fairy beads, Limestone beads, and St. Boniface's money (*Nummuli Sancti Bonifacii*), they are the ring-like transverse sections of the so-called vertical column of stalked Echinoderms, the well-known *Encrinites* of the palæontologists, which occur in such immense numbers in some limestones as to give their name to them—Encrinal Limestones. The palæontological and recent history of these forms is one of peculiar interest. It introduces us to biological facts more wonderful by far than all the imaginary qualities ascribed to the Encrinite by the illiterate and superstitious. But it is folk and not science-lore we have now to deal with. Scott seldom missed any aspects of the former, current in the districts associated with his poems. Thus his reference to St. Cuthbert's beads—

> "But fain St. Hilda's maids would learn
> If on a rock by Landisfearn
> St. Cuthbert sits and toils to frame
> The sea-born beads which bear his name."

His reference to the "thousand snakes" has been noticed. He seems to have believed in the "snake legend," but did not well know what to make of the "beads." In his notes to *Marmion* he speaks of "the relics of snakes, which are still found about the rocks, and are termed by Protestant (!) fossilists, Ammonitæ," but referring to the beads, he uses the term under which old writers hid their ignorance, "these *Entrochi* are found among the rocks of Holy Island." In localities where the beads occur, they are still in great favour with children who make necklaces of them, or, in mimic shop-keeping use them as money. The charm associated with them, when they were hung to the cradle's

head to protect the babe from the more than kind good folk —the fairies—appears to be now forgotten.

5. THUNDERBOLT AND ELF-SHOT STONES introduce us to another folk-lore element than that chiefly before us in the instances given above. In them ignorance of their natural characteristics found a footing for superstition, but the so-called thunderbolts and elf-shots bear marks of design which ignorance ascribes to supernatural art. The celts, or stone-axes of the Stone Age, and in districts where Jurassic strata occur, belemnites—the fossilized homologous part of the present sepia and cuttlefish—were regarded as thunderbolts. The flint arrow heads of the same age were believed to be weapons used by evil-disposed fairies against domestic animals—causing cattle disease, and more frequently taking the milk away from cows. The cure was homœopathic—*similia similibus curantur.* The wise woman of the district ordered the murrain stricken animals to be touched by the elf-shot, and the cow with the shrunk and milkless udder to be made to drink clear water out of a vessel at the bottom of which it could see the thrown-in elf-shot. If the cures failed, the failure was traced to want of faith in the agent. The superstition is not dead. A place might be named in an out-of-the-way mountainous district where a celt is kept carefully wrapped up in cloth that had never been used for any other purpose, and is wont to be employed whenever disease appears among the cattle. Belief in its virtue has been gradually declining, and it is now trusted only by those bordering on the threescore years and ten, one of whom recently pointed to its neglect as a proof of the depravity of the age!

6. FAIRY-STONES are fantastically shaped forms met with in alluvial clays. They are the claystone concretions of geology, and the fairy-art products of folk-lore. They are interesting from the point of view both of science and superstition. When subjected to scientific examination they suggest several questions of some importance in physical geology and chemical mineralogy, especially such as deal with mineral secretion, concretionary action, chemical aggregation, and the like. We are in the habit of limiting the term conglomerate to consolidated mineral masses consisting of pebbles of various kinds, generally rounded, and differing from the paste or matrix in which they are met with. The term concretion, again, usually indicates the outcome of a tendency among many mechanically mixed, but apparently

homogeneous substances to separate from one another and assume the form of nodules, distinct in themselves, though united in the mass. Thus regarded, concretionary action might be held equal to chemical aggregation. In this case the differentiation of the forms now under this notice—that is their comparative isolation from the mass in which they occur —depends on the presence of elements prone to molecular coalescence, which, while in one sense they withdraw from the mass, yet in doing so, carry with them parts of the mass, and thus do not often differ in colour from the mass itself. When the concretion consists mainly of lime they are named calcareous; of silica, siliceous; of clay, argillaceous or clay-stone concretions. The prevailing element gives the name to the series.

These fantastic forms have for a long time had the attention of geologists, and for a far longer time the superstitious wonder of the ignorant. Indeed, the attempts to account for their origin and shapes alone constitutes a most attractive chapter in the history of physical geology. The *Tophus ludus* of Linnæus was a concretion of this sort. David Ure of Rutherglen, 1793, first called the attention of British geologists to them. About sixty years ago Alexander Brogniart devoted an able essay to their formation and that of agates—*Sur les orbicules siliceux*. Twenty years later Ehrenberg published a paper on "The forms assumed by uncrystallized mineral substances called kidneys, Imatru-stones and claystones," all of which he included in the term "*Morpholites*." The Imatru stones had previously been described as an extinct family of mollusca. The late President Hitchcock, of Amherst, Massachusetts, gives them a prominent place in his great work on the Geology of Vermont. Up to Hitchcock's time little notice had been taken of them in Britain. Since then, however, reference is made to them in most geological handbooks. Some years ago the attention of the late Sir David Brewster was turned to them, and he contributed a paper, "On the fairy stones found in the Elwand water near Melrose," to the Proceedings of the Royal Society of Edinburgh (vol. v.). Sir David thought that they had been formed by the dropping of water containing the matter of which they are composed. I agree with Hitchcock on this point when he says, "Nothing can be more absurd than to impute their shapes to the mechanical action of water." No doubt they are produced chemically in clay made plastic by water and holding in solution the carbonate of lime by which, as clay-

stones, they are cemented. But this sheds no light on the great variety of shapes they assume, a variety which really underlies the ascription to them of supernatural origin—fairy art products! They occur as spheres, spheroids, oblate and prolate spheroids, flattened spheres with circular rings, flattened spheres with flattened rings, laminæ or plates, circular plates formed by concentric rings, shapes suggestive of the human figure, or of conventional impossible animals. Specimens of these and of many more are represented in my own collection. But what of their formation? It seems to me that the presence in plaster clay of such substances as silica, carbonate of lime, carbonate of magnesia, or iron, or manganese protoxides which have strong tendencies to aggregation—to coalescence, like coming to like—the shape of the position in which they have room to associate will determine that of the concretions themselves, and account for their fantastic forms. It would be easy enough for the credulous, who credited art experts among the fairies with power to make glass slippers which would fit only one human being in all the world, and gauzy dresses gleaming with gold or silver threads for favourite maidens, to credit "prentice hands" among them with the manufacture of these odd-shaped forms of worthless clay!

7. AMULET-STONES were stones arbitrarily held to possess medicinal virtues, and were worn about the person as a cure for, or a safeguard against, disease originating either in known or, specially, unknown causes. Pliny uses the word amulet in this sense,—*infantibus adalligari amuleti ratione prodest.* Thus too as to the medicinal virtue of amber, the famous chrysolectron of the ancients and still worn as an amulet,—*Hoc collo adalligatum, mederi febribus et morbis; triticum cum melle et rosaceo, aurium vitiis: et si cum melle Attico conteratur oculorum quoque obscuratibus* (*Hist. Nat. C.* XXXVII. *c.* 12). The process of association by which imaginary virtues are ascribed to certain shapes and certain colours of stone, waits for explanation. A bit of limestone found on the sea shore pierced by *Pholas* or *Saxicava*—boring mollusca—is often met with in country districts hung up in stables or byres as a charm. Why? A ring stone of amethyst is held to beguile the wearer from temptations to drunkenness. Why? One of green jasper is believed to ward off the discomforts of indigestion. Why? The range of the stone charm-myth is worldwide. Instances are named in most books of travel, and the superstition is not confined to savage-

dom. It is met with in the very heart of modern civilization, testifying how deep its roots are in human nature. Many are in the habit of relegating these popular beliefs to a remote past. But so recently as 1826 a book was published with the title "The secrets of nature, for the benefit of fishermen and farm servants," containing references to the remarkable virtues in stones with which these classes were held to be well acquainted, but which, I confess, I have not been able to identify. Two or three may be mentioned:—The *Maynetic Stone* (not magnetic iron ore) if reduced to a powder and thrown into the fire when the household are asleep the sleepers will awake in horror and rush out of the dwelling. The *Ophthalmic Stone* if worn in the breast wrapped in a laurel leaf will make the wearer invisible. The *Medor Stone*, black or green, if steeped in water will skin the hand, but when dried and carefully applied externally will cure the gout. The *Armaltus Stone* was an antidote against poison. The *Quirim Stone* found only in the Piet's (Magpie's) nest if slipped under the pillow of a person believed to be guilty of any atrocious acts, or great crime, will lead him to tell it aloud in his dreams. The book is said to have had a wide circulation among the classes for whom it was written.

In most of the foregoing notes an attempt is made to bring scientific facts alongside of folk-lore notions, and to find the explanation of the latter in the people's ignorance of the phenomena of Nature and the facts of science. Thus far the state of the question is clear, and unambiguous. But when we meet the superstitious notions actively and influentially current in an age noted above all others for its widespread scientific knowledge of nature, complex elements are introduced which make the explanation more difficult. A recent writer says—"In the present day amulets, though by no means extinct, have fallen into disrepute," and he ascribes this to the progress of science and of the philosophic spirit. I rather think that the roots of superstition which we are warranted to trace to the inborn seeking for a sign, the innate desire that ever hankers after the supernatural, lie in depths of man's nature which neither science nor philosophy can reach. That the spread of education and the increase of the knowledge of nature have done something to counteract the baneful influences of superstition no thinker can doubt, but neither can he doubt that wide and accurate scientific attainments are not necessarily the death of superstition. Moral elements

emerge which can only be morally dealt with, and if it can be shown that superstition can get foothold among men of modern culture, we will cease to wonder at its influence over multitudes of the population outside of that culture. Old wives' fables are not the property of old women alone. As we have already said, they were the very *élite* of society who, in the olden time, believed in the *Lapis philosophorum* and the *Elixir vitæ*. Yet so little was a place among the *élite* to be relied on as a guarantee for consistent action, men were found among them who did not scruple to put feeble women to the torture when charged with bewitching a neighbour's cow, or holding converse with Satan in the guise of a black cat.

There are other stones whose colour more than their shape has attracted popular attention and secured for them a place in wonderland. They are, however, for good reasons to be kept separate from those already looked at. In "Adamnan's Life of St. Columba, (A.D. 697)," there are some curious references to these, of much interest both to the mineralogist and the student of folk-lore, references, moreover, which connect them with the religious history of these early times. Adamnan mentions a blue stone, a red stone, a black stone, and a white stone, severally noted for remarkable virtues. A full account of these would form a curious chapter in the history of this department. We refer to the last named only, the white stone. "When in the country of the Picts, St. Columba," says Adamnan, "took a white stone from the river (Ness?) and blessed it for the working of certain cures; and that stone, contrary to nature, floated like an apple when placed in the water. This divine miracle was wrought in the presence of King Brude and his household." In another place we are told that the saint having left the palace of the king, "proceeded to the river Ness; from this stream he took a white pebble and showing it to the company said to them, 'Behold this white pebble by which God will effect the cure of many diseases among the heathen nation.'" We learn afterwards that when the Druid Briachan, who had fallen under the displeasure of the saint, became sick, the king sent Columba to cure him, and this was done by Briachan drinking the water in which the stone was swimming. I attach no weight to the miracle-element introduced here. It forms a considerable part in Adamnan's biography of the saint. But as our present task is historical and illustrative rather than

apologetic we need only say that every so-called miracle recorded by the biographer can be explained apart altogether from supernatural influences. What we wish at present is to concentrate attention on the colour—white—because it not only suggests a form of stone folk-lore not yet referred to, but also because it sheds some light on a well known passage of Holy Scripture.

In many widely separated districts the white stone is associated with sepulture. We have met with it in North Wales churchyards, in burial-places of Lowland Scotland, and in lonely spots of the Outer Hebrides. Sometimes the grave is surrounded by a single or a double row of snow-white quartz pebbles; often a few are placed at the head and foot of the grave, and occasionally a single stone lies at the head only. Most of the stones are rounded and smooth, thus the rains keep their tops free from lichens, and the pebbles ever suggest

"The white of purity, surpassing snow,"

and, by many, this kind of memorial is valued more than that of flowers because

"Full soon the canker death eats up the plant."

In one instance that came under my notice the white stones were deposited *in* the grave not *on* it. When one of several "half-length" stone cists was laid bare in a sandhill it contained four pebbles of quartz, whose position seemed to indicate that one had been placed at the head, another at the feet, and one under each shoulder. Ure (1793), describing a section made through a *tumulus*, says that twenty-five urns of coarse clay, rudely formed, full of earth and human bones, were met with. "They were placed with their mouths undermost upon flat stones, and a piece of white quartz was found in the centre of each. These pebbles were larger or smaller, in proportion to the dimensions of the several urns to which they belonged." Some time ago Sir Arthur Mitchell read a suggestive paper before the Society of Antiquaries of Scotland,—"On the occurrence of white quartz pebbles in chambers and cists." On visiting an old burial-ground at Kilmalew, near Inverary, he found that eight of the graves had quartz pebbles on them. All these had been recently opened. Thus the old practice had not died out. Sir Arthur asks, "Is the modern practice a survival of a Stone Age custom, knowingly or unknowingly?

Was there aught of symbolism underlying it? Or is its presence to be traced to the pleasure which the survivors have in decorating the graves of the beloved dead?" At the close of his paper, Sir Arthur refers to Revelation II., 17. The reference sets the subject in the heart of symbolism. Here I have no doubt, as in many other instances, Christianity appropriates a heathen usage, and makes it a channel through which a great Christian truth finds expression. Ovid traces the usage back to times long anterior to his own:—

> Mos erat antiquis neveis atrisque lapillis
> His damnare reos, illis absolvere culpa.

The following (16th century) rendering of these lines is truer than elegant:—

> "Sentence was given in ancient times
> By stones, or black or white,
> The first convicted men of crimes,
> The second absolved them quite."

"I will give him a white stone, and in the stone a new name written, which no man knoweth, saving he that receiveth it," (Rev. II., 17). 'The ancients gave a white stone as a token of victory and freedom; so will I give myself to him that overcometh, I in him and he in me; I will give him to know what can be known with absolute certainty by himself alone.' And still deeper and grander truths come to the front as we dwell on the promise, but to do more than hint at them, and that only with reserve, would be to leave the subject proper of this paper.

To the student of stone folk-lore the foregoing pages can be little more than is an imperfect plotting of a small portion of a very wide area to the surveying engineer. Were we to take in the whole field we would find corners of superstition and lines of credulity suggestive of almost numberless illustrative instances. The history of chemistry, ethnology, archæology proper, and even biblical interpretation and exposition is crowded with them. Moreover, the historical aspect raises one of the most important and interesting questions connected with the whole folk-lore subject, namely, the question of the value of the recent "theory and method of survivals."

The Right Hon. Lord HALSBURY, Lord High Chancellor (who was cheered on rising), said: Sir Gabriel, ladies and gentlemen.—The motion I have to move is one about which I have no difficulty, for I do not suppose that there is any one present who is not prepared to give their best thanks to Professor Duns for the Annual Address that has been delivered, and our thanks are also due, in a very high degree, to the gentleman who has been good enough to read it. (Applause.) I must say the unhesitating manner in which he read those awfully long words would have startled a great many readers. I cannot help being reminded of a story that I think was told by Lord Bacon, of a certain great occasion, when the Greeks assembled together. A foreign ambassador (for they had such things in those days) was invited in order that he might hear the wise observations to be made and carry them back to his prince. After a great number of wise men had spoken, there was one gentleman who said nothing, and the ambassador looked on with curiosity and impatience to know what would come from him, and when he appealed to him the man said "go back to your rulers and tell them there was one Greek who knew how to hold his tongue." I am afraid I have forfeited that merit already—and yet, I know not what to say, because with reference to the subject of this Address—Stone Folk Lore—all it means and all its history—I do not know anything. Perhaps that is not a reason, in these days, why I should not talk a great deal about it.

There is one passage that caught my eye upon which, inasmuch as criticism is the very essence of this Society (and we do not allow anything to pass without criticising it if we have something to say), I will say a few words. It is, I believe, the great virtue of our meetings that everybody is obliged to explain what he means—if he *can*. Now I find a little difficulty in following the argument by which the very learned paper is introduced. On his first page I find the writer says "the distinction between the true and the false is not to be sought for in defective method, but in the mixed minor premise" and he goes on to say, "Syntheses warranted only by facts are vitiated by being neither factful nor fanciful, but a blending of both." I am not quite certain that I understand that. But this I will say, that I think there is a blending of two totally different theories

in the argument itself so far as I read it.* We have been in the habit, I think, of undervaluing the older method. The Aristotelian logical philosophy was perhaps, in its earlier days, made a great deal more of than it deserved, because it was misappropriated; but in these later days I am not quite certain that we should not learn a good deal from it, and it arises, I think, from the fact that confusion is supposed to exist between the modes in which we investigate truth. Modern science, the exact microscopic, intense examination of nature and natural phenomena lies in the region of examination of facts and not in reasoning at all; but the power of reasoning disciplines the mind which is subjected to the art of reasoning and that is invaluable, I believe, because when we have ascertained our facts we need not confuse our minor premise at all. We may find out what the facts are first, and then construct our premises and from them we shall learn, by a later application of philosophy, how to deduce further conclusions which may, perhaps, be inherent in them, but which will not be seen until we have applied the logical touch-stone to see where the truth is; and for that reason I confess I regard the theory on which this investigation starts with a little doubt.

Sir William Hamilton himself, I think, has pointed out wherein the former mode of investigation differs from that of later times, and when we apply the logical process to that which alone is the proper object, the form of thought and not the investigation of facts, I believe we shall then be able to learn something from it and attribute to it its true value. But with reference to the later form of investigation—the mode in which we attack nature on every side and examine it and pull it to pieces, I think we may learn something from Lord Bacon, who tells† us that we should exorcise, if we can, the idols of the tribe, the den, the market, and the theatre, and if we do that (*i.e.*, strive to reduce the human mind to a clear mirror not overlaid with these idle superstitions), we shall then, perhaps, be in a better position to discuss such a paper as this, when we quite understand all that it means, which some of us (I speak for myself) do not at present;

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* See note to first page of the Address.—Ed.

† *Novum Organon*, I., § xxxix.—Ed.

but nevertheless I think we shall recognize the fact that this is a very interesting Address and no doubt a great deal may be learnt hereafter from it. I observe with great satisfaction that the author of it indicates that it is only a sketch. Let us hope that hereafter he will fill it up and make a complete picture. In the meantime I have much pleasure in moving "that the hearty thanks of this meeting be given to Professor Duns for his (the Annual) Address and to the reader for the part he has been good enough to take, and also to the authors of the papers read during the past session." (Applause.)

Sir JOSEPH FAYRER, M.D., K.C.S.I., F.R.S.—Mr. President, my lord, ladies and gentlemen; I have very great pleasure in seconding the resolution that has just been so eloquently proposed by the noble lord who has just sat down. I wish he had not criticised the Address so fully—in short that he would have left me something to say. It would not be quite fair I think, though, to attempt to criticise an essay of this kind summarily, having only had the opportunity of hearing it, and you know how transient the impression is that is made by simply hearing a paper read. Such an Address as this requires to be studied before one attempts to criticise, and I look on it as one of great interest. I think it quite comes within the scope of the class of subjects contemplated by this Institute. It is philosophic, archæological and anthropological, and is an excellent Address. In regard to the myths, traditions and superstitions that have been related to us, I may say that I have spent the best part of my life in a country with hundreds of millions of people of ancient civilisation whose ancestors were mathematicians and philosophers when our own people were painted savages—people who believe to this moment that such a stone as one of those you have heard described is capable, if applied to the bite of the most deadly snake, of preserving life. In this, as in other myths, you may have some substratum of the elements of truth—not from the point of view which they take, but from the point of view which those who have read papers before the Victoria Institute and have followed the line of thought and mental development, endorsed by this Institute will understand. This stone is simply an absorbent—a piece of charred bone, and it has the property of absorbing by capillary attraction, never sufficiently in bad cases, but in more slight ones, it has given rise to the idea that it is capable of saving life in all cases. That idea is rapidly passing away and no doubt,

like others, that you have heard the history of to-day, will cease to exist. I have much pleasure in seconding the vote of thanks.

The resolution was then carried.

Professor E. HULL, LL.D., F.R.S.—My lord, ladies and gentlemen. There is one resolution in which I am sure we shall all concur and which I have the honour and pleasure of moving viz.: that the hearty thanks of the meeting be presented to our President, Sir Geo. Gabriel Stokes (applause). It is a matter of great importance to an Institute such as this to have one at its head who stands amongst the first of the philosophical investigators of our time. No one is second to Sir G. Stokes in mathematical and philosophical investigation, and it is matter for great congratulation and gratification to ourselves that we secured his services as President of the Institute. He is not one of those Presidents who accepts the honour without the responsibility and work, and it is really a matter which we are bound to consider as a very great kindness on his part that, although his residence is at the University of Cambridge, he is amongst us so very frequently at our ordinary meetings and almost always at our Annual gatherings. (Applause.)

Mr. J. OTONBA PAYNE (Registrar of the Supreme Court of Lagos).—My lord, ladies and gentlemen. I beg to second the vote of thanks to the President, Sir George Gabriel Stokes, the greatest physical scientist in England, whose name is known far and wide.

The Resolution was duly carried.

The PRESIDENT.—I am much obliged to the proposer and seconder of this Resolution for the kindly and I may say too flattering terms in which they have spoken of myself. I am afraid that I cannot claim to have done very much for this Institute. I left this morning, my own University of Cambridge to be present at this meeting, but I am afraid I have not undertaken the work that is usually undertaken by the President of a Society like this, viz.: that of delivering the Annual Address. I am glad to think that there are others who are so well able to take my place in this respect.

The meeting then adjourned.