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1927

701ST ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, S.W.1, ON MONDAY, MAY 16TH, 1927,

AT 4.30 P.M.

DR. JAMES W. THIRTLE, M.R.A.S., IN THE CHAIR.

The Minutes of the previous Meeting were read, confirmed, and signed, and the HON. SECRETARY announced the election of the following:— The Rev. H. C. Morton, Ph.D., from Associate to Member; Godfrey Hewett, Esq., Commander Paul Hewett, R.N. (ret.), C.B.E., Mrs. Robert Duncan, and Alan Stuart, Esq., M.Sc., F.G.S., as Associates.

The CHAIRMAN explained that Dr. Reuben Saillens had been ill, and therefore unable to prepare his paper, and that Lieut.-Colonel F. Molony, O.B.E., had kindly prepared a paper on "A Restatement of the Argument for Theism from Design," and this he now called upon him to read.

A RESTATEMENT OF THE ARGUMENT FOR THEISM FROM DESIGN.

By LIEUT.-COLONEL F. MOLONY, O.B.E.

WHEN a man in digging a post-hole comes on a large stone, he works round it and levers it out: in military parlance, he "turns its flank."

The first time Wellington put his army in position to try and stop Napoleon's best marshal, Masséna, was at Bussaco, in 1810. But after a first repulse Masséna turned the flank of the position, and Wellington fell back, abandoning all central Portugal to the French.

The second time Wellington ranged his troops in line of battle in open country to stop Masséna was at Fuentes d'Onoro, in 1811. The French marshal turned his flank again, but this time Wellington made no long retirement, but changed front with part of his line, and thereby thwarted his opponent.

The gist of the following paper is, that we Theists will be well advised to "change front" in stating the old argument from design.

It used almost invariably to be stated in terms of living organisms or parts of the body. Apologists have dilated on the wonderful mechanism of the human eye. Dr. Row writes of the marvellous adaptation of the throat to produce sounds, the air to convey them, and the ear to receive them: and I dare say we shall most of us agree that the arguments deduced from these facts are perfectly sound and valid.

But evolutionists claim to have proved that all living organisms are endowed with the wonderful power of adapting themselves to their environment. Also of producing varieties, which, by natural selection and other laws, tend to make any improvement in an organism permanent. They claim that they can trace the development of the eye from the mere sensitiveness of parts of the skin to light, that there is thus no evidence that it was ever designed as a whole, and that the Theistic argument is based on nothing.

Thus our flank has been practically turned, and the question we should discuss is, shall we abandon the whole position, or "change front"? I propose to set forth an argument for the latter course.

A LITTLE-HEARD-OF ARGUMENT.

But I must first draw attention to the fact that most Theistic apologists seem to think we ought to adopt the former course, for we scarcely ever hear the argument from design stated now. Their idea seems to be that it offers too many points of attack: that it is, in fact, too "salient." Now we know that in the Great War the salient of Ypres was only held at a terrible sacrifice of life. Theistic writers are apparently afraid, that, if they urge the argument from design, it will provoke counter arguments, and many of our young people will lose their faith over the matter. This is likely to be so if we keep arguing from living organisms, because our opponents can throw so much dust into the eyes of those who are trying to choose whom to believe. Why not, therefore, transfer the argument to inanimate things? Then all counter arguments based on evolution become irrelevant.

I propose to confine my remarks to one chemical compound out of thousands: namely, water, teeming certainly with living

organisms, but itself without life. In connection with its nature we shall not so much as hear the word "evolution." I propose to trace the natural history and properties of water, and to show how necessary and useful it is to any living creature we can conceive of, but especially to man as he now stands upon the earth. We shall next see how water has worked for the intellectual and moral development of man, and finally deal with certain possible objections.

Water first comes to us in the form of rain or snow, which falls in minute particles that hurt nothing. It is so distributed over almost all the surface of the earth, sufficient areas being left rainless to remind us of the supreme value of water, and for another purpose which I shall touch upon later. The water which is not used by men, animals, or plants, cuts valleys, and by very slow but sure processes shapes the hills. It then runs off in streams which turn many of our mills; these streams unite to form rivers, often very valuable for inland navigation. Geographers point to Africa as a continent whose rivers are peculiarly unsuitable for navigation; but, if you look at a map on which the navigable parts of the rivers are marked, you will be struck by the fact that, even in Africa, there are enormous stretches of navigable water. Most of the harbours of the world are at the mouths of rivers. Thus the water reaches the salt sea, the world's great purifier and highway, of which more hereafter. From the sea the water is drawn up to form clouds; winds are provided to carry these once more over the earth. Acted on by complicated laws, the clouds condense and the water returns to us again as rain, thus completing a cycle from which we benefit at every step.

But just now I want to deal with two stages only. It is very important that our water should be pure. When we have to effect the purification of water we resort to distillation. But we have seen that Nature is continually applying this process on a vast scale. It is very remarkable how quickly light and air purify the water in running streams. A large town may turn all its sewage into a small river, but a few miles down the water is usable again, though at some risk, as we must allow.

At 32° Fahr. water freezes into ice and snow, and fortunate is it for man that it so does. To ride or drive against cold rain is much more disagreeable than against falling snow, while to walk out when it is snowing cannot be reckoned a hardship at all. Those who have to sleep out in the snow, if sufficiently fed and

clothed, seldom take any harm from the experience. In fact, if water did not freeze till zero Fahrenheit was reached, large areas of the world's surface in Canada, North Europe, and Siberia would become uninhabitable.

But there is a very remarkable point connected with the freezing of water, to which I wish to direct special attention by an extract from Roscoe's *Chemistry*, a statement which I have only altered by turning degrees centigrade into degrees Fahrenheit.

"When water is heated from 32° to 40° it contracts, thus forming a striking exception to the general law that bodies expand when heated and contract when cooling. On cooling from 40° to 32°, it expands again; above 40°, however, it follows this ordinary law, expanding when heated and contracting when cooled. Hence we conclude that water above or below 40° is lighter than water at 40°. This cooling goes on till the temperature of the top layer of water sinks to 32°, after which a crust of ice is formed; but if the mass of the water is sufficiently large, the temperature of the water at the bottom is never reduced below 40°. Had water become heavier as it cooled down to the freezing-point, a continual circulation would be kept up until the mass was cooled to 32°, when solidification of the whole would ensue. Thus our lakes and rivers would be converted into solid masses of ice."

This extract from Roscoe should be of peculiar interest to fishermen; as, if it were not for this exception to general law, all the fish in our rivers would, of course, be killed every winter.

Now, even if it be possible to believe that the general law about cooling bodies contracting came into existence by blind chance, who can believe that this marvellous variation of the law with reference to water cooled below 40° was not arranged by a Law-giver who saw that an exception was here necessary?

ORDINARY USES OF WATER.

The uses of water for the growth of plants, and for drinking, cooking, and washing, are so well known to all that I do not propose to enlarge upon them. As a Royal Engineer, I had a good deal to do with the supply of water, and was impressed by the ease with which it can be conveyed about and distributed by pumps and pipes.

Almost all our early factories were situated where water-power was available to turn the machinery. This is better known to those who live in the north of England and Scotland

than to those who live near London. Water-power is now being very much used in France and Spain for the generation of electricity. Lades (or what would in Devonshire be called leats) are run upon the mountain side for miles. The water is then taken into enormous pipes, often 4 feet or 5 feet in diameter, straight down the mountain side, to large turbines turning enormous dynamos, the electricity they generate being taken in high-power lines straight across country to wheresoever it may be wanted scores of miles away. Water is also used in hydraulic engineering.

The English made many canals to develop inland communication by use of water, but did not make them big enough; the French did, and still put their canals to much use. I saw one being prepared for electric traction; when that is ready, one man will be able to control a large barge.

A close study of history shows that water communication was enormously valuable in the past and greatly aided the progress of civilization. This comes out most clearly in the study of military history. Commanders who knew how to use the advantages of water transport were almost always successful: and, of course, this is only an index of its utility for general purposes. We are so used at present to railway and motor transport, that it is difficult to realize how greatly civilization would have been retarded if there had been no water transport in the past.

In Scotland one of the first centres of civilization seems to have been the shores of Loch Linnhe—surely because of the numerous inlets round that sheltered arm of the sea.

Before proceeding to the second part of my argument, let me remark that we make a great mistake if we suppose that Almighty God only desires to promote what we may call the softer virtues in man—love, mercy, pity, and the like. It is true that Christ gave most of His time to inculcating these, but may not this have been because the value of the intellectual and the harder moral virtues was already well understood in His day?

USES OF WATER FOR DEVELOPING THE INTELLECT OF MAN.

There can be no doubt that water and the seas have done much to stimulate man's mind and imagination, and thus to foster his intellectual development. For instance, Napier, in writing about warfare on land, frequently uses images and metaphors

taken from water and the sea. A case more familiar to all of us is the Bible itself, which is full of beautiful and telling word-pictures connected with water. It can, moreover, be shown that water has done much more than stimulate man's intellect; it has practically compelled him to use and develop his mental powers, in spite of that unaccountable laziness which overmasters most of us whenever we are called upon to think.

In countries like South Africa, one is much impressed by the way a good water-supply changes the very face of Nature. In some parts there are gushing springs, but, in general, artificial arrangements have had to be made to get the water to the surface and use it for irrigation, and where that is successfully done, almost anything will grow. We have all heard of the enormous areas artificially irrigated in the Soudan, India, and Australia. The Afghans are said to be extremely clever at irrigation. Now, of course, all this has meant, not only work, but thought. And to that men have had to add calculation, planning, co-operation, and organization—all greatly stimulated and aided by the obvious fact that the water obeys well-known laws. Or, rather, some of those laws are well known, but the engineer who needs to calculate how much water a certain pipe will supply under given conditions as to gradient, pressure, etc., will also need a good knowledge of mathematics.

The usefulness of the sea, and especially the tides, in making men think and calculate, is even more evident than the uses of water, which we have already noticed. One can only learn the art of sailing by continually thinking; there are no mysteries about it, and after an event has happened one can usually see clearly enough *why* it occurred. Foresight always pays.

All sailors have to study the tides; those who make coastwise voyages are thinking about them continually. At a very early stage of civilization men must have realized that the times of high and low water could be correctly forecasted. Then, when they came to construct banks as a protection to their cultivated lands against the sea, and to make jetties and piers, they noticed that the tides at full moon and new moon rise higher and fall lower than the average tides. Thus they were led on to make more and more careful calculations; and there are still some points about tides which are not fully understood.

Sailors who navigate waters out of sight of land are confronted by three questions to which some answer must be found: Where am I? What course ought I to steer? When may I hope to

reach my destination? All these questions call for calculation. The ancients steered as best they could by sun and stars. Then the mariner's compass was invented, and men began to record soundings on rough charts. Then they found the latitude by taking altitudes of the sun at noon, and, finally, the longitude by methods which are too complex for most men to tackle, for they involve the use of elaborate tables, logarithms, etc.

The necessities of navigation have probably done more to promote the study of mathematics than all the other uses of mathematics combined. There seems every reason to hold that the Creator of man's mind aimed to bring about this study, and designed the sea for this, among other, purposes.

INFLUENCE OF THE SEA ON THE MORAL DEVELOPMENT OF MAN.

But the sea fulfils a still higher purpose, and that is in promoting the development of moral qualities that are most necessary to man. We are accustomed to say that the conversation of sailors is "breezy," but what do we mean by that? Surely that their talk savours of the open air, that it is free from the shams and minor hypocrisies which disgrace so much of our conversation. When a sailor is asked a question, he answers it straight; he does not pause to consider how he can best display his own acumen in framing the answer. He is not over-careful to "save face," either yours or his own. He would as soon exaggerate in describing the weather as in naming a sum of money. Currents, winds, and waves will listen to no excuses, so the sailor soon has done with verbal evasions. Life at sea not only inculcates exact truthfulness, but also fortitude, promptness, and self-sacrifice.

Watch the sailor in the bows when a sailing ship is put from the port to the starboard tack. When the helm is put down he looses the starboard jib-sheet. But he does not immediately tauten the port one; he waits till the wind is coming a trifle from the starboard side, and then belays the port jib-sheet as tight as he can get it. If he acts too quick, the ship may fail to come round, and be on the rocks before she can gather way for another try; if he acts too slow, the jib will be too loose all that tack. The sea demands that things be done *just right*. A good illustration to this part of the subject is Robert Louis Stevenson's poem called "Christmas at Sea."

A full-rigged ship at dawn finds herself "embayed" with a

strong gale blowing dead on shore. All Christmas day she tacks and tacks under topsails alone, but can only just avoid going ashore. Near sunset the captain orders the top-gallant sails to be shaken out. The mate remarks that the ship will not stand it; the captain silences him by remarking that they must run some risk. So the extra sails are set; and, being new, they stand the strain. The ship is staunch; and, with the additional canvas, begins to sail faster. She makes less leeway, and, at nightfall, gets out of the dangerous bay.

The captain is not represented as a harsh task-master, but as a man of good judgment and patient temper. The point is, that Stevenson plainly implies that the actual conditions of sea life were disciplining the young man who is supposed to tell the story in a way his own parents had failed to do.

Allusion must also be made to the many true tales of heroism and self-sacrifice connected with water. We need only to mention the traditions of the sea, such as "women and children first," "captain last to leave a sinking ship," etc. The story of Grace Darling may be mentioned as typical of individual heroism; the soldiers and crew of the *Birkenhead* of corporate heroism. The point might receive an infinite number of practical illustrations. What heroic tales the word "Lifeboat" conjures up!

Greece, Italy, Spain, and France are all peninsulas, and they have had a great deal of coasting and other sea-borne trade. They have successively attained to predominance in the civilized world, and we are all agreed that Great Britain owes almost everything to the sea.

Here we must point out that it would be a mistake to think that the seas have of themselves provoked strife among the nations, except in a few cases over fishing rights. It is acknowledged that there is room for all upon the broad oceans. Sea battles have been always fought with a view to gaining advantages on the lands to which the water gives access. The necessities of navigation have promoted co-operation among the nations, and now they each provide lighthouses and buoys all along their coasts for the benefit of all.

THE BEAUTY OF WATER.

A strong argument for Divine design has been drawn from the beauty of Nature. The sceptic seeks to "turn the flank" of this position by pointing out that beauty is useful to living creatures; the beautiful bird or butterfly secures a better mate.

But if our argument be drawn from inanimate water, this counter-argument fails. And how very beautiful water is in all its many forms ! Who is not struck by the beauty of hoar frost on bushes, or snow on distant mountains, especially when the sun is low ?

If you visit a picture gallery, you will find that seventy to eighty per cent. of the landscapes have some water in them. There are many reasons for this. As the beholder knows that water is nearly flat, he gets from the windings of a stream, or outline of a lake, a fair idea of relative distances ; thus, water aids the perspective of every view.

As the forms of ground tend to be horizontal, the artist is often in need of vertical lines to contrast with his horizontal ones. Water helps in this, because it reflects vertical lines very clearly, and thus doubles their length. Artists seek for repetitions of forms and colours ; and, when painting, prefer to depict objects with soft outlines. Thus, reflections in water are always helpful, and often extremely beautiful. And, doubtless, many other sound reasons could be alleged in explanation of the fact that landscape painters love water. How beautiful are clouds, rainbows, waterfalls, and breaking waves. The beauty of water is incontestable.

In this connection you will probably expect me to say something about the beauties of a seashore pool, with its shells, sea-weeds and sea-anemones. But I purposely refrain from enlarging on these marked wonders of the sea, because they are mostly connected with life, and the nature of my argument restricts me to things without life.

Thus we see that water in its many forms is not only infinitely useful to man, but has also greatly promoted the development of his mind and of several necessary moral qualities. Have we not every reason to regard this as evidence of design on the part of the great Creator ? Is it conceivable that it all came about by pure chance ?

A PLAUSIBLE OBJECTION.

But we must notice an objection which will assuredly occur to the minds of many. Water, in the form of floods and storms at sea, has taken a terrible toll of human life. Are we to regard this also as being designed by God ? It seems clear that the sea could not have exerted the influence it has on man's mental and moral qualities if man had not greatly feared the penalties which it sometimes exacts.

Think of all the thought and trouble which goes to the making of a nautical almanack. Would that trouble ever have been taken if navigation were not a matter of life and death? The sea is only apparently capricious. A British fleet was anchored off Pondicherry in 1760, to assist in the siege of that French fortress. A storm came on, with the wind at first blowing off shore. The admiral foresaw that the wind would change, so he ran out to sea, but the other ships either did not see his signals, or preferred what seemed a safe anchorage, and many were lost.

It is almost true to say that life is never lost at sea without at least an error of judgment somewhere. The dangers of the deep have so promoted inventions that life is seldom lost now, except from collisions during fogs. Ships are in too much of a hurry. Of course, it is difficult for captains to withstand the general pressure put upon them to save time, but moral stamina of that sort is one of the very qualities which the sea was surely designed to promote.

Similarly, floods in rivers are not altogether capricious. Man knows that he ought to be prepared for a flood rising a few feet higher than the highest recorded. Such precautions are usually possible, and it is at our peril that we neglect them. This also goes to teach foresight, diligence and combination in self-defence.

But in regard to the loss of life, we need to bear in mind that we have no proof that, in the eyes of God, sudden death is such a terrible calamity as it is in our eyes. If there were no sudden death, men would live carelessly, and immorality would be promoted. The loss of life at sea has never been so heavy as to make any difference to the progress of civilization. If it could be proved that there are many sincere and effective death-bed repentances, then sudden death would certainly be a religious calamity; but the sceptic has no right to urge this argument against the Theist, because the sceptic does not believe in effective repentances at all!

To the materialist, the matter should simply be a balancing of the loss to the community, when a young man who might render effective services meets a sudden death, against the gain when an elderly man does so, and thus relieves the community of maintaining him in a useless old age. These probably balance, but the moral gain to mankind, by men having an inducement so to live as to be prepared for sudden death, is surely undeniable.

Thus we see that the loss of life from storms at sea and floods cannot be regarded as a serious argument against my contention

that we have many reasons to regard water in all its forms as having been designed by our loving Heavenly Father for the good of mankind.

CONCLUSION.

The oldest surviving poem in any modern language is said to be "The Song of Mother Sun," by St. Francis of Assisi. Matthew Arnold translates one verse thus: "Praised be my Lord for our sister water, who is very serviceable unto us and humble and precious and clean." Professor F. C. Burkitt translates it thus:—

"Be praised my Lord for sister water, sure
None is so useful, lowly, chaste and pure."

But water is only one out of many thousand chemical combinations. Could more of these be examined, the argument for Divine design to be drawn from inanimate Nature would be seen to be overwhelmingly strong.

DISCUSSION.

The CHAIRMAN: We shall all agree, I think, that the paper to which we have listened is characterized by versatility of treatment and a force of argument that is peculiarly impressive. Colonel Molony has given us no mere summary of positions maintained as commonplaces in text-books on Natural Theology. Quite clearly, he shows us that he is at once familiar with the arguments of schools and the objections of controversialists; and at the same time he furnishes proof of a personal grasp of the subject from many points of view, and, moreover, that he has gone to his thesis with a determination to safeguard essential positions by passing by, for the present at any rate, issues that are secondary to that which has specially engaged his attention.

The Colonel has acted wisely in demonstrating the argument from design as affording proof of the divine wisdom rather than as supplying an answer to the many questions that grow out of teleology. Given such proof of the divine wisdom, we may go further, and in proportion that we learn lessons of adoration, we shall doubtless in our hearts find in design more than, at the outset, critical disputation is prepared to defend. But in any case—at the very least—we learn from design that God is wise; and some of us may do more: we may

gather therefrom assurance of the unity of the Providential order. And all the while, as we advance in appreciation of the design that lies at back of things, so shall we grow in the knowledge of Him from whose hands all things have come.

Needless to say, we must ever be prepared for problems ; but as we grasp these and their solutions we shall surmount the objections of unbelievers, and find our footing made secure in regard to the Infinite God and His ways. For myself, I thank the Colonel very cordially for setting forth a vital argument on grounds which, though somewhat familiar, are essentially practical in their appeal to the common mind. The fact that, all through, his eyes were open to the objections urged against his argument adds considerably to the value of a clear and well-ordered restatement of a great theme.

In conclusion, the Chairman moved that the thanks of the meeting be given to the Lecturer ; and this having been done, discussion proceeded.

Dr. HAROLD MORTON joined in thanks to the Lecturer, and admired the astute way in which, Evolution, as he thought, having "turned our flank," he had transferred the fight unto an entirely different field—a field in which the word "evolution" had no application except in a figurative sense.

Personally, he did not believe that Evolution need be accepted. It is a pure hypothesis : but, even upon the evolutionary basis he could not perceive the difficulty of the argument from adaptation or design. It seemed to him that the argument remains in a twofold form. For example, the greatest name in the evolutionary field is that of Bateson. Bateson believed that there was much ground for supposing fresh forms to arise by *the dropping* of characteristics ; and thus to conceive of the earliest forms of life as containing within themselves the whole complexity of the world. If this does not involve design in those earliest forms, design absolutely baffling in its immense complexity, language has little meaning.

Generally, design is taken to involve the idea of foresight, and the argument from design amounts just to this : that we cannot conceive of the adaptation in question without assuming the foresight of Intelligence behind it. On this basis Evolution leaves us the argument from design in the Organic Universe as the whole. But surely

Evolution leaves us the argument from design in the individual object also. The view expressed by the lecturer is very old, Aristotle having expressed just that view concerning Empedocles and his evolutionary theory, and the view taken is that the interplay between the resident forces of the organism and the forces of its environment must be a blind movement, since the products of this interplay far more often perish than survive, and for the greater part these forces work to no end at all. Yet this does not seem to bar out the idea of a foreseeing Intelligence behind : since Nature, or God, everywhere is profuse. For example, ninety-nine out of every hundred seeds perish. The wonderful effectiveness of the varied objects of organic nature to accomplish their purpose seems to remain just as much if Evolution be accepted as if Evolution be rejected. The conception of Evolution makes no difference to the facts of the earth, and it is in those facts that we find design : that is to say, we find ourselves, of sheer necessity, conceiving the adaptations of Nature to have been foreseen and intended.

Mr. W. E. LESLIE said : Colonel Molony is to be congratulated upon his attempt to turn his opponents' flank. The shorter arguments were, the greater conviction would they carry. But in this case the manœuvre had failed ; for the " evolutionary " position, in the widest sense of that term, was much stronger in regard to the inorganic than to the organic realm. This was the case whether we looked at the formation of worlds from nebulae, or the formation of elements by the modification of systems of electrons.

The form of argument presented by the author, enjoyed considerable popularity at one time, being applied to the composition of the atmosphere, the distribution of land and water upon the surface of the globe, the temperature of the earth's surface, etc. One of its chief drawbacks was the difficulty of determining the boundary between legitimate inference and fanciful speculation.

The argument from design had not, however, been abandoned : its form was now changed. It had taken a broader outlook, and dealt with the universe as an intelligible whole, which must be interpreted in terms of values for life and thought.

Mr. THEODORE ROBERTS said : Colonel Molony has taken a fresh instance of the argument from design for which we are grateful. It was Lord Balfour, speaking as President of the British Association

some years ago, who made use of the stronger argument, referred to by Mr. Leslie, from design in the capacity of the brain of man to conceive the Evolution theory. The argument from design appears to be regarded by the Apostle Paul in his Epistle to the Romans (i, 20, 21) as valid, yet disregarded by men, which is well illustrated by the reply of Charles Darwin to a correspondent who inquired whether his wonderful theory of Evolution did not prove the existence of a Creator, for his answer was that he had never been able to make up his mind whether the argument from design was valid, but of one thing he was certain, that, if there were a Creator, He never interfered with His creation! As St. Paul wrote: "They do not like to retain God in their knowledge" (Rom. i, 28).

No doubt each of us would best appreciate the argument from design if drawn from the subject with which he was best acquainted; and as a Bible student of over forty years, I myself feel that the marvellous structure and teaching of Scripture prove it to have a divine Author, and I would plead with those who deny the argument to give the Bible an unbiased reading.

The Rev. J. J. B. COLES thanked the Lecturer for a very interesting paper. In vol. xlii of the *Journal of the Transactions of the Victoria Institute* (1910) there will be found the report of a valuable paper, by Prof. E. Hull, F.R.S., on the abnormal conditions of water, as evidence of design in Nature. In addition to the argument relating to maximum density and freezing-point, Prof. Hull dwells on the incompressibility of water.

Mr. AVARY H. FORBES said: In his remarks on the influence of the sea on the moral development of man, the Colonel did not mention anything about the moral mentality produced by sea-sickness! It might, at first sight, be difficult to see any connection between the two things; but at times there certainly is. I know a skipper who, though brought up from his youth to the craft of fishing, is the worst sailor I ever met, or heard of. His wife told me—and he admitted it—that when he got up in the morning and the weather was rough, he used to be sick in his bedroom in anticipation! And he never really conquered the infirmity; but he stuck bravely to his calling to the last, and he is now retired after a long and honourable career. He was also a "fisher of men," and in every port he visited, he would

get up—or join in—an open-air service. As an evangelist, he was, for many years, well known along the whole east coast of England. Which of us would have had the courage to stick to our guns against such an enemy as inveterate sea-sickness?

The Pondicherry incident (p. 245) is paralleled by Nelson at Trafalgar. He foresaw a storm, and when mortally wounded, and brought below, he ordered his captains to anchor. The captains thought they knew better, and did not anchor. The storm burst, and all the prizes except four were lost.

As to the part played in landscape scenery by water, there is an eloquent passage on this subject in one of J. B. Gough's lectures: "Our Father brews a drink for His own children in lovely places—down in yon grassy dell, where the red deer wanders and the child loves to play; down there where the brooks murmur, and the rills give out their music; far away on the mountain top; and again, on the wide wild sea. There brews He beautiful water; and beautiful it always is—dancing in the hail-storm, leaping and foaming in the cataract, or sparkling in the fountain. Beautiful water! See how it weaves a golden gauze for the setting sun, and a silvery tissue for the midnight moon! Beautiful water! rolling up the valley in the cloud-mists, or weaving the gorgeous rainbow—its warp, the rain-drop of the earth; its woof, heaven's bright sunbeam."

In this connection it is interesting to note that Huxley confessed that he could not account for our admiration of scenery on any principles of Evolution.

WRITTEN COMMUNICATIONS.

Dr. J. A. FLEMING, F.R.S., President of the Institute, sent the following communication: I do not agree with the suggestion made in the beginning of this paper that the theory of Evolution has "turned the flank" of those who attach importance to the Argument from Design in support of the belief in a Divine Creative Power—as the origin of special organs of sense in the animal body. In a paper read last year to this Society, I pointed out that the term Evolution may legitimately be used to express the fact that organs and organisms do not make their appearance suddenly in perfect form, but proceed in stages from the simple to the complex, or rudimentary to final state.

In this sense we may also speak of the Evolution of any human invention, such as apparatus for wireless reception in broadcasting. If, however, the term Evolution is used, as it sometimes is, to denote a self-acting unconscious agency or operative cause—as, for instance, if any one asserts that an eye or an ear has been produced solely by Evolution—then that is an erroneous use of the term, and implies that Order, Adaptation, and Utility can result from the operation of agencies which are impersonal, and have no connection with self-conscious Mind or Intelligence.

In a book published some years ago, called *The Evidence of Things Not Seen* (S.P.C.K.), I have endeavoured to enforce the view that, “Since the Order, Adaptation, and Utility we see in Nature can only appeal to us and make themselves evident in virtue of our intelligence or powers of Thought; therefore they can only have arisen in consequence of the operation of an Intelligence and Thought which is independent of and outside of us.” In short, because it requires intelligence in us to perceive these qualities in the external universe, therefore they can only have been produced by Intelligence or Thought, and Thought necessitates and implies a Thinker.

The operation of unguided unself-conscious agencies in Nature, produces nothing but disorder, as when the sea waves mingle the stones on the beach, or the wind blows leaves from the trees. But the moment we see an Order of any kind, if it be only that of a row of trees at equidistant intervals, we unhesitatingly ascribe this order to the operation of a thinking Mind.

The progress of Biology may have rendered it necessary to restate carefully the Argument from Design, but it has not destroyed the validity of that argument. Nevertheless, there are unsolved difficulties such as rudimentary or unused organs in the animal body.

The author of the paper expounds in an interesting manner the properties of water, drawing the conclusion that there is Design and Purpose in all of them. There are some facts which are not mentioned in his paper which yet go to support his conclusions. For instance, water has a higher specific heat than any other liquid. That means that it requires more heat to raise the temperature of 1 lb. of water, 1° Fahr. than any other liquid. This is of great importance in the economy of Nature, because it follows that large masses of water change their temperature slowly. If it were not for that, a single night's frost might kill all the fish in a lake or river.

Then again, water has a higher dielectric constant than any other liquid, and is a more universal solvent. Hence its utility in washing, and for drinking, and other purposes in agriculture and the arts. Then it is neutral in its chemical operations, and is neither acid nor alkaline. It is non-inflammable and non-poisonous. If our oceans and lakes had consisted of alcohol or paraffin, the earth might long ago have become a burnt-out cinder. Then there are special utilities which follow from the capillary qualities of water, and its rise in fine tubes, making possible such effects as the rise of sap in a tree.

Other important qualities of water are its incompressibility and yet fluid properties, making it possible for actuating hydraulic machinery and transmission of power, and rendering also possible surface waves on it. We may well ask the Evolutionist to explain how it comes to pass that water has these remarkable properties, so supremely important in connection with animal, vegetable, and human life, which must have existed in it, ready for use, long before there was any animal or vegetable life on the earth at all.

We cannot find the answer to this question in terms of the mere spontaneous operation of physical forces or energies, but we find a sufficient answer in the words in Ps. cxi, 4 (P.B.V.): "The merciful and gracious Lord hath so done his marvellous works, that they ought to be had in remembrance."

Mr. W. C. EDWARDS wrote: To me and for me the Argument from Design is as strong as ever. It can never be superseded, and, using the Lecturer's military simile, it can never be "outflanked." The more I read and study, the more deeply I am impressed—I may say sometimes almost overwhelmed—by the evidences of design which I find everywhere.

I have just been reading some papers upon the structures of inorganic salts, and looking at models suggesting schemes explanatory of the arrangement of atoms in molecules. All speak (to me) of our omnipotent omniscient Creator, God. He is findable in the finite littlenesses, as well as the infinite immensities.

Some months ago, on the wireless, in an address on Evolution, the speaker said: "A century ago all this was quoted as proofs of design, but we now know (*sic*) them to be proofs (*sic*) of Evolution."

Such language is a mystery to me. I ask them *how?*—and they glibly reply, “Evolution.” I demand *why?*—and the same words given as an answer.

I can conceive of a man persuading himself that Evolution was and is a mode or method along which the Creator has worked, or is working, His plans; but I cannot understand the mentality of an intelligent being who can regard Evolution as both a cause and a mode.