

768TH ORDINARY GENERAL MEETING,

HELD IN COMMITTEE ROOM B, THE CENTRAL HALL,
WESTMINSTER, S.W.1, ON MONDAY, APRIL 3RD, 1933,
AT 4.30 P.M.

W. McADAM ECCLES, Esq., M.S., F.R.C.S., IN THE
CHAIR.

The Minutes of the previous Meeting were read, confirmed, and signed, and the HON. SECRETARY announced the election of the Rev. Arthur E. Hughes, M.A., as a Member, from Associate.

The CHAIRMAN then called upon Dr. C. W. Saleeby, F.R.S.E., to read his paper on "Sunlight and Life," which was illustrated by lantern slides.

SUNLIGHT AND LIFE.

By DR. C. W. SALEEBY, F.R.S.E., Chairman of the Sunlight
League.

"In the beginning . . . God said, Let there be Light,
and there was Light."

THE astronomers tell us that our earth began as a ball of hot gas, including the vapour of water. This mass lost heat by radiation to outer space and thus cooled, with the result that, at a certain point, the water vapour fell as liquid water upon the solid matter beneath, and formed the first oceans and seas of our globe. This clearance of the atmosphere, depending upon the formation of liquid water, admitted the light of the sun. It was the first Enlightenment. Upon it depended the development of life—an aquatic phenomenon, as a French biologist has called it—in the liquid water which is a necessary vehicle for all vital processes.

Chaos and Old Night, in this event, yielded to Cosmos and the beginning of that process of creative evolution, as Bergson has taught us to call it, which prepared the way, through the

ages, to the emergence of mankind. We are inevitably reminded of the words of Genesis, "In the beginning God said, Let there be Light, and there was Light." When the light of the sun reached liquid water, physical life became possible, all living things being light "made flesh." To this statement there is no exception. Living things at the bottom of deep oceans, which no light can reach, yet live upon the products of living things nearer the lighted surface. Bacteria, which are rapidly killed by light—the oldest, cheapest, safest and best of all antiseptics—live, when they do live, upon the living bodies, or the *excreta* or remains, of creatures which live (or have lived) in the sun directly or indirectly. All physical life is incarnate light.

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The living world is evidently divided into two kingdoms, vegetable and animal. The characteristic and essential feature of the vegetable kingdom is the green leaf, the chlorophyll of which transforms part of the sun's light in such manner as to dissociate the carbon dioxide of the atmosphere and initiate the chemical cycle of life. All animal and human life, in its physical aspect, is thus supported: This is one sense in which all flesh is grass. We are learning how to utilize sunlight directly for chemical purposes, but meanwhile our dependence upon the vegetable remains. Much may be learnt for the health and happiness of our own bodies from the response of green leaves to sunlight. But one outstanding fact is to be observed, which I have long discussed, though it does not appear to have attracted enough attention from other students.

More than a quarter of a century ago I defined progress as "the emergence and increasing dominance of mind." If we look at the history of the animal kingdom, we see, "sagging but pertinacious," the emergence and increasing dominance of mind. But the vegetable kingdom offers us here a remarkable contrast. It has a long and superb history. It has achieved great things. There is a noble ascent from the alga to the oak. But there is no progress whatever in the sense in which I use the word: no "emergence and increasing dominance of mind."

We dare not assert that there is no truth in Wordsworth's belief that "every flower enjoys the air it breathes." There may well be psychic elements in the constitution of the vegetable world; but my point is that there is no more, nor richer, psychica

life to be seen in the greatest or latest of the flowering trees than in a fungus or a fern. The oak shows more mechanical and biochemical complexity and achievement, but the evolution of the vegetable world, whether we look at the individual or the race, exhibits no progress. There is no more mind in the oak than in the acorn or the alga.

Far otherwise is it in the animal kingdom, where the central nervous system evolves in the vertebrates, becoming, in favoured races, ever more and more important and serving as the organ of sensation, emotion, memory, foresight and reason. All is founded upon the green leaf and sunlight. It is the solar energy, transformed, that makes and maintains the finest brain, that furnishes the physical conditions for the highest manifestations of the psychical which, under these conditions, reveals its presence in the Universe, "comes through," emerges and increasingly dominates all else: Progress indeed.

We are men and it is the human that concerns us. The mighty fact, following upon all we have outlined hitherto, is the emergence of *Homo Sapiens* upon our globe—*his* globe, as it now becomes. There has been, is, and will be abundance of folly and stupidity, but it is the sapience that here concerns us. This creature is intelligent, capable of learning, but needing to learn, unlike the instinctive insects. This necessity requires parental care during early months and years, and it is here that self-sacrifice, the very substance of morals, emerges, and takes its place as an indispensable condition of the existence of large-brained mammals upon the earth—and especially the existence of man, of whom the young are the most helpless at birth, and the longest helpless, of any living thing, though the adult is to be the "paragon of animals," "a little lower than the angels."

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Morality and intelligence, we see, are essentials for the existence of our species. Given these, there is scarcely any limit to the numbers of mankind, nor to the range of physical conditions in which he can live, and even flourish. But sunlight is always essential, and its pre-eminent value is such that prophets and moralists have always used it as a symbol for moral and intellectual qualities. Note the utterance of Jesus Christ: "I am the Light of the World"; and that of Shakespeare, "There is no darkness but ignorance."

Three names must here be honoured of Pioneers of Light

before the Christian Era. In the thirteenth century before Christ, the Pharaoh Akhnaton sought to supersede the idolatry and priestcraft of the established religion by founding a new "City of the Horizon," where the solar disc was to be worshipped as the symbol and vehicle of divine and life-giving power. The attempt failed, but the noble record of it remains. In the eight century before Christ, the Persian seer Zoroaster—to use the Greek form of his name—established a religion which should worship the Sun as the immediate Lord and Giver of Life, and taught the value of peace, thrift and tillage of the soil, instead of war and rapine. It was during the same immeasurably fruitful period that certain Hebrew prophets, especially Amos, Hosea, and Isaiah, were establishing new concepts of the true nature of religion, which may be summed up in the prophetic utterance, "I will have mercy and not sacrifice." In the realm of ethics, this Jewish contribution to the History of Mankind was no less valuable than its concept of monotheism in the sphere of intellect.

Some four centuries later, we find the contribution of Greece in the person of Hippocrates, the Father of Medicine, priest and physician in the Temple at Cos of Æsculapius, the God of Healing, and Son of Phœbus Apollo, the Sun-God. This immortal genius, the greatest doctor who ever lived, taught that man suffers disease when he ceases to live according to Nature, and may hope for health only when and if he returns and obeys the laws of life. Hippocrates paid little heed to the accepted service of the temple—prayers to the statue of Æsculapius, sacrifices and offerings. He had at his disposal pure air, enriched by the sea; abundant light, unpolluted by smoke, undepleted of its riches by dust; pure streams of water from the hills; fresh food, conforming to the ideal now proclaimed by the most recent school of dietetics—that food shall above all consist of the substances called "light-accumulators." Air and light, food and water—these are the things by which the body lives, and Hippocrates used them. Drugs and superstitious rites, expectation of benefits earned by payment of flattery or money to an idol or the idol's keepers—these were not for him. He took off his patient's clothes and set them to do exercises in the spacious forecourt of the Temple. This *gymnastiké* (from *gymnos*—"naked") made them well. This was literal enlightenment, following upon the intellectual enlightenment of the great pioneer's mind. Twenty-four centuries later, after long eclipse,

we may now see the Hippocratic gymnastics, revived and reviving, at the School in the Sun, established by Rollier at Leysin in 1910 ; but that is to anticipate the course of events.

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Already, however, we may clearly perceive that the master-word, the master-process of history, is Enlightenment. Creative evolution is this, depends upon this, brings this. If we continue to use the language of Genesis, we must say that not only "In the beginning God said, 'Let there be Light,'" but that throughout the ages He has been saying so ; nor may His last word yet been said. But the process of creative evolution, continuous revelation, ever new enlightenment, is not constant nor unbroken. It proceeds through men and women of genius—that genius which Thomas Carlyle defined as "the clearer presence of God Most High in a man." We may recall older words—"As He spake by the mouth of His holy prophets, which have been since the world began."

For reasons which it is beyond my present scope or power even to suggest, mankind traversed a long and tragic period, during which the shadow of superstition—that is to say, Ignorance in Motion, which Goethe declared to be the most dangerous thing in the world—fell upon mankind. The Jews were scattered, homeless, oppressed, and the voice of Hebrew prophecy was silent or unheard. The glorious beginnings of science, which the Greeks had achieved, were arrested and forgotten. The Dark Ages had set in. To consider only my own special field of study and illustration, we see that Hippocrates might never have lived. A true science of healing and health had been founded in Cos, and was forgotten. The most ignominious, imbecile and cruel superstition took its place. The age was dark because it was ignorant and did not seek the light of science. Shakespeare, in the early new dawn which came at last, was right as ever :—"There is no darkness but ignorance."

The race through which had been given the Hebrew prophets to the world—poets and prophets who praised the light, for itself and as a manifestation of the divine—was confined to dark and dirty Ghettos, where flourished all those hideous and horrible maladies to which, twelve years ago, I gave the name "diseases of darkness"—diseases which abound still in the slums of the modern civilized world, and not in slums only, but wherever the sunlight is despised, excluded or polluted.

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The Greek study of the body and mind of man was arrested by order of the Church. Such study was condemned as impious. Not yet had come a Kepler, to study the moving lights in the sky and to reply to his wife, who wanted to know what business had kept him on his roof when supper was ready, that he had been "thinking the thoughts of God after Him": nor a Goethe to call Nature "the living garment of God." The abominable results of a blasphemy, calling itself religion, which forbade the study of Nature, are recorded far and wide, long and deep. For myself, their most awful and damnatory record is in the history of the treatment of the insane throughout these long centuries, and even until the French doctor, Pinel, with his enlightened mind, and the English Quaker-philanthropist, William Tuke, with his enlightened heart, brought light into the darkest of all dark places at the end of the eighteenth century. Never had darkness been more accursed, never was Enlightenment, the word of Life, more needed and blessed. Many a game of cricket and lawn tennis have I played, many a song have I sung, these thirty years or more ago, in the Retreat, at York, the first humane asylum for the insane in the world, which William Tuke founded, and where my Quaker grandfather, Dr. Caleb Williams, visited for forty-seven years. To-day, our new-old teaching about the value of sunlight is nowhere more appreciated and applied than in these mental hospitals—to use their recent official name—and with admirable results.

This point may be insisted upon here, since every good clinician of to-day who uses real sunlight in the open air, insists on the importance of the psychological factor in helping the physical cure—yes, even of an open fracture incurred in war, or of a tuberculous infection incurred in the flagrant urban follies of so-called peace. Our recent proofs of the biochemical action of sunlight—as in the making of vitamin D in the sunlit skin—must not lead us to forget the high and enduring importance of the psychical factors at work in true heliotherapy and heliohygiene. To remember these is to put "artificial sunlight" in an inferior place, despite the recent exploitation of that invention by the mercenary, and will persuade us that, in general, to shut people up, when they are ill in mind or body, is bad practice, cruel and stupid, contrary to Nature. Not imprisonment, but Enlightenment, is the word of Life.

We can never remember the story of Eden to better purpose than when we learn from it that man was not meant to live in a

house, but in a garden, a sunlit garden, and that this is a truth even more important for man when he is ill in body or mind than when he is well and has reserves, as yet undepleted, which may avail to mask the results of his imprisonment and deprivation—whether voluntary or enforced matters not for the consequences.

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But we must proceed to name a few pioneers of light, heralds of the returning dawn, to whom our enlightened eyes and minds and bodies should render thanks. Here, of course, my concern is primarily with those who saw and taught the value of sunlight. Time avails for little more than their names; for more the student of this lovely subject may be referred elsewhere.*

Foremost is Florence Nightingale, who protested in 1856 against the already-begun building of Netley Hospital, with its orientation such that no direct sunlight could enter its wards, and who wrote that “The sun is not only a painter, it is also a sculptor”: an anticipation by the sheer insight of genius of the discovery to be made much later, that sunlight creates vitamin D in the skin, which vitamin is the chisel wherewith the sculptor sun forms aright the bones and teeth of the growing body, thus infallibly, quickly, beautifully and delightfully preventing or curing rickets.

In 1877, Sir Arthur Downes, M.D., as he now is—an illustrious veteran in his eighty-second year—having considered the growth of mould upon old boots in a cupboard, guessed that this must be due to the absence of light, and proceeded to prove that light is an antiseptic. This epoch-making discovery has been fully discussed, after no fewer than fifty-five years, by the discoverer himself, in a recent number of *Sunlight*, the Journal of the Sunlight League,† of which he is an honoured Vice-President.

In 1890, the late Dr. T. A. Palm, having returned to a village practice in Cumberland from nine years’ service in Japan, under the Edinburgh Medical Missionary Society, published in the

* See *Heliotherapy*, by Professor A. Rollier, with Foreword by Dr. C. W. Saleeby. Second edition, 1926. (Oxford Medical Publications; 25s. net.).—*Sunlight and Health*, by Dr. C. W. Saleeby, with Foreword by the late Sir William Bayliss, F.R.S. Fifth edition, 1929. (Nisbet & Co., 5s. net.)

† Copies of the issues of *Sunlight*, to which reference is made here and later, may be obtained from the office of the Sunlight League, 29, Gordon Square, W.C. (1s., post free).

Practitioner a masterly paper in which he showed that rickets is due to lack of sunlight, and laid down a series of recommendations which I adopted in 1924 as the policy of the Sunlight League, formed in that year. Dr. Palm became one of our Presidents, and the essential parts of his great monograph—which had been completely forgotten and ignored from 1890 until my attention was directed to it, when visiting New York in 1920, in order to study the problem of urban smoke prevention—are re-published in an early number of *Sunlight*.

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Forty years ago, in 1893, the Danish pioneer, Niels Finsen, acting upon the discovery of Downes that light is an antiseptic, began to use it for the cure of lupus, a tuberculous invasion of the skin. His work attracted the attention of the great-hearted lady, then Princess of Wales, who had come to us from Denmark. At her request, Lord Knutsford (as he afterwards became) sent a committee of doctors to Copenhagen; their favourable report was acted upon, and light treatment was formally inaugurated at the London Hospital on May 1st, 1900, when the Princess, accompanied by her husband, opened the department which now, vastly enlarged, bears her name. Having seen with horror, in Edinburgh, as a student, cases of lupus scraped by the surgeons, I visited the London Hospital in 1902, and there saw enough to persuade me that no young man could set himself a more inspiring and useful life work than to try to spread the light. In 1924 Queen Alexandra became Patron of the Sunlight League and Lord Knutsford one of our Vice-Presidents. In an early number of our *Journal* was reprinted the article which I published in the *Pall Mall Gazette* when Finsen died, so lamentably young, in 1904; its closing words were, "He, being dead, yet healeth."

Thirty years ago, in 1903, a decade after the pioneer work of Finsen was published in 1893, Dr. A. Rollier opened his first clinic at Leysin, for the treatment of five indigent tuberculous children. In 1910 he founded the school in the sun, where there has never been an epidemic of any kind yet. In 1914 he published his book, *La Cure de Soleil*. In 1921 I visited Leysin, and have been writing, lecturing and broadcasting about it ever since, with ever-increasing certainty and ever-renewed evidence. Enlightenment is the word of life. Elsewhere the student may learn of the advance of medical and hygienic

science. Such places are an education, but Leysin is a revelation. We see there the coming end of the knife-and-bottle cult which has hitherto been our best means of replacing mediæval superstition. We see the cure of unnatural disease by natural means. We see the achievement of preventive medicine at the school in the sun. We watch, year by year, summer and winter, as I have done, the growth and development of fine young bodies and minds—"full-breathed, bright-eyed, happy-hearted human creatures," in Ruskin's phrase—to be equalled nowhere except in the few but ever less few places where the same laws of life are observed. We come to perceive that beyond, better and greater even than preventive medicine is what I have called creative hygiene, wherein we see fulfilled the true and lasting task of Medicine, more than medicine, which merely means healing. That task is *to make and maintain fine men and women.*

Ever since the late summer of 1921, when it was my privilege, beginning with letters to *The Times*, to "tell the world" about Leysin, men and women, students and amateurs, old-fashioned surgeons, new-fashioned educationists and all, have been and continuously are, travelling to Leysin, day and night, from all the Continents, there to see radiant proofs of the manner in which the light has shined upon people that have dwelt in the land of the shadow of death—to adapt the words of Isaiah.

Thirty years after that small beginning, Professor Rollier remains the same simple, quiet, devoted deeply-religious man; a true son of that Professor of Theology whom no threats nor even the loss of his academic chair could dissuade from helping the Salvation Army in Switzerland when he thought it was doing good work. In 1928 the semi-jubilee of the foundation was duly celebrated at Leysin, and the University of Lausanne made the founder an Honorary Professor. He has been, since the formation of the Sunlight League, our first foreign Vice-President. His latest work is the establishment of the International Factory Clinic, where, in sunlight and pure air, stricken men are aided to recovery by the provision of suitable, useful and remunerative occupation—"la cure de travail." It is not the whole philosophy of the sunlight movement that we should all lie and laze and drowse in the sun, though such degeneration is only too easy. The school in the sun for children, and the factory clinic for men, are living lessons to the whole truth.

Aberrations, exaggerations, absurdities are inevitable in the early stages, not only in them, of any epoch of enlightenment. Idleness and licentiousness will be advocated by the idle and licentious: just as when the excellent use of baths of water in Rome was abused. Extravagant and irrelevant claims are made by the unwise or mercenary. Artificial sunlight, valuable in its place and within its limits, is praised above the light of day and the open air. We have to recognize these things, oppose them, correct them, and go on our way towards the growing light of a cleaner, purer, simpler, healthier, more natural way of life, at once more primitive in one aspect and yet in another immeasurably more exalted and refined than our present civilization. Practical current illustrations are to be found in the new type of open-air and sunlight hospital now being built, in open-air schools and in the steady replacement of the burning of raw coal by the use of gas, coke and electricity, which do not pollute the breath and eclipse the light of life.

We shall make an end of the diseases of darkness, from tuberculosis to rickets, as we have made an end, in our cities, of the water-borne diseases. We shall have gardens of children and gardens for children. We shall have abundance of sunlit food, in winter as well as summer, for all. Our new cities will be garden cities, the buildings will have flat roofs, for varied use in various seasons, not only by day, but even also in the pure, cool, smokeless and dustless air of the night. To these ends the Sunlight League is working and more helpers in this work of Enlightenment are earnestly desired.

The Dawn may be dim as yet, but it is surely here. No stupidity could be more stupid, nor blasphemy more blasphemous, than to assume that the process of Enlightenment, which literally began when the first rain descended upon our globe, and which has been repeated ever since, in Jewish prophets and Greek philosophers, in Bethlehem and Stratford-on-Avon, in London and Leysin, is now, in this particular year, finished, exhausted, extinct.

Far indeed is the truth from that. "In the beginning," says Genesis, "God said, Let there be Light." But not only in the beginning: "As it was in the beginning, is now, and ever shall be." All material things, we learn, are radiation in their substance; all life is light. The world is a world of light, and if we would question deeper still, I know no better answer than that expressed in the words, *Lux Umbra Dei*—Light is the Shadow

of God : of "Him that maketh the seven stars and Orion, and turneth the shadow of death into the morning."

DISCUSSION.

Mr. GEORGE BREWER said : Apart from the occasional references to the unproved and discredited theory of Evolution, I think we are greatly indebted to Dr. Saleeby for the interesting and instructive details he has given us of the beneficial and healing effects of the solar rays upon the human system. It is indeed good to behold the sun, and its relation to our earth is a continual evidence of God's merciful provision for our needs, and of His long-suffering goodness to man even when in rebellion against Him.

Dr. Saleeby mentions Persian and Egyptian cults of men who worshipped the sun. This form of idolatry was doubtless practised by other ancient nations who had ceased the worship of the one true God, and was indeed one of the sins of Israel, against which many warnings are given in the Old Testament. It is mentioned by Ezekiel, who in vision, saw twenty-five men with their backs toward the temple of the Lord, and their faces toward the East, worshipping the sun toward the East (Ezek. viii, 16).

God is light, and in Him is no darkness at all ; and in the reconstruction of this earth which had become without form and void, by His word "Let there be light," He made the first necessary provision for the advent of His creature man. Since natural light is absolutely needful for the welfare of our bodies, how much more is Divine light needed for our souls' welfare !

WRITTEN COMMUNICATIONS.

Lieut.-Colonel DAVIES, F.G.S., wrote : Dr. Saleeby's paper affords excellent propaganda on the subject of sunshine benefits. As a supporter and maintainer of vital processes, sunlight is indispensable ; if the sun's influence were removed, all terrestrial life would inevitably come to an end. Nor is that the only thing that would happen, for all geological processes would cease, the atmosphere itself would probably congeal, and even acids would no longer react on metals.

But it is only as a servant, or minister, to terrestrial life that the sun is referred to in Scripture. Dr. Saleeby's enthusiasm leads him

to exaggerate its functions, both in the Scriptural and in the scientific aspects of things, when he suggests that sunlight is the beginning of creation, and itself the creator of life and intelligence. The Bible, which calls the sun *Shemesh*, or servant—never *Baal* or Lord—does not state (as Dr. Saleeby represents) that “In the beginning God said ‘Let there be Light.’” What Scripture actually says is, that “In the beginning God created the heavens and the earth.” Light is not mentioned in the Bible until the beginning of the *Hexaëmeron*, *after* the condition of affairs described in the second verse, which refers to the earth as already existing. Nor is this light, which is introduced at the beginning of the six days, the light of the sun; for the sun itself does not begin to function until the fourth day, *after* the creation of vegetable life on the third day. However we may choose to interpret these facts, it is clear that Genesis i was not written with a view to encouraging sun-worship.

Science is equally emphatic. Life, as Pasteur showed, comes only from pre-existing life. Sunlight is indeed essential to support terrestrial life, but it is powerless to create it; much less can it create—though it is essential to support—terrestrial thought processes. An eternity of sunlight would not make a lizard think the thoughts of a Newton.

Rev. Dr. H. C. MORTON wrote: Dr. Saleeby’s great work commands my ardent admiration. Had not the True God revealed Himself, I have often said I should have joined Akhnaton as a worshipper of the Sun. The language which was, to all seeming, used by Akhnaton evidently justifies the lecturer in hailing Akhnaton as the pioneer, I presume far the earliest pioneer, of the cause which is before us to-night. The object of Akhnaton’s worship is given as “the effulgence which is in Aton,” and then again he says: “The Living Aton, beside whom there is no other. Thou art alone, but infinite vitalities are in Thee, by means of which Thou dost give life to thy creatures.”

To one thing in the paper I venture to take exception, viz., the evolutionary leanings displayed. I am one of the multitude who entirely refuse the concept of Evolution. It seems clear, from frequent references to “emergence,” that Dr. Saleeby aligns himself with the Emergent Evolutionists—who realize the failure of the

earlier forms of Evolution to "show cause" for the transformations which are supposed to have taken place, and therefore replace the idea of "cause" by that of "emergence." But when Dr. Saleeby says that "there may be psychic elements in the constitution of the vegetable world," and thus admits what is called "psycho-physical parallelism," that is not, I submit, in harmony with Emergence in the technical sense of Emergent Evolution. Dr. W. M. Wheeler, defining Emergence, says: "it does not signify the manifestation or unveiling of something hidden and already existing." Thus, if the psychic, *i.e.*, the mental, is already existing, though hidden, in the vegetable world, mind later on may be increasingly dominant, but is certainly not to be called "emergent."

Just one other point I want to submit to the learned lecturer—a kind of pragmatic point. In the first half of the lecture references to Evolution abound. Then they cease altogether, and the paper proceeds most cogently. The concept of Evolution does not add anything to the effective power of the paper; and therefore very humbly I submit that Evolution might be omitted altogether, without detracting from the weight and cogency of a valuable lecture.