

**CHARLES
KINGSLEY**

ALEXANDRIA
AND HER
SCHOOLS

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Конец ознакомительного фрагмента.	18

Charles Kingsley
Alexandria and Her Schools /
Four Lectures Delivered at the
Philosophical Institution, Edinburgh
ALEXANDRIA AND HER SCHOOLS. ¹

PREFACE

I should not have presumed to choose for any lectures of mine such a subject as that which I have tried to treat in this book. The subject was chosen by the Institution where the lectures were delivered.

Still less should I have presumed to print them of my own accord, knowing how fragmentary and crude they are. They were printed at the special request of my audience. Least of all, perhaps, ought I to have presumed to publish them, as I have done, at Cambridge, where any inaccuracy or sciolism (and that such defects exist in these pages, I cannot but fear) would be instantly detected, and severely censured: but nevertheless, it seemed to me that Cambridge was the fittest place in which they could see the light, because to Cambridge I mainly owe what little right method or sound thought may be found in them, or indeed, in anything which I have ever written. In the heyday of youthful greediness and ambition, when the mind, dazzled by the vastness and variety of the universe, must needs know everything, or rather know about everything, at once and on the spot, too many are apt, as I have been in past years, to complain of Cambridge studies as too dry and narrow: but as time teaches the student, year by year, what is really required for an understanding of the objects with which he meets, he begins to find that his University, in as far as he has really received her teaching into himself, has given him, in her criticism, her mathematics, above all, in Plato, something which all the popular knowledge, the lectures and institutions of the day, and even good books themselves, cannot give, a boon more precious than learning; namely, the art of learning. That instead of casting into his lazy lap treasures which he would not have known how to use, she has taught him to mine for them himself; and has by her wise refusal to gratify his intellectual greediness, excited his hunger, only that he may be the stronger to hunt and till for his own subsistence; and thus, the deeper he drinks, in after years, at fountains wisely forbidden to him while he was a Cambridge student, and sees his old companions growing up into sound-headed and sound-hearted practical men, liberal and expansive, and yet with a firm standing-ground for thought and action, he learns to complain less and less of Cambridge studies, and more and more of that conceit and haste of his own, which kept him from reaping the full advantage of her training.

These Lectures, as I have said, are altogether crude and fragmentary—how, indeed, could they be otherwise, dealing with so vast a subject, and so long a period of time? They are meant neither as Essays nor as Orations, but simply as a collection of hints to those who may wish to work out the subject for themselves; and, I trust, as giving some glimpses of a central idea, in the light of which the spiritual history of Alexandria, and perhaps of other countries also, may be seen to have in itself a coherence and organic method.

¹ These Lectures were delivered at the Philosophical Institution, Edinburgh, in February, 1854, at the commencement of the Crimean War.

I was of course compelled, by the circumstances under which these Lectures were delivered, to keep clear of all points which are commonly called “controversial.” I cannot but feel that this was a gain, rather than a loss; because it forced me, if I wished to give any interpretation at all of Alexandrian thought, any Theodicy at all of her fate, to refer to laws which I cannot but believe to be deeper, wider, more truly eternal than the points which cause most of our modern controversies, either theological or political; laws which will, I cannot but believe also, reassert themselves, and have to be reasserted by all wise teachers, very soon indeed, and it may be under most novel embodiments, but without any change in their eternal spirit.

For I may say, I hope, now (what if said ten years ago would have only excited laughter), that I cannot but subscribe to the opinion of the many wise men who believe that Europe, and England as an integral part thereof, is on the eve of a revolution, spiritual and political, as vast and awful as that which took place at the Reformation; and that, beneficial as that revolution will doubtless be to the destinies of mankind in general, it depends upon the wisdom and courage of each nation individually, whether that great deluge shall issue, as the Reformation did, in a fresh outgrowth of European nobleness and strength or usher in, after pitiable confusions and sorrows, a second Byzantine age of stereotyped effeminacy and imbecility. For I have as little sympathy with those who prate so loudly of the progress of the species, and the advent of I know-not-what Cockaigne of universal peace and plenty, as I have with those who believe on the strength of “unfulfilled prophecy,” the downfall of Christianity, and the end of the human race to be at hand. Nevertheless, one may well believe that prophecy will be fulfilled in this great crisis, as it is in every great crisis, although one be unable to conceive by what method of symbolism the drying up of the Euphrates can be twisted to signify the fall of Constantinople: and one can well believe that a day of judgment is at hand, in which for every nation and institution, the wheat will be sifted out and gathered into God’s garner, for the use of future generations, and the chaff burnt up with that fire unquenchable which will try every man’s work, without being of opinion that after a few more years are over, the great majority of the human race will be consigned hopelessly to never-ending torments.

If prophecy be indeed a divine message to man; if it be anything but a cabbala, useless either to the simple-minded or to the logical, intended only for the plaything of a few devout fancies, it must declare the unchangeable laws by which the unchangeable God is governing, and has always governed, the human race; and therefore only by understanding what has happened, can we understand what will happen; only by understanding history, can we understand prophecy; and that not merely by picking out—too often arbitrarily and unfairly—a few names and dates from the records of all the ages, but by trying to discover its organic laws, and the causes which produce in nations, creeds, and systems, health and disease, growth, change, decay and death. If, in one small corner of this vast field, I shall have thrown a single ray of light upon these subjects—if I shall have done anything in these pages towards illustrating the pathology of a single people, I shall believe that I have done better service to the Catholic Faith and the Scriptures, than if I did really “know the times and the seasons, which the Father has kept in His own hand.” For by the former act I may have helped to make some one man more prudent and brave to see and to do what God requires of him; by the latter I could only add to that paralysis of superstitious fear, which is already but too common among us, and but too likely to hinder us from doing our duty manfully against our real foes, whether it be pestilence at home or tyranny abroad.

These last words lead me to another subject, on which I am bound to say a few words. I have, at the end of these Lectures, made some allusion to the present war. To have entered further into political questions would have been improper in the place where those Lectures were delivered: but I cannot refrain from saying here something more on this matter; and that, first, because all political questions have their real root in moral and spiritual ones, and not (as too many fancy) in questions merely relating to the balance of power or commercial economy, and are (the world being under the guidance of a spiritual, and not a physical Being) finally decided on those spiritual grounds, and

according to the just laws of the kingdom of God; and, therefore, the future political horoscope of the East depends entirely on the present spiritual state of its inhabitants, and of us who have (and rightly) taken up their cause; in short, on many of those questions on which I have touched in these Lectures: and next, because I feel bound, in justice to myself, to guard against any mistake about my meaning or supposition that I consider the Turkish empire a righteous thing, or one likely to stand much longer on the face of God's earth.

The Turkish empire, as it now exists, seems to me an altogether unrighteous and worthless thing. It stands no longer upon the assertion of the great truth of Islam, but on the merest brute force and oppression. It has long since lost the only excuse which one race can have for holding another in subjection; that which we have for taking on ourselves the tutelage of the Hindoos, and which Rome had for its tutelage of the Syrians and Egyptians; namely, the governing with tolerable justice those who cannot govern themselves, and making them better and more prosperous people, by compelling them to submit to law. I do not know when this excuse is a sufficient one. God showed that it was so for several centuries in the case of the Romans; God will show whether it is in the case of our Indian empire: but this I say, that the Turkish empire has not even that excuse to plead; as is proved by the patent fact that the whole East, the very garden of the old world, has become a desert and a ruin under the upas-blight of their government.

As for the regeneration of Turkey, it is a question whether the regeneration of any nation which has sunk, not into mere valiant savagery, but into effete and profligate luxury, is possible. Still more is it a question whether a regeneration can be effected, not by the rise of a new spiritual idea (as in the case of the Koreish), but simply by more perfect material appliances, and commercial prudence.

History gives no instance, it seems to me, of either case; and if our attempt to regenerate Greece by freeing it has been an utter failure, much more, it seems to me, would any such attempt fail in the case of the Turkish race. For what can be done with a people which has lost the one great quality which was the tenure of its existence, its military skill? Let any one read the accounts of the Turkish armies in the fifteenth, sixteenth, and seventeenth centuries, when they were the tutors and models of all Europe in the art of war, and then consider the fact that those very armies require now to be officered by foreign adventurers, in order to make them capable of even keeping together, and let him ask himself seriously, whether such a fall can ever be recovered. When, in the age of Theodosius, and again in that of Justinian, the Roman armies had fallen into the same state; when the Italian legions required to be led by Stilicho the Vandal, and the Byzantine by Belisar the Sclav and Narses the Persian, the end of all things was at hand, and came; as it will come soon to Turkey.

But if Turkey deserves to fall, and must fall, it must not fall by our treachery. Its sins will surely be avenged upon it: but wrong must not avenge wrong, or the penalty is only passed on from one sinner to another. Whatsoever element of good is left in the Turk, to that we must appeal as our only means, if not of saving him, still of helping him to a quiet euthanasia, and absorption into a worthier race of successors. He is said (I know not how truly) to have one virtue left; that of faithfulness to his word. Only by showing him that we too abhor treachery and bad faith, can we either do him good, or take a safe standing-ground in our own peril. And this we have done; and for this we shall be rewarded. But this is surely not all our duty. Even if we should be able to make the civil and religious freedom of the Eastern Christians the price of our assistance to the Mussulman, the struggle will not be over; for Russia will still be what she has always been, and the northern Anarch will be checked, only to return to the contest with fiercer lust of aggrandisement, to enact the part of a new Macedon, against a new Greece, divided, not united, by the treacherous bond of that balance of power, which is but war under the guise of peace. Europe needs a holier and more spiritual, and therefore a stronger union, than can be given by armed neutralities, and the so-called cause of order.

She needs such a bond as in the Elizabethan age united the free states of Europe against the Anarch of Spain, and delivered the Western nations from a rising world-tyranny, which promised to be even more hideous than the elder one of Rome. If, as then, England shall proclaim herself the champion

of freedom by acts, and not by words and paper, she may, as she did then, defy the rulers of the darkness of this world, for the God of Light will be with her. But, as yet, it is impossible to look without sad forebodings upon the destiny of a war, begun upon the express understanding that evil shall be left triumphant throughout Europe, wheresoever that evil does not seem, to our own selfish short-sightedness, to threaten us with immediate danger; with promises, that under the hollow name of the Cause of Order—and that promise made by a revolutionary Anarch—the wrongs of Italy, Hungary, Poland, Sweden, shall remain unredressed, and that Prussia and Austria, two tyrannies, the one far more false and hypocritical, the other even more rotten than that of Turkey, shall, if they will but observe a hollow and uncertain neutrality (for who can trust the liar and the oppressor?)—be allowed not only to keep their ill-gotten spoils, but even now to play into the hands of our foe, by guarding his Polish frontier for him, and keeping down the victims of his cruelty, under pretence of keeping down those of their own.

It is true, the alternative is an awful one; one from which statesmen and nations may well shrink: but it is a question, whether that alternative may not be forced upon us sooner or later, whether we must not from the first look it boldly in the face, as that which must be some day, and for which we must prepare, not cowardly, and with cries about God's wrath and judgments against us—which would be abject, were they not expressed in such second-hand stock-phrases as to make one altogether doubt their sincerity, but chivalrously, and with awful joy, as a noble calling, an honour put upon us by the God of Nations, who demands of us, as some small return for all His free bounties, that we should be, in this great crisis, the champions of Freedom and of Justice, which are the cause of God.

At all events, we shall not escape our duty by being afraid of it; we shall not escape our duty by inventing to ourselves some other duty, and calling it "Order." Elizabeth did so at first. She tried to keep the peace with Spain; she shrank from injuring the cause of Order (then a nobler one than now, because it was the cause of Loyalty, and not merely of Mammon) by assisting the Scotch and the Netherlanders: but her duty was forced upon her; and she did it at last, cheerfully, boldly, utterly, like a hero; she put herself at the head of the battle for the freedom of the world, and she conquered, for God was with her; and so that seemingly most fearful of all England's perils, when the real meaning of it was seen, and God's will in it obeyed manfully, became the foundation of England's naval and colonial empire, and laid the foundation of all her future glories. So it was then, so it is now; so it will be for ever: he who seeks to save his life will lose it: he who willingly throws away his life for the cause of mankind, which is the cause of God, the Father of mankind, he shall save it, and be rewarded a hundred-fold. That God may grant us, the children of the Elizabethan heroes, all wisdom to see our duty, and courage to do it, even to the death, should be our earliest prayer. Our statesmen have done wisely and well in refusing, in spite of hot-headed clamours, to appeal to the sword as long as there was any chance of a peaceful settlement even of a single evil. They are doing wisely and well now in declining to throw away the scabbard as long as there is hope that a determined front will awe the offender into submission: but the day may come when the scabbard must be thrown away; and God grant that they may have the courage to do it.

It is reported that our rulers have said, that English diplomacy can no longer recognise "nationalities," but only existing "governments." God grant that they may see in time that the assertion of national life, as a spiritual and indefeasible existence, was for centuries the central idea of English policy; the idea by faith in which she delivered first herself, and then the Protestant nations of the Continent, successively from the yokes of Rome, of Spain, of France; and that they may reassert that most English of all truths again, let the apparent cost be what it may.

It is true, that this end will not be attained without what is called nowadays "a destruction of human life." But we have yet to learn (at least if the doctrines which I have tried to illustrate in this little book have any truth in them) whether shot or shell has the power of taking away human life; and to believe, if we believe our Bibles, that human life can only be destroyed by sin, and that all which is lost in battle is that animal life of which it is written, "Fear not those who can kill the

body, and after that have no more that they can do: but I will forewarn you whom you shall fear; him who, after he has killed, has power to destroy both body and soul in hell.” Let a man fear him, the destroying devil, and fear therefore cowardice, disloyalty, selfishness, sluggishness, which are his works, and to be utterly afraid of which is to be truly brave. God grant that we of the clergy may remember this during the coming war, and instead of weakening the righteous courage and honour of our countrymen by instilling into them selfish and superstitious fears, and a theory of the future state which represents God, not as a saviour, but a tormentor, may boldly tell them that “He is not the God of the dead but of the living; for all live unto Him;” and that he who renders up his animal life as a worthless thing, in the cause of duty, commits his real and human life, his very soul and self, into the hands of a just and merciful Father, who has promised to leave no good deed unrewarded, and least of all that most noble deed, the dying like a man for the sake not merely of this land of England, but of the freedom and national life of half the world.

LECTURE I. THE PTOLEMAIC ERA

Before I begin to lecture upon the Physical and Metaphysical schools of Alexandria, it may be better, perhaps, to define the meaning of these two epithets. Physical, we shall all agree, means that which belongs to φύσις; *natura*; nature, that which φύεται, *nascitur*, grows, by an organic life, and therefore decays again; which has a beginning, and therefore, I presume, an end. And Metaphysical means that which we learn to think of after we think of nature; that which is supernatural, in fact, having neither beginning nor end, imperishable, immovable, and eternal, which does not become, but always is. These, at least, are the wisest definitions of these two terms for us just now; for they are those which were received by the whole Alexandrian school, even by those commentators who say that Aristotle, the inventor of the term Metaphysics, named his treatise so only on account of its following in philosophic sequence his book on Physics.

But, according to these definitions, the whole history of Alexandria might be to us, from one point of view, a physical school; for Alexandria, its society and its philosophy, were born, and grew, and fed, and reached their vigour, and had their old age, their death, even as a plant or an animal has; and after they were dead and dissolved, the atoms of them formed food for new creations, entered into new organisations, just as the atoms of a dead plant or animal might do. Was Alexandria then, from beginning to end, merely a natural and physical phenomenon?

It may have been. And yet we cannot deny that Alexandria was also a metaphysical phenomenon, vast and deep enough; seeing that it held for some eighteen hundred years a population of several hundred thousand souls; each of whom, at least according to the Alexandrian philosophy, stood in a very intimate relation to those metaphysic things which are imperishable and immovable and eternal, and indeed, contained them more or less, each man, woman, and child of them in themselves; having wills, reasons, consciences, affections, relations to each other; being parents, children, helpmates, bound together by laws concerning right and wrong, and numberless other unseen and spiritual relations.

Surely such a body was not merely natural, any more than any other nation, society, or scientific school, made up of men and of the spirits, thoughts, affections of men. It, like them, was surely spiritual; and could be only living and healthy, in as far as it was in harmony with certain spiritual, unseen, and everlasting laws of God; perhaps, as certain Alexandrian philosophers would have held, in as far as it was a pattern of that ideal constitution and polity after which man was created, the city of God which is eternal in the Heavens. If so, may we not suspect of this Alexandria that it was its own fault if it became a merely physical phenomenon; and that it stooped to become a part of nature, and took its place among the things which are born to die, only by breaking the law which God had appointed for it; so fulfilling, in its own case, St. Paul's great words, that death entered into the world by sin, and that sin is the transgression of the law?

Be that as it may, there must have been metaphysic enough to be learnt in that, or any city of three hundred thousand inhabitants, even though it had never contained lecture-room or philosopher's chair, and had never heard the names of Aristotle and Plato. Metaphysic enough, indeed, to be learnt there, could we but enter into the heart of even the most brutish negro slave who ever was brought down the Nile out of the desert by Nubian merchants, to build piers and docks in whose commerce he did not share, temples whose worship he did not comprehend, libraries and theatres whose learning and civilisation were to him as much a sealed book as they were to his countryman, and fellow-slave, and only friend, the ape. There was metaphysic enough in him truly, and things eternal and immutable, though his dark-skinned descendants were three hundred years in discovering the fact, and in proving it satisfactorily to all mankind for ever. You must pardon me if I seem obscure; I cannot help looking at the question with a somewhat Alexandrian eye, and talking of the poor negro

dock-worker as certain Alexandrian philosophers would have talked, of whom I shall have to speak hereafter.

I should have been glad, therefore, had time permitted me, instead of confining myself strictly to what are now called “the physic and metaphysic schools” of Alexandria, to have tried as well as I could to make you understand how the whole vast phenomenon grew up, and supported a peculiar life of its own, for fifteen hundred years and more, and was felt to be the third, perhaps the second city of the known world, and one so important to the great world-tyrant, the Cæsar of Rome, that no Roman of distinction was ever sent there as prefect, but the Alexandrian national vanity and pride of race was allowed to the last to pet itself by having its tyrant chosen from its own people.

But, though this cannot be, we may find human elements enough in the schools of Alexandria, strictly so called, to interest us for a few evenings; for these schools were schools of men; what was discovered and taught was discovered and taught by men, and not by thinking-machines; and whether they would have been inclined to confess it or not, their own personal characters, likes and dislikes, hopes and fears, strength and weakness, beliefs and disbeliefs, determined their metaphysics and their physics for them, quite enough to enable us to feel for them as men of like passions with ourselves; and for that reason only, men whose thoughts and speculations are worthy of a moment’s attention from us. For what is really interesting to man, save men, and God, the Father of men?

In the year 331 B.C. one of the greatest intellects whose influence the world has ever felt, saw, with his eagle glance, the unrivalled advantage of the spot which is now Alexandria; and conceived the mighty project of making it the point of union of two, or rather of three worlds. In a new city, named after himself, Europe, Asia, and Africa were to meet and to hold communion. A glance at the map will show you what an ὀμφαλὸς γῆς, a centre of the world, this Alexandria is, and perhaps arouse in your minds, as it has often done in mine, the suspicion that it has not yet fulfilled its whole destiny, but may become at any time a prize for contending nations, or the centre of some world-wide empire to come. Communicating with Europe and the Levant by the Mediterranean, with India by the Red Sea, certain of boundless supplies of food from the desert-guarded valley of the Nile, to which it formed the only key, thus keeping all Egypt, as it were, for its own private farm, it was weak only on one side, that of Judea. That small strip of fertile mountain land, containing innumerable military positions from which an enemy might annoy Egypt, being, in fact, one natural chain of fortresses, was the key to Phœnicia and Syria. It was an eagle’s eyrie by the side of a pen of fowls. It must not be left defenceless for a single year. Tyre and Gaza had been taken; so no danger was to be apprehended from the seaboard: but to subdue the Judean mountaineers, a race whose past sufferings had hardened them in a dogged fanaticism of courage and endurance, would be a long and sanguinary task. It was better to make terms with them; to employ them as friendly warders of their own mountain walls.

Their very fanaticism and isolation made them sure allies. There was no fear of their fraternising with the Eastern invaders. If the country was left in their hands, they would hold it against all comers. Terms were made with them; and for several centuries they fulfilled their trust.

This I apprehend to be the explanation of that conciliatory policy of Alexander’s toward the Jews, which was pursued steadily by the Ptolemies, by Pompey, and by the Romans, as long as these same Jews continued to be endurable upon the face of the land. At least, we shall find the history of Alexandria and that of Judea inextricably united for more than three hundred years.

So arose, at the command of the great conqueror, a mighty city, around those two harbours, of which the western one only is now in use. The Pharos was then an island. It was connected with the mainland by a great mole, furnished with forts and drawbridges. On the ruins of that mole now stands the greater part of the modern city; the vast site of the ancient one is a wilderness.

But Alexander was not destined to carry out his own magnificent project. That was left for the general whom he most esteemed, and to whose personal prowess he had once owed his life; a man than whom history knows few greater, Ptolemy, the son of Lagus. He was an adventurer, the son of an adventurer, his mother a cast-off concubine of Philip of Macedon. There were those who said

that he was in reality a son of Philip himself. However, he rose at court, became a private friend of young Alexander, and at last his Somatophylax, some sort of Colonel of the Life Guards. And from thence he rose rapidly, till after his great master's death he found himself despot of Egypt.

His face, as it appears on his coins, is of the loftiest and most Jove-like type of Greek beauty.

There is a possibility about it, as about most old Greek faces, of boundless cunning; a lofty irony too, and a contemptuousness, especially about the mouth, which puts one in mind of Goethe's expression; the face, altogether, of one who knew men too well to respect them. At least, he was a man of clear enough vision. He saw what was needed in those strange times, and he went straight to the thing which he saw. It was his wisdom which perceived that the huge amorphous empire of Alexander could not be kept together, and advised its partition among the generals, taking care to obtain himself the lion's share; not in size, indeed, but in capability. He saw, too (what every man does not see), that the only way to keep what he had got was to make it better, and not worse, than he found it. His first Egyptian act was to put to death Cleomenes, Alexander's lieutenant, who had amassed vast treasures by extortion; and who was, moreover, (for Ptolemy was a prudent man) a dangerous partisan of his great enemy, Perdiccas. We do not read that he refunded the treasures: but the Egyptians surnamed him Soter, the Saviour; and on the whole he deserved the title. Instead of the wretched misrule and slavery of the conquering Persian dynasty, they had at least law and order, reviving commerce, and a system of administration, we are told (I confess to speaking here quite at second-hand), especially adapted to the peculiar caste-society, and the religious prejudices of Egypt. But Ptolemy's political genius went beyond such merely material and Warburtonian care for the conservation of body and goods of his subjects. He effected with complete success a feat which has been attempted, before and since, by very many princes and potentates, but has always, except in Ptolemy's case, proved somewhat of a failure, namely, the making a new deity. Mythology in general was in a rusty state. The old Egyptian gods had grown in his dominions very unfashionable, under the summary iconoclasm to which they had been subjected by the Monotheist Persians—the Puritans of the old world, as they have been well called. Indeed, all the dolls, and the treasure of the dolls' temples too, had been carried off by Cambyzes to Babylon. And as for the Greek gods, philosophers had sublimed them away sadly during the last century: not to mention that Alexander's Macedonians, during their wanderings over the world, had probably become rather remiss in their religious exercises, and had possibly given up mentioning the Unseen world, except for those hortatory purposes for which it used to be employed by Nelson's veterans. But, as Ptolemy felt, people (women especially) must have something wherein to believe. The "Religious Sentiment" in man must be satisfied. But, how to do it? How to find a deity who would meet the aspirations of conquerors as well as conquered—of his most irreligious Macedonians, as well as of his most religious Egyptians? It was a great problem: but Ptolemy solved it. He seems to have taken the same method which Brindley the engineer used in his perplexities, for he went to bed. And there he had a dream: How the foreign god Serapis, of Pontus (somewhere near this present hapless Sinope), appeared to him, and expressed his wish to come to Alexandria, and there try his influence on the Religious Sentiment. So Serapis was sent for, and came—at least the idol of him, and—accommodating personage!—he actually fitted. After he had been there awhile, he was found to be quite an old acquaintance—to be, in fact, the Greek Jove, and two or three other Greek gods, and also two or three Egyptian gods beside—indeed, to be no other than the bull Apis, after his death and deification. I can tell you no more. I never could find that anything more was known. You may see him among Greek and Roman statues as a young man, with a sort of high basket-shaped Persian turban on his head. But, at least, he was found so pleasant and accommodating a conscience-keeper, that he spread, with Isis, his newly-found mother, or wife, over the whole East, and even to Rome. The Consuls there—50 years B.C.—found the pair not too respectable, and pulled down their temples. But, so popular were they, in spite of their bad fame, that seven years after, the Triumvirs had to build the temples up again elsewhere; and from that time forth, Isis and Serapis,

in spite, poor things, of much persecution, were the fashionable deities of the Roman world. Surely this Ptolemy was a man of genius!

But Ptolemy had even more important work to do than making gods. He had to make men; for he had few or none ready made among his old veterans from Issus and Arbela. He had no hereditary aristocracy: and he wanted none. No aristocracy of wealth; that might grow of itself, only too fast for his despotic power. But as a despot, he must have a knot of men round him who would do his work. And here came out his deep insight into fact. It had not escaped that man, what was the secret of Greek supremacy. How had he come there? How had his great master conquered half the world? How had the little semi-barbarous mountain tribe up there in Pella, risen under Philip to be the master-race of the globe? How, indeed, had Xenophon and his Ten Thousand, how had the handfuls of Salamis and Marathon, held out triumphantly century after century, against the vast weight of the barbarian? The simple answer was: Because the Greek has mind, the barbarian mere brute force. Because mind is the lord of matter; because the Greek being the cultivated man, is the only true man; the rest are βάρβαροι, mere things, clods, tools for the wise Greeks' use, in spite of all their material phantom-strength of elephants, and treasures, and tributaries by the million. Mind was the secret of Greek power; and for that Ptolemy would work. He would have an aristocracy of intellect; he would gather round him the wise men of the world (glad enough most of them to leave that miserable Greece, where every man's life was in his hand from hour to hour), and he would develop to its highest the conception of Philip, when he made Aristotle the tutor of his son Alexander.

The consequences of that attempt were written in letters of blood, over half the world; Ptolemy would attempt it once more, with gentler results. For though he fought long, and often, and well, as Despot of Egypt, no less than as general of Alexander, he was not at heart a man of blood, and made peace the end of all his wars.

So he begins. Aristotle is gone: but in Aristotle's place Philetas the sweet singer of Cos, and Zenodotus the grammarian of Ephesus, shall educate his favourite son, and he will have a literary court, and a literary age. Demetrius Phalereus, the Admirable Crichton of his time, the last of Attic orators, statesman, philosopher, poet, warrior, and each of them in the most graceful, insinuating, courtly way, migrates to Alexandria, after having had the three hundred and sixty statues, which the Athenians had too hastily erected to his honour, as hastily pulled down again. Here was a prize for Ptolemy! The charming man became his bosom friend and fellow, even revised the laws of his kingdom, and fired him, if report says true, with a mighty thought—no less a one than the great public Library of Alexandria; the first such institution, it is said, which the world had ever seen.

So a library is begun by Soter, and organised and completed by Philadelphus; or rather two libraries, for while one part was kept at the Serapeium, that vast temple on the inland rising ground, of which, as far as we can discover, Pompey's Pillar alone remains, one column out of four hundred, the rest was in the Brucheion adjoining the Palace and the Museum. Philadelphus buys Aristotle's collection to add to the stock, and Euergetes cheats the Athenians out of the original MSS. of Æschylus, Sophocles, and Euripides, and adds largely to it by more honest methods.

Eumenes, King of Pergamus in Asia Minor, fired with emulation, commences a similar collection, and is so successful, that the reigning Ptolemy has to cut off his rival's supplies by prohibiting the exportation of papyrus; and the Pergamene books are henceforth transcribed on parchment, parchemin, Pergamene, which thus has its name to this day, from Pergamus. That collection, too, found its way at last to Alexandria. For Antony having become possessor of it by right of the stronger, gave it to Cleopatra; and it remained at Alexandria for seven hundred years. But we must not anticipate events.

Then there must be besides a Mouseion, a Temple of the Muses, with all due appliances, in a vast building adjoining the palace itself, under the very wing of royalty; and it must have porticos, wherein sages may converse; lecture-rooms, where they may display themselves at their will to their rapt scholars, each like a turkey-cock before his brood; and a large dining-hall, where they may enjoy

themselves in moderation, as befits sages, not without puns and repartees, epigrams, anagrams, and Attic salt, to be fatal, alas, to poor Diodorus the dialectician. For Stilpo, prince of sophists, having silenced him by some quibbling puzzle of logic, Ptolemy surnamed him Chronos the Slow. Poor Diodorus went home, took pen and ink, wrote a treatise on the awful nothing, and died in despair, leaving five “dialectical daughters” behind him, to be thorns in the sides of some five hapless men of Macedonia, as “emancipated women;” a class but too common in the later days of Greece, as they will always be, perhaps, in civilisations which are decaying and crumbling to pieces, leaving their members to seek in bewilderment what they are, and what bonds connect them with their fellow-beings. But to return: funds shall be provided for the Museum from the treasury; a priest of rank, appointed by royalty, shall be curator; botanical and zoological gardens shall be attached; collections of wonders made. In all things the presiding genius of Aristotle shall be worshipped; for these, like Alexander, were his pupils. Had he not mapped out all heaven and earth, things seen and unseen, with his entelechies, and energies, and dunameis, and put every created and uncreated thing henceforth into its proper place, from the ascidians and polypes of the sea to the virtues and the vices—yea, to that Great Deity and Prime Cause (which indeed was all things), *Noesis Noeseon*, “the Thought of Thoughts,” whom he discovered by irrefragable processes of logic, and in whom the philosophers believe privately, leaving Serapis to the women and the sailors? All they had to do was to follow in his steps; to take each of them a branch, of science or literature, or as many branches as one man conveniently can; and working them out on the approved methods, end in a few years, as Alexander did, by weeping on the utmost shore of creation that there are no more worlds left to conquer.

Alas! the Muses are shy and wild; and though they will haunt, like skylarks, on the bleakest northern moor as cheerfully as on the sunny hills of Greece, and rise thence singing into the heaven of heavens, yet they are hard to tempt into a gilded cage, however amusingly made and plentifully stored with comforts. Royal societies, associations of savants, and the like, are good for many things, but not for the breeding of art and genius: for they are things which cannot be bred. Such institutions are excellent for physical science, when, as among us now, physical science is going on the right method: but where, as in Alexandria, it was going on an utterly wrong method, they stereotype the errors of the age, and invest them with the prestige of authority, and produce mere Sorbonnes, and schools of pedants. To literature, too, they do some good, that is, in a literary age—an age of reflection rather than of production, of antiquarian research, criticism, imitation, when book-making has become an easy and respectable pursuit for the many who cannot dig, and are ashamed to beg. And yet, by adding that same prestige of authority, not to mention of good society and Court favour, to the popular mania for literature, they help on the growing evil, and increase the multitude of prophets who prophesy out of their own heart and have seen nothing.

And this was, it must be said, the outcome of all the Ptolemæan appliances.

In Physics they did little. In Art nothing. In Metaphysics less than nothing.

We will first examine, as the more pleasant spectacle of the two, that branch of thought in which some progress was really made, and in which the Ptolemaic schools helped forward the development of men who have become world-famous, and will remain so, I suppose, until the end of time.

Four names at once attract us: Euclid, Aristarchus, Eratosthenes, Hipparchus. Archimedes, also, should be included in the list, for he was a pupil of the Alexandrian school, having studied (if Proclus is to be trusted) in Egypt, under Conon the Samian, during the reigns of two Ptolemies, Philadelphus and Euergetes.

Of Euclid, as the founder (according to Proclus) of the Alexandrian Mathematical school, I must of course speak first. Those who wish to attain to a juster conception of the man and his work than they can do from any other source, will do well to read Professor De Morgan’s admirable article on him in “Smith’s Classical Dictionary;” which includes, also, a valuable little sketch of the rise of Geometric science, from Pythagoras and Plato, of whose school Euclid was, to the great master himself.

I shall confine myself to one observation on Euclid's genius, and on the immense influence which it exerted on after generations. It seems to me, speaking under correction, that it exerted this, because it was so complete a type of the general tendency of the Greek mind, deductive, rather than inductive; of unrivalled subtlety in obtaining results from principles, and results again from them *ad infinitum*: deficient in that sturdy moral patience which is required for the examination of facts, and which has made Britain at once a land of practical craftsmen, and of earnest scientific discoverers.

Volatile, restless, "always children longing for something new," as the Egyptian priest said of them, they were too ready to believe that they had attained laws, and then, tired with their toy, throw away those hastily assumed laws, and wander off in search of others. Gifted, beyond all the sons of men, with the most exquisite perception of form, both physical and metaphysical, they could become geometers and logicians as they became sculptors and artists; beyond that they could hardly rise. They were conscious of their power to build; and it made them ashamed to dig.

Four men only among them seem, as far as I can judge, to have had a great inductive power: Socrates and Plato in Metaphysics; Archimedes and Hipparchus in Physics. But these men ran so far counter to the national genius, that their examples were not followed. As you will hear presently, the discoveries of Archimedes and Hipparchus were allowed to remain where they were for centuries.

The Dialectic of Plato and Socrates was degraded into a mere art for making anything appear alternately true and false, and among the Megaric school, for undermining the ground of all science, and paving the way for scepticism, by denying the natural world to be the object of certain knowledge.

The only element of Plato's thought to which they clung was, as we shall find from the Neoplatonists, his physical speculations; in which, deserting his inductive method, he has fallen below himself into the popular cacoethes, and Pythagorean deductive dreams about the mysterious powers of numbers, and of the regular solids.

Such a people, when they took to studying physical science, would be, and in fact were, incapable of Chemistry, Geognosy, Comparative Anatomy, or any of that noble choir of sister sciences, which are now building up the material as well as the intellectual glory of Britain.

To Astronomy, on the other hand, the pupils of Euclid turned naturally, as to the science which required the greatest amount of their favourite geometry: but even that they were content to let pass from its inductive to its deductive stage—not as we have done now, after two centuries of inductive search for the true laws, and their final discovery by Kepler and Newton: but as soon as Hipparchus had propounded any theory which would do instead of the true laws, content there to stop their experiments, and return to their favourite work of commenting, deducing, spinning notion out of notion, *ad infinitum*.

Still, they were not all of this temper. Had they been, they would have discovered, not merely a little, but absolutely nothing. For after all, if we will consider, induction being the right path to knowledge, every man, whether he knows it or not, uses induction, more or less, by the mere fact of his having a human reason, and knowing anything at all; as M. Jourdain talked prose all his life without being aware of it.

Aristarchus is principally famous for his attempt to discover the distance of the sun as compared with that of the moon. His method was ingenious enough, but too rough for success, as it depended principally on the belief that the line bounding the bright part of the moon was an exact straight line.

The result was of course erroneous. He concluded that the sun was 18 times as far as the moon, and not, as we now know, 400; but his conclusion, like his conception of the vast extent of the sphere of the fixed stars, was far enough in advance of the popular doctrine to subject him, according to Plutarch, to a charge of impiety.

Eratosthenes, again, contributed his mite to the treasure of human science—his one mite; and yet by that he is better known than by all the volumes which he seems to have poured out, on Ethics, Chronology, Criticism on the Old Attic Comedy, and what not, spun out of his weary brain during a long life of research and meditation. They have all perished,—like ninety-nine hundredths of the

labours of that great literary age; and perhaps the world is no poorer for the loss. But one thing, which he attempted on a sound and practical philosophic method, stands, and will stand for ever. And after all, is not that enough to have lived for? to have found out one true thing, and, therefore, one imperishable thing, in one's life? If each one of us could but say when he died: "This one thing I have found out; this one thing I have proved to be possible; this one eternal fact I have rescued from Hela, the realm of the formless and unknown," how rich one such generation might make the world for ever!

But such is not the appointed method. The finders are few and far between, because the true seekers are few and far between; and a whole generation has often nothing to show for its existence but one solitary gem which some one man—often unnoticed in his time—has picked up for them, and so given them "a local habitation and a name."

Eratosthenes had heard that in Syene, in Upper Egypt, deep wells were enlightened to the bottom on the day of the summer solstice, and that vertical objects cast no shadows.

He had before suggested, as is supposed, to Ptolemy Euergetes, to make him the two great copper armillæ, or circles for determining the equinox, which stood for centuries in "that which is called the Square Porch"—probably somewhere in the Museum. By these he had calculated the obliquity of the ecliptic, closely enough to serve for a thousand years after. That was one work done.

But what had the Syene shadows to do with that? Syene must be under that ecliptic. On the edge of it. In short, just under the tropic. Now he had ascertained exactly the latitude of one place on the earth's surface. He had his known point from whence to start on a world-journey, and he would use it; he would calculate the circumference of the earth—and he did it. By observations made at Alexandria, he ascertained its latitude compared with that of Syene; and so ascertained what proportion to the whole circumference was borne by the 5000 stadia between Alexandria and Syene. He fell into an error, by supposing Alexandria and Syene to be under the same meridians of longitude: but that did not prevent his arriving at a fair rough result of 252,000 stadia—31,500 Roman miles; considerably too much; but still, before him, I suppose, none knew whether it was 10,000, or 10,000,000. The right method having once been found, nothing remained but to employ it more accurately.

One other great merit of Eratosthenes is, that he first raised Geography to the rank of a science.

His Geographica were an organic collection, the first the world had ever seen, of all the travels and books of earth-description heaped together in the Great Library, of which he was for many years the keeper. He began with a geognostic book, touched on the traces of Cataclysms and Change visible on the earth's surface; followed by two books, one a mathematical book, the other on political geography, and completed by a map—which one would like to see: but—not a trace of all remains, save a few quoted fragments—

We are such stuff
As dreams are made of.

But if Eratosthenes had hold of eternal fact and law on one point, there was a contemporary who had hold of it in more than one. I mean Archimedes; of whom, as I have said, we must speak as of an Alexandrian. It was as a mechanician, rather than as an astronomer, that he gained his reputation. The stories of his Hydraulic Screw, the Great Ship which he built for Hiero, and launched by means of machinery, his crane, his war-engines, above all his somewhat mythical arrangement of mirrors, by which he set fire to ships in the harbour—all these, like the story of his detecting the alloy in Hiero's crown, while he himself was in the bath, and running home undressed shouting εὑρηκα—all these are schoolboys' tales. To the thoughtful person it is the method of the man which constitutes his real greatness, that power of insight by which he solved the two great problems of the nature of the lever and of hydrostatic pressure, which form the basis of all static and hydrostatic science to this day. And yet on that very question of the lever the great mind of Aristotle babbles—neither sees the thing itself, nor the way towards seeing it. But since Archimedes spoke, the thing seems self-evident

to every schoolboy. There is something to me very solemn in such a fact as this. It brings us down to some of the very deepest questions of metaphysic. This mental insight of which we boast so much, what is it? Is it altogether a process of our own brain and will? If it be, why have so few the power, even among men of power, and they so seldom? If brain alone were what was wanted, what could not Aristotle have discovered? Or is it that no man can see a thing unless God shows it him? Is it that in each separate act of induction, that mysterious and transcendental process which cannot, let logicians try as they will, be expressed by any merely logical formula, Aristotelian or other—is it I say, that in each separate act of induction we do not find the law, but the law is shown to us, by Him who made the law? Bacon thought so. Of that you may find clear proof in his writings. May not Bacon be right? May it not be true that God does in science, as well as in ethics, hide things from the wise and prudent, from the proud, complete, self-contained systematiser like Aristotle, who must needs explain all things in heaven and earth by his own formulæ, and his entelechies and energies, and the rest of the notions which he has made for himself out of his own brain, and then pack each thing away in its proper niche in his great cloud-universe of conceptions? Is it that God hides things from such men many a time, and reveals them to babes, to gentle, affectionate, simple-hearted men, such as we know Archimedes to have been, who do not try to give an explanation for a fact, but feel how awful and divine it is, and wrestle reverently and stedfastly with it, as Jacob with the Angel, and will not let it go, until it bless them? Sure I am, from what I have seen of scientific men, that there is an intimate connection between the health of the moral faculties and the health of the inductive ones; and that the proud, self-conceited, and passionate man will see nothing: perhaps because nothing will be shown him.

But we must leave Archimedes for a man not perhaps so well known, but to whom we owe as much as to the great Syracusan—Hipparchus the astronomer. To his case much which I have just said applies. In him astronomic science seemed to awaken suddenly to a true inductive method, and after him to fall into its old slumber for 300 years. In the meantime Timocharis, Aristyllus, and Conon had each added their mites to the discoveries of Eratosthenes: but to Hipparchus we owe that theory of the heavens, commonly called the Ptolemaic system, which, starting from the assumption that the earth was the centre of the universe, attempted to explain the motions of the heavenly bodies by a complex system of supposed eccentrics and epicycles. This has of course now vanished before modern discoveries. But its value as a scientific attempt lies in this: that the method being a correct one, correct results were obtained, though starting from a false assumption; and Hipparchus and his successors were enabled by it to calculate and predict the changes of the heavens, in spite of their clumsy instruments, with almost as much accuracy as we do now.

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