



of the still more famous Avicenna. After a scientific pilgrimage of thirty-nine years, spent in the research of knowledge over the East, Constantine, we are told, "returned from Bagdad, a master of the language and learning of the Arabians:" he settled at Salerno, where he long practised and taught. To the lessons and writings of this great man³ may be justly ascribed the subsequent progress of medicine, not only in this, its first Christian seminary, but in the schools which branched out from that of Salerno, into all the countries of Catholic Europe. The derivation, therefore, of the modern art, from Mahometanism, through Christianity, admits not of doubt or question: and if the proper and direct effects of the Mahometan religion are apparent, in the first great revival of medical science, those of the Christian are not less so, in adopting, diffusing, and bringing to perfection, the Saracenic discoveries and improvements.

The subsequent progress of the art of healing, under the fostering care of Christianity, constitutes one of the happiest and noblest triumphs of the social influences of the Gospel. If the munificent policy of the caliphs aided the cause of science, among the Saracens, by the erection, in the chief cities, of hospitals for the reception of the sick, — the more munificent piety of the



catholic church (resuming its prescriptive monopoly of charity, since the *first* hospital was founded by a Christian Father*,) multiplied establishments of this class beyond all former precedent. The slumbering charity of Europe, suddenly awakened from that lethargy of barbarism, under which it had lain oppressed for centuries, was called into universal action, by the exigencies of the crusades, and by the unparalleled sufferings of the Christian pilgrims. Along the principal routes to Jerusalem, numerous hospitals were now raised, for the shelter of the sick and destitute: and the military orders, including in their ranks the princes and prime nobility of Christendom, were expressly founded for their safeguard and superintendence. These foreign institutions became the models for similar establishments at home: in every part of Europe, charitable foundations were endowed, for the treatment and cure of the diseases of the poor; religious societies were formed for their superintendence; Christian charity, in a word, arose as the great auxiliary of medical science; and the art which owed its restoration to the civil influences of Mahometanism, attained its perfection through the moral influences of the Gospel.

* S. Ephrem Syrus, the Deacon of Edessa. This fact is wholly omitted, even by Beckmann, who treats expressly on the subject, *Hist. of Inv.* vol. iv. pp. 467—498. However, he justly ascribes the honour of such benevolent institutions to *Christianity*. Attention is requested to the final note (O), p. 518. of this volume.

The diseases of the human frame, congregated in the European hospitals, became subjected to stricter scrutiny, and left room for broader inductions: the skill of our physicians grew with their increased practice and experience: the theory of medicine was extended and verified by the practice of anatomy, from which, a superstitious, yet laudable reverence for the dead, had deterred both the Greeks and the Arabians. It was in the schools of Italy, the immediate offshoots of that of Salerno, that our illustrious Harvey acquired that anatomical knowledge, of which, the greatest discovery recorded in the annals of medicine, that of the circulation of the blood, was the result and recompense.

In tracing the parallel influences of the Mahometan and Christian faiths, on THE REVIVAL AND PROGRESS OF PHILOSOPHY, in its several branches, the point of real importance to be determined, is, in what peculiar respects their joint agency on these more abstract studies, contributed to the advancement of the human mind. To ascertain this, it will be essential, that we consider, in the first place, the particular stage at which the two religions successively took up the study of the ancient or Greek philosophy.

The philosophy of the Greeks had obtained its true meridian, in the age of Alexander the



Great. From that period to the downfall of the western empire, notwithstanding the many important accessions which it apparently derived from the labours of its later cultivators, whether Greeks or Romans, the ancient philosophy was really on the decline. The Platonists of the Eclectic school undoubtedly raised the science of moral philosophy, in some respects, to a height unattained by, and unknown to, the greatest of their predecessors. It will be recollected, however, that, where these later sages of antiquity left behind them the paths trodden by Socrates and Plato, they walked by the guidance of a light which was not their own. Christianity had now arisen on the world; and they, who, in the pride of human wisdom, refused to worship this Sun of Righteousness, were yet contented, in silent ingratitude, to borrow warmth and illumination from its beams. The superior morality of the eclectic Platonists was, in fact, nothing more than systematic plagiarism. A pirated and mangled copy of the Gospel ethics, was their sole addition to the moral teaching of their acknowledged masters in philosophy. The natural consequences may be seen, in the early degeneracy and disappearance of the Eclectic school. Meanwhile, in a providential aspect, it discharged one most important function; for it



aided in forming the great school of the Christian fathers ; but it held absolutely no rank as an independent system ; for it added nothing to the proper philosophy of Greece.

The first step of the Arabs, in their intellectual career, was to overleap the middle term which stood thus interposed between modern and ancient learning. They almost wholly overlooked the later Platonists *, to grapple with the last great master of the Greek philosophy. In the works of Aristotle, they found precisely the food demanded by their clear, penetrating, and experimental genius. The logics and metaphysics of this great philosopher ; his exact system of ethics ; and his practical researches in natural history,—alike met and awakened corresponding qualities in the Saracenic mind. The doctrines of Aristotle, again, were not more congenial to the national intellect of the Arabians, than to the principles of their new religious belief. His philosophy identified nature with religion ; delighted in investigating the chain of causation ; and saw, in each physical effect, the demonstration of a first cause. The Arabs, ac-

* For the degree in which they cultivated the Eclectics, see Brucker, *Hist. Crit. Phil.* tom. iii. p. 154. They used them, however, chiefly as indexes to the ancients : thus, the *Isagoge* of Porphyry was translated into Arabic, to serve as a key to Aristotle.



cordingly, bent the undivided force of their genius, to the study of this master ; and, while, in consequence, they raised the peripatetic school to a celebrity which it had never reached in ancient Greece, — they so improved on it, in their inquiries into physical facts, as to lay the foundations of a new philosophical system. Aristotle and the Greeks made few experiments: their experimental reasonings, consequently, were, at best, inconclusive ; and degenerated into subtle distinctions and definitions. His Arabian pupils, on the other hand, following their native practical bias, made large and luminous experiments ; and, though fettered by their habitual reverence for the Aristotelic predicaments, their experimental reasonings, being founded on a broader induction of facts, led to solid practical conclusions. To restore the correspondence of the human mind with the best philosophy of Greece, in its best day ; and to clear a path for the advancement of that philosophy, by improving on it in its more solid and practical branch, the physics of Aristotle, — would seem, then, to have been the peculiar service rendered, to the intellectual polity of the moderns, by the influences of Mahometanism.

At the culminating point in this progress, Christian Europe received the lights of Arabian



learning. When the learning of the Saracens first diffused itself over Europe, and for some ages after, things rested seemingly stationary : at least no very palpable advances were made towards the perfecting of knowledge. The fetters of the Aristotelic predicaments remained unbroken ; or rather appeared to be multiplied and rivetted, by the endless definitions and distinctions of the schoolmen. During this intermediate process, however, under the seeming pause, there was real progress. The intellect of the European nations, which needed just such a whetstone, was sharpened by the subtleties of logical and metaphysical debate. Their taste for physical science (a pursuit peculiarly congenial to the solidity of the Gothic and German character), acquired originally in the schools of the Saracens, gradually enlarged their knowledge of facts, into the first principles of the experimental philosophy. Their superior judgment, meanwhile, imperceptibly disengaged them from the shackles of those abstract theories, which had ensnared and tied down the mercurial temper of the Arabs ; which had checked their experimental career, and held them in permanent and childish subjection to the errors of the Aristotelic system. By the genius and industry of learned churchmen and physicians, the only

scholars of the age, physical facts and experiments were now accumulated; and sublimed into philosophical principles and laws. To free the practical science of Aristotle from the thralldom of his metaphysics, and thereby to carry forward the true philosophy from the very stage at which the Arabs had stopt short, would appear, therefore, to have been the peculiar service rendered to the cause of learning, by the Christian nations of Europe. And thus, the great providential work, which the intellectual influence of Mahometanism had begun, was conducted, by the intellectual influence of Christianity, towards its last perfection.

The general character of their influences on philosophical inquiry being thus premised, I shall proceed to examine the parallel effects of the two religions, on the history of modern philosophy, in its three great branches; — logic and metaphysics, ethics, and natural or experimental philosophy.

The LOGICAL AND METAPHYSICAL SCIENCE of the Saracens, which lay at the foundation of their whole intellectual progress, had its rise directly from the influences of the Mahometan religion. In the controversies which necessarily arose with unbelievers, so called, the Koran and the Sonna were soon found to supply but feeble



weapons of defence, against the arguments of Jews and Christians. During its period of war and conquest, the victorious creed of Mahomet needed no other argument than the sword. But, in the long calm which ensued, under the house of Abbas, after the erection of Bagdad, emphatically styled "the city of peace," Mahometanism found itself exposed to a new species of trial; and was forced into an unequal combat, with adversaries clad in the impenetrable armour of truth and reason, and practised in the warfare of words. The liberal curiosity of the caliphs, first awakened by intercourse and converse with their Christian physicians*, had recently procured some Arabic translations from the Greek; including parts, if not the entire, of the works of Aristotle.† The argumentative subtleties of the Stagyrte offered the only succour, which could give promise of maintaining, for any time, the cause of the Koran, against the advocates of the Old and New Testaments. The Mahometan doctors no sooner saw, than they seized, this vantage-ground; and betook themselves, with all their national fervour, to the study of the Aristotelian logics and metaphysics.‡ The de-

* Brucker, tom. iii. p. 22.

† Ibid, tom. iii. pp. 23—29. 33—35.

‡ Ibid. tom. iii. pp. 31. 143. 152.



finitions, distinctions, and predicaments of this philosophy, were alternately applied, to cloak the nakedness and deformities of their own system of belief, and to introduce perplexity and confusion into the reasonings of their opponents.* The native acumen of the Saracens found its congenial exercise, in the conduct of these debates ; and a pursuit taken up from expediency, was carried on from inclination.

Such are the undoubted origin and history of the Arabian SCHOLASTIC THEOLOGY.†

From disputations with the Jews and Christians of the age, the professors of this new science easily and early fell into dissensions and divisions among themselves. Philosophical sects and schisms sprang up in the bosom of Mahometanism. The rival schools of the Ramists, or inquirers into the laws of practical theology, and the radicalists, or investigators of the abstract attributes of the Deity, comprized, each, a variety of subordinate denominations. Metaphysical speculations were, at once, multiplied and subtilized, by theological zeal. The controversy passed from Asia into Africa, and from Africa into Spain. The text of Aristotle, darkened by the obscure

* Brucker, tom. iii. pp. 31. 35. 53—56. 94. 132. cf. Abulfarag. Dynast. ix. p. 217.

† Ib. iii. pp. 56—59. 99.

labours of a host of lesser disputants, was successively illustrated, by the commentaries of Alkendi, Alfarabius, Alasshari, Algazel, Avenpace, Avicenna, and Averroes. The doctrines of liberty and necessity, which had agitated the early Christian church, and the ancient schools of Greek philosophy, were now brought anew into discussion, by the subdivided followers of Mahomet. From its primitive severe simplicity of belief, Mahometanism became transformed into a chaos of contradictory tenets and opinions.* Of its seventy-three sects, some diverged into scepticism and atheism, while others approximated, in a surprizing degree, to the peculiar and distinguishing doctrines of Christianity.† Meanwhile, their mutual theological hatred rose to such a height, that each party accounted the belief of the Christians or the Jews far preferable to that of its Mahometan rival; and the measure dealt to principles, extended to persons. The antagonist zealots of logical and metaphysical

* Brucker, iii. 136—142. From this inextricable confusion, the learned historian of philosophy takes just occasion to admonish those sciolists, — “ Qui Muhammedanum religionem propter simplicitatem Christianæ præferendam esse contendunt, — difficilibus disputationibus, et incertis hypothesibus, eam æque fertilem fuisse: inque eo Christianæ religioni postponendam, quòd id, quod in hac [Christiana religione] ineptientis et novaturientis ingenii humani vitium fuit, in illa [Muhammedana religione] ex legis suæ inepta indole occasionem sumsit.” Ut supr. pp. 147, 148.

† Ibid. iii. 50—53. 60. 135, 136.



distinctions, often incurred, each in their turn, the penalty of persecution. These martyrs of religious prejudice, all the while, unconsciously advanced the cause of science. The Saracenic intellect, thus continually whetted and edged by dialectic debate, acquired a force and penetration, which needed but be exercised on substantial objects, in order to lead up to the most valuable practical results. Happily for the advancement of the human mind, the facts of nature presented, and the genius of the Saracens disposed them to lay hold of, such objects. *They* first conjoined abstract science with experiment; and, by this happy union, did away the defects, and, in a degree wholly unprecedented, augmented the powers, of both. The foundation-stone of the new philosophy was, in this way, laid, by the direct influences of Mahometanism; but it was reserved for the superior influences of Christianity, to carry on the intellectual structure to its just height, and complete it in its full proportions.

The providential joint agency of the two religions, the one in giving birth, and the other consummation, to the general revival and advancement of learning, has been already traced through the principal branches of human knowledge. In no department of science, however,



is their connection, in the conduct of this great work, more direct or clear, than in the modern history of logics and metaphysics. The effects of Mahometanism on these sciences, have been seen, in the rise of the Arabian scholastic theology ; and the scholastic theology of the Arabians gave origin to the Christian schoolmen. The Spaniards first carried Aristotle, and his Arabian commentators, into France * : and the illustrious inquirers, who sought out wisdom even in the schools of Mahometan Spain, introduced the philosophy taught in these schools, into other parts of Europe. The Stagyrte, at the call of Mahometanism, had, from the commencement of the ninth century, presided with despotic sway, over the philosophy and the faith of the eastern nations : he now passed into the West, under the guidance of Christianity, to erect the throne of his mental and spiritual despotism, among the nations of catholic Europe. In their scholastic theology †, the parallel between the two religions, is, in every sense, complete ; the relation here is one not of resemblance, but of

* An interesting notice of this important fact occurs in Mr. Jacob's "Travels in Spain."

† See D'Herbelot, *Bibliothèque Orientale*, Titre *Roscha*, for the derivation of the scholastic theology of the West, from Aristotle, through Averroes, Thomas Aquinas, &c. ; and ib. Titre *Sarig*, for its derivation from the Stagyrte through Avenpace.



identity. The Ramists and Radicalists of the Saracens, have their faithful image and reflection, in the Realists and Nominalists of the Christians. Their grounds of debate might differ, but their weapons of warfare were in common: their subtleties of logical and metaphysical conflict; their distinctions, definitions, predicaments; the whole armoury, in a word, of their doctrines and disputations, are literally one and the same in character, and applied to one and the same end,—the explication of religion. Nor can this identity be matter of surprize, when it is recollected, that Aristotle, in an Arabic version, and paraphrased by Arabian commentators, was equally the supreme guide and governor of both parties. The Christian scholastics, like the Mahometan, no sooner became subdivided into hostile sects, than they fell into diverse schisms and heresies. And the nature of the Godhead, the divine attributes, the doctrines of fate, foreknowledge, and free-will, were brought once more into discussion.*

Modern atheism and scepticism may too probably be traced to the incipient tendency of

* The doctrine of *occasional causes*, in particular, as since revived by the followers of Des Cartes, and as taught by Mallebranche, M. Brucker has clearly traced for its origin, to the Saracenic philosophy. Cf. Hist. Phil. tom. iii. p. 145.



opinions entertained by some among the schoolmen; especially by the noted Peter Abelard, reputed the earliest advocate of the principles now professed by the sectarists calling themselves Unitarians. At this crisis, indeed, catholic Christianity would appear to have owed its preservation, wholly to the controlling providence of God, whereby the church had become now invested with absolute power. An ecclesiastico-political despotism, was, apparently, the only arm which could have arrested the fatal progress of unbelief, in an age when the spirit of abstract speculation was without a regulator; when metaphysics moved without the drag-chain of practical science.

In the European commonwealth, however, as before in the Mahometan world, the cause of knowledge was all the while in progress. The minds of men derived edge and acumen, from the exercises of scholastic debate. In the studies of the schools, the enterprize and enthusiasm of the Saracens were gradually engrafted on the constitutional judgment and solidity of the European mind. The fruits of this union were made signally apparent, when the labours of the learned began first to be seriously directed to the cultivation of the experimental science of the Arabians.

In this field, the scholars of the West soon



surpassed their oriental instructors. The intellectual progress of the Saracens, it has been most justly remarked, originated in the combination of mathematical, logical, and experimental science.* Christian Europe received the offspring of this union, in its infancy ; in her hands, it attained its full and perfect stature. The seeds only of the experimental philosophy were sown by Mahometanism : the grain was ripened, and the harvest reaped and gathered in, beneath the fertilizing influences of the Gospel.

The false and shallow philosophy which has presumptuously attempted to arraign the wisdom of Providence, in the several steps of this entire progress, stands triumphantly confuted and convicted, by THE RESULT.† In the Saracen empire, and in catholic Europe, the subtleties of a scholastic theology equally preceded the birth of the experimental philosophy. Can it be rationally questioned, that they prepared the way for this great discovery? In both republics, we see the experimental philosophy a common consequence

* Turner.

† “ How often may it be observed in history, as in private life, that the course of events is better directed to the end desired, than if the persons most interested in the success could themselves have ordered it ! ” *History of the Peninsular War*, vol. i. p. 610.

This golden reflection, so justly and finely applied to the seemingly untoward circumstances of a military convention, is one of general application ; and belongs, with at least equal truth and justness, to other subjects, and to other times.



of intellectual progress. Can we hesitate to refer it to the earliest term in that progress, the scholastic theology, for its common cause? In fine, — to resume our great fundamental principle, — the integral connection of the Aristotelian logics and metaphysics, in every stage of their twofold revival, with the history of the Mahometan and the Christian scholastic theology, amounts to a matter-of-fact demonstration, that the world is strictly and properly indebted, for the restoration of these sciences, with all its important consequences, to the providential influences of the two opposed religions.

Even in the time of ignorance, as the Arabs term their state before the rise of Mahomet, traces may be observed of an indigenous aptness, in the Saracen genius, for the pursuit of MORAL SCIENCE.

Among the ante-Mahometan Arabians, in every age, seeds of moral truth appear to have been embodied in sentences and aphorisms; a form of instruction proverbially congenial to the temper of the Orientals, and peculiarly cultivated by the inhabitants of the Arabian peninsula. These elementary indications of the national mind were early developed by the influence of the new religion. Not to notice, in this connection, the moral teaching of the Koran



itself, we find, in the sentences of the Caliph Ali*, a summary of principles and precepts, easily reducible, by an orderly arrangement, into a system of moral philosophy. The lights of the Greek philosophy, therefore, in the reign of Almamon, broke in upon a people strongly predisposed to the investigation of moral truth. In the ethics of Aristotle, the Saracens discovered a rule of action, in accordance with the first principles of their religious belief; unfolded with an order and arrangement, to which they had hitherto been strangers. Aristotle, accordingly, thenceforward, became their chosen preceptor in morals, as well as in metaphysical science. And, as his logic laid the foundation of the Arabian scholastic theology, his ethics furnished Mahometanism with a philosophy of practice and of life. From the period, accordingly, of their adoption of the peripatetic system, the ethical spirit of the Saracens appeared in its full lustre and vigour. The school of philosophy which now arose, reckoned some among its disciples, who, in practice no less than in theory, left altogether behind the low and relaxed morality of their creed. And the names of several are mentioned, who composed treatises on morals, of the most exalted character.†

But, what it most concerns us to notice, some

* See sect. vi.

† Brucker, tom. iii. p. 63.



of the most illustrious names in the history of Arabian learning, rank equally high in the list of practical moralists.

Thus, it is related of Al-Farabi, that, although of noble parentage, and born to a splendid inheritance, he privately forsook his native province and his father's house, that he might dedicate his life to the study of philosophy. He withdrew to Bagdad, where he formed his mind in the school of the celebrated Mesuah, the *Christian* physician and friend of Al-Raschid. Al-Farabi studied the philosophy, not of the head only, but of the heart; and the fruits of his labours were visible, in an exemplary life. The vanity of all things earthly, the baseness of ambition, wealth, and pleasure, as objects of pursuit or attraction for an immortal mind, were the lessons he loved and taught; and his principles were illustrated and ennobled by his practice. He rejected every overture, (and they were frequent and urgent,) to draw him, from his studious retirement, to the court of the Caliph: and refused, on returning to his own country, to share the ease and luxury of the parental roof, that he might give his mind and heart, without reserve, to the search after wisdom, — to the acquirement of those possessions, which cannot be taken away, and which he esteemed the only safeguard against the ills and incommodities of life. Such was the abstinence of this



great man, that, even in the depth of winter, his couch was a pallet of straw ; such his sense of the imperfection, uncertainty, and distraction of human affairs, that a philosophic poverty seemed to him the only means left, to secure the possession and enjoyment of a tranquil mind : according to his own beautiful saying, “ Barley bread, and well water, and a coarse woollen garment, with peace, are better than raptures terminating in remorse.” *

Another example of the practical study of morals among the Arabians, may be instanced in the case of the famous Avenpace : whom a kindred philosopher has characterized, as “ approaching nearest to the truth ; ” and, on the very title of whose treatise on “ The departure or withdrawal of the soul, from things earthly, to God,” is stamped the impress of a moral mind.†

But, as contemplative moralists, the palm of Mahometan ethics may deservedly be assigned to Al-Gazal‡, and to the author of the profound philosophical romance of Hai Ebn Yokdan, Ebn Thophail.

The latter, the illustrious preceptor of Averroës and Maimonides, drank deeply and enthu-

* Brucker, tom. iii. pp. 71—74.

† Ibid. iii. 92.

‡ “ He was so much honoured by his own sect, that he was called, as by his proper name, *حجة الاسلام زين الدين*, The Demonstration of Islamism, the Ornament of Religion.” Sale, *Unpublished MS.*

siastically of the ethical spirit of Aristotle. He embodied the best and purest principles of this philosopher, in his celebrated romance. The story of this elegant production (which, perhaps, prompted the conception of Beattie's "Minstrel,") represents the history of an infant left exposed to the waters of a flood, from which it was miraculously rescued: the boy is nurtured by a doe; and growing up to manhood apart from all human society, using only the inborn light of reason, Hai Ebn Yokdan gradually ascends, from the knowledge of things natural, to that of things supernatural, until he arrives at the knowledge of God himself, and of his own immortal soul; and reposes at length, in the attainment of perfect happiness, in a union with God, and in the vision of the infinite perfection of the Divine nature, seen "face to face." The originality, beauty, and moral truth, of this exquisite fable, have been warmly eulogized by the moderns. The testimony borne by Leibnitz is the most remarkable: — "This admirable volume," he exclaims, "is alone a convincing proof, that the Arabians philosophized on the Divine nature, with a sublimity no way inferior to the loftiest reaches of our best Christian philosophers themselves." *

* Brucker, tom. iii. p. 95, 96.



The moral philosophy of Al-Gazal, also imbibed in the Aristotelic school of ethics, possesses a character equally exalted and ennobling. When treating of the happiness of the soul in a future state, the meditations of this eminent moralist break forth in the following noble passage :—

“ We affirm that all utility is vile in comparison of eternal felicity ; the felicity of another life. This happiness must depend on the perfection of the soul ; which will consist of two things, — purity and ornament. To be pure, the soul must be purged from all sordid manners, and be kept from all base phantasies. In its adornment, the certainty of truth should be so depicted on it, as that divine truths may be revealed to it. The mind is a mirror, which cannot be perfect, unless the most beautiful forms are reflected in it.”

Speaking, in another place, of God, he says :—

“ He is the true and pure Being within himself ; and the origin of every other. He, therefore, is perfect, — and the most perfect. All things whatsoever have their existence from Him ; and the comparison of other beings to this Being, is as the comparison of the light of other bodies to the glory of the sun : for the sun shines by itself, and not by another illumining it. As that is the foundation of light to all lucidity, so with Him, the first Being, are the keys of all science, and

from Him proceed the wisdom and knowledge of every thinking being. He who is blessed for ever, knows all the possible and the contingent. Nothing is so small as to escape his notice. But for His comprehension, there is no comparison." From this sublime contemplation of the Deity, descending to angels and men, he writes: — "Angels are always in the contemplation of His perfections, and therefore their delight has no end. From their propinquity to the Lord of ages, their joy transcends our joy. To obey Him, to behold Him, to love Him, constitutes their glory and their felicity: — and when we shall be separated from this body by death, our enjoyment will be as perfect. That which is now hidden, will then be revealed; our happiness will continue for ever; we shall attain to the sublimest truths; and we shall be the companions of the angels in their propinquity to the PRIMÆVAL TRUE ONE, not in locality merely, but in affection and beneficence."*

To offer a single observation on these golden sentences, were a wrong done to the moral judgment of the reader: it may be more appropriate to remark, that their author lived as he taught. In the meridian of his fame, as pro-

* Turner, History of England during the Middle Ages, vol. iv. p. 447, 448.

fessor of philosophy at Bagdad, Al-Gazal unexpectedly laid down his honourable office; he drew around him the poor of the city, and distributed among them the collected emoluments of his professorship; and, clothing himself in the habit of a hermit, undertook the pilgrimage to Mecca, dedicating the remainder of his life, with exemplary piety, to the study and the duties of religion.*

The philosophy of Al-Gazal, indeed, in every period of his course, had been strenuously applied to the vindication of the Mahometan faith: he engaged largely in controversy, with both Jews and Christians; making the circle of knowledge, in all its rays, tributary to the interests and advancement of his religion. The remark may be extended to the Mahometan moralists generally, in the age of Saracenic learning: the illustration or defence of their theological belief, was the origin and end of their ethical, as well as of their metaphysical, science. In morals, no less than in metaphysics, consequences, far beyond any they contemplated, flowed from their indefatigable labours: but, in whatever point of view we contemplate the phenomena, the lights of Arabian learning are inseparable from the influences of Mahometanism.

* Brucker, tom. iii. p. 93, 94.

The subsequent agency of Christianity, as might well be anticipated, was still more conspicuous and efficacious in the developement, than that of Mahometanism had proved in the revival, of the principles of MORAL SCIENCE. Western Christendom, however, together with the writings of Aristotle, received the first rudiments of ethics, from the hands of the African and Spanish Saracens. In this first of human studies, the nearest in dignity to the knowledge of the true God, Aristotle was still the master of the fathers of European learning, and his Arabian commentators their guides. Nor was it merely by their versions and their comments, that the Saracens contributed to the restoration of ethics, as a science, in Christian Europe. Various original treatises on morals, composed by Al-Gazal, and by others of their most eminent philosophers, were, about the same period, translated, and perused, in the common learned language of Europe.

The providential character of the connection between the two religions, in their co-operation for the general diffusion of knowledge, is singularly strengthened, (a fact which must presently come under a more distinct notice,) by the intervention of an unlooked-for middle term ; by the agency of God's forsaken and apostate people, the proscribed and outcast Jews. This link may



be seen to much advantage, in tracing the early history of modern ethics. From the moment in which their attention was drawn to Arabian learning, the Jews applied themselves, with intense interest, to the moral and mystic philosophy of the Saracens. They translated into Hebrew some of their most approved and instructive treatises : as, for example, the work of Avenpace * on the withdrawal of the soul from things earthly, unto God ; and the Hai Ebn Yokdan of Ebn Thophail. Their translations from the Arabic into Latin were still more numerous ; so that to this medium seems owing, in great part, the introduction of the Mahometan ethics into Catholic Europe.

The fortunes of the philosophical romance of Ebn Thophail, may be selected as a specimen of the place occupied by Mahometanism, in the history of Christian ethics. This piece, for which the Jews always entertained the highest veneration, was repeatedly translated into Hebrew ; into which idiom it was first rendered by Rabbi Moses of Narbonne. The original happily escaped from the general wreck of Arabic literature, which ensued on the expulsion of the Moors from Spain. A copy fell into the hands

* " His ancestors were Hebrews." Sale, MS. cf. J. Leo. African. De Viris Illustr. ap. Arabes, cap. 15.



of the elder Pocock ; who, equally captivated by the moral of the fable, and by its style, assigned to his son the task of preparing and publishing it, accompanied by a Latin version. He discussed, in a learned preface, the author and argument of the book. The story of Hai Ebn Yokdan became generally known and admired on the Continent; and was soon naturalized at home. England, it has been well remarked, has ever afforded a congenial soil for the products of moral genius : from whatever climates transplanted, they here find kindred natures, and breathe kindred air. The learned Ashwell first gave to the world this beautiful Arabian fiction in an English dress. Its mystical character so recommended it, in particular, to the Society of "Friends," that, at the desire of his community, it was translated into English a second time, by George Keith. Even this slight outline of the history of a single work, may suffice, in the way of illustration, to point out the fact, and the stages, of the undoubted connection between Mahometanism and Christianity, in the modern history of ethics.

In the introductory chapter* of this work, enough has been already advanced to indicate, generally, the place held by the Arabians in the history of the EXPERIMENTAL PHILOSOPHY; and

* See Introduction, especially pp. 50—54.



to show the dependence of this prolific source of knowledge, the parent of all our great modern improvements, on the proper and peculiar influences of the Mahometan religion. It has been there correctly stated, that to "them we are indebted for the revival of natural, and for the rise of experimental philosophy."* It may here be added, that the rise of the science of experiment among the Saracens, was wholly owing to their restoration of that of physics. The object at present in view, is to apportion to Christianity and Mahometanism their rightful shares, in the invention and application of this master-key to all the sciences; by tracing briefly the leading steps of that progress, from practical experiments to experimental principles, which connects the illustrious names of Avicenna and Averroes, with the still more illustrious merits of the two Bacons and of Boyle.

The physics of Aristotle, it has been shown under a former head, were the foundation, on which the Saracens erected their school of natural philosophy. After his example, they studied the facts of nature: but, hurried on by the native enthusiasm of their genius, exercising itself in a congenial pursuit, they soon altogether outstripped their preceptor, in the extent, variety,

* Turner.



and correctness of their experiments. The discovery of the science of chemistry, and the consequent improvement of the art of medicine, supplied facilities for the enlargement of their physical knowledge, which comparatively reduced to a state of infancy, the best physical knowledge of Aristotle and of the Greeks.

The Saracens were not a people to converse long with facts, without employing them in the service of reason. It does not appear, indeed, that they formally generalized their experiments; deduced from them rules of philosophizing; or laid down systematized principles of induction. But what they omitted in form, they did in fact. They meditated, they reasoned, they acted, on their experiments. And, by the intimacy and correctness of their acquaintance with physical phenomena, they drew from them, in frequent instances, unconsciously, perhaps, to themselves, the justest philosophical conclusions.

The generic character of these sages has been drawn by the pen of Mr. Sharon Turner: what cannot be done better, and could hardly be done so well, it is but common justice to the subject to produce, in the language of a master. — “The Arab philosophers were men, who combined with an acuteness and activity of mind that has never been surpassed, all the knowledge which industry



could then attain. What they knew, they knew thoroughly; they reasoned with subtlety, but they made their knowledge the foundation of their logic. There is a clearness, a penetration, an information, and a correctness about their reasoning, which spreads a brightness over every subject they handle. To the patient investigation of the Alexandrian mathematicians, they united the active subtlety of the Grecian sophists; but poured, at the same time, from their discursive intellects, all the natural information which their chemical and mineralogical researches could then supply. They refused no labour in the acquisition of knowledge, or the discovery of truth; and it was this combination of mathematic, logical, and experimental mind, which so rapidly improved themselves, and from them has so highly exalted the intellect of Europe. They were true philosophers. They loved intellectual pursuits, from an intense feeling of their excellence. They believed the perfection of the human nature to rest in these; and they struggled, unwearied, to attain them.—They were superior to the Greeks, by combining their logic and metaphysics *with experimental philosophy*; and for the nobler religious principles which some of them infused into their reasonings.”*

* History of England during the Middle Ages, vol. iv.



It is not, however, alone from the writings of the Saracen philosophers, but from the effects, also, of those writings on their European contemporaries, that we learn to appreciate their labours at the real value; — to understand the progress which they had silently made in the philosophy of physics, from *facts* to *principles*, from *experiments* to *laws*. The greatest men do not advance greatly beyond their age; the greatest discoveries have their origin and groundwork in the previous studies and pursuits of the inventors. When, therefore, we find the true principle of the experimental philosophy, the great discovery of the moderns, unfolded in England by contemporary genius, and that genius originally formed in the school of the Saracens, there is no room left for doubt, as to the source of its inspiration.

Such is the position occupied by the celebrated Roger Bacon. He was strictly and properly an experimentalist of the Saracenic school: in his works, and especially in his *Opus Majus*, he continually adduces his Arabian masters; placing their authority on a par even with that of Aristotle. His discoveries, it follows, are an index to the true state and progress of experimental science among the Arabians. Now Friar Bacon was the undoubted, though unowned, original,



whence his great namesake drew the materials of his famous experimental system. In the *Opus Majus*, and in the *Novum Organum*, we find, again and again, the fundamental laws of this system announced; uniformly the same in substance, often in the same words. If the reader will please to consult both works, for “the general causes of ignorance,” he can hardly fail to be impressed, by the coincidence observable in the equal number, and parallel character, of the causes assigned by these two great writers.* Roger Bacon instructs us, that “experimental science lords it over the other sciences, as its handmaids; and, therefore, the whole power and propriety of speculative wisdom is especially attributed to that science.†” Lord Bacon pronounces, that “mathematics and logic ought to deport themselves as the handmaids of physics (or experimental philosophy), in place of presuming, as they do, to domineer over that science.‡—

* General causes of ignorance.

Roger Bacon.

1. *Fragilis et indignæ auctoritatis exemplum.*
2. *Consuetudinis diuturnitas.*
3. *Vulgi sensus imperiti.*
4. *Propriæ ignorantie occultatio, cum ostentatione sapientie apparentis.*

Lord Bacon.

1. *Idola tribus.*
2. *Idola specus.*
3. *Idola fori.*
4. *Idola theatri.*

† “*Scientia experimentalis imperat aliis scientiis, sicut ancillis suis,*

‡ “*Mathematica et logica, quæ ancillarum loco erga physicam*

“The rest of the sciences,” the former observes, “arrive at the discovery of their principles, by experiments; but at conclusions, by arguments formed from the principles thus experimentally discovered.”* And again:—“If we give ourselves to experiences, at the same time, particular, and complete, and certified at every point by the rules of a proper discipline, we must proceed by considerations drawn from that science, which is distinguished by the title of the experimental.” Of the experimental philosophy, the latter remarks, that “it extracts axioms from particulars, by ascending consecutively and gradually, in order that it may arrive, in the end, at the broadest generalities.”† Again, that this science

et ideo tota sapientiæ *speculativæ* proprietas
isti scientiæ specialiter attribuitur.”

Op. Maj. p. 476. ed. Jebb.

* “*Scientiæ aliæ sciunt sua principia invenire per experimenta; sed conclusiones per argumenta facta ex principis inventis.*” Op. Maj. p. 448.

“Si attendamus ad experientias *particulares*, et completas, et omnino in propria disciplina certificatas, necessarium est ire per considerationes *scientiæ experimentalis.* Ibid.

se gerere debeant,—

dominatum contra exercere præsumant.” Bacon’s Works, vol. vii. p. 204.

† “A sensu et *particularibus* ex-
citat axiomata ‡
 ascendendo continenter et gradatim,
 ut ultimo loco

perveniat ad *maxime generalia*;
 quæ via vera est, *sed intentata.*”
 Nov. Org. § 4.

‡ With Lord Bacon, *axiomata* and *principia*, are synonymous terms. See Nov. Org. § 104. p. 53.

must proceed by ascent and descent, — “by ascending first from particulars to axioms, and thence descending to practical operations.” Much closer verbal coincidences might be adduced: but in these passages we have the true germ of the Baconian philosophy; and as definitely exhibited by Roger Bacon, as by Sir Francis. Yet the concluding assertion of Lord Bacon is, — “This is the true, but *untried* method !” *

* “*Via vera est, sed intentata.*” The correctness of the unqualified assertion shall be left to the judgment of the reader, after perusal of the principle of philosophizing laid down by Friar Bacon, in his doctrine “*De secunda prerogativa scientiæ experimentalis.*” These are his memorable words: — “*Veritates magnificas in terminis aliarum scientiarum, in quas per nullam viam possunt illæ scientiæ, hæc sola scientiarum domina speculativarum potest dare, &c. Et possunt poni exempla manifesta de his; sed in istis omnibus quæ sequuntur, non oportet hominem inexpertum quærere rationem ut primo intelligat, hanc enim nunquam habebit, nisi prius habeat experientiam; unde oportet primo credulitatem fieri, donec secundo sequitur experientia, ut tertio ratio comitetur.*” Op. Maj. p. 465.

Of this *via vera*, Roger Bacon, indeed, most truly says, that “*Nec Aristoteles, nec Avicenna, in suis naturalibus, hujusmodi rerum notitiam nobis dederunt; nec Seneca, qui de eis librum composuit specialiter; sed scientia experimentalis ista certificat.*” (p. 448.) But how his illustrious relative and follower could, with the Opus Majus before him, term it *via intentata*, it might seem difficult for Lord Bacon himself satisfactorily to explain.

If by *untried*, Lord Bacon meant *not practically generalized*, he claims but what is his undeniable and undivided due, — the *developement* and *promulgation*, of the experimental system of philosophy. But is its *invention* a matter of minor interest? Or is it becoming, is it honourable in the *promulgator*, to pass over in silence the kindred merits of the *inventor*? For, if the graduated and continuous ascent, from *particulars* to *generals*, from *facts* to *inductions*, from *practical experiments* to *abstract reasonings* and *conclusions*, — if the application, in a word, of *experimental science*, as the



The expression is rendered more remarkable, by the fact, that Lord Bacon, through his whole works, makes but a single mention of his illustrious precursor, and that *not* in connection with his experimental system. The omission is not well: not to mention moral considerations, it might deservedly bring into suspicion the originality of a writer less original than Lord Bacon; but him it could not so affect, for his genius was, in every thing, supreme. The due acknowledgment, however, of his debt to Roger Bacon, must have raised, instead of lowering, his unrivalled merits. He found the philosophy of his great namesake a dead letter, and he breathed into it the breath of life. He, first, adjusted and graduated the laws of experiment; defined the just steps of the ascending and descending scales, by which the mind was to proceed,

master-key to all other sciences, as that which alone "*veritates magnificas in terminis aliarum scientiarum potest dare*,"—if this be the root and germ of the Baconian system, then is the palm of discovery an honour due, not to Sir Francis, but to Roger Bacon. So far, however, is Lord Chancellor Bacon from noticing the prior claim, that he will not allow of *any advance* having been made, before his own time and labours, on the Grecian school of philosophy! Whereas the chief, perhaps the only, difference between the illustrious relatives, was this, that Roger Bacon struck the true chord, at a period when the instrument was not yet in tune; while his more favoured disciple found the mechanism perfect, and when he struck, the harmony was every where heard and felt, and the voice of Europe responded to the sound.