CHAPTER III.


Respecting the state of science among the Andalusians, we must own in justice that the people of that country were the most ardent lovers of knowledge, as well as those who best knew how to appreciate and distinguish a learned man and an ignorant one; indeed science was so much esteemed by them that whoever had not been endowed by God with the necessary qualifications to acquire it did every thing in his power to distinguish himself, and conceal from the people his want of instruction; for an ignorant man was at all times looked upon as an object of the greatest contempt, while the learned man, on the contrary, was not only respected by all, nobles and plebeians, but was trusted and consulted on every occasion; his name was in every mouth, his power and influence had no limits, and he was preferred and distinguished in all the occasions of life.

Owing to this, rich men in Cordova, however illiterate they might be, encouraged letters, rewarded with the greatest munificence writers and poets, and spared neither trouble nor expense in forming large collections of books; so that, independently of the famous library founded by the Khalif Al-hakem, and which is said by writers worthy of credit to have contained no less than four hundred thousand volumes, there were in the capital many other libraries in the hands of wealthy individuals, where the studious could dive into the fathomless sea of knowledge, and bring up its inestimable pearls. Cordova was indeed in the opinion of every author the city in Andalus where most books were to be found, and its inhabitants were renowned for their passion for forming libraries. "To such an extent did this rage for collection increase," says Ibnu Sa'id, "that any man in power, or holding a situation under government, considered himself obliged to have a library of his own, and would spare no trouble or expense in collecting
books, merely in order that people might say,—Such a one has a very fine
library, or he possesses a unique copy of such a book, or he has a copy of such
a work in the hand-writing of such a one." Of this passion for books Al-
hadhramí has recorded the following instance:—"I resided once in Cordova for
some time, when I used to attend the book-market every day, in hopes of meeting
with a certain work which I was very anxious to procure. This I had done for
a considerable time, when on a certain day I happened to find the object of my
search, a beautiful copy, elegantly written, and illustrated with a very fine com-
mentary. I immediately bid for it, and went on increasing my bidding, but, to
my great disappointment, I was always outbid by the crier, although the price was
far superior to the value of the book. Surprised at this, I went to the crier, and
asked him to show me the individual who had thus outbid me for the book to
a sum far beyond its real value, when he pointed out to me a man, who by his
dress appeared to be a person of high rank, and to whom on approaching I said,
'May God exalt his worship the Doctor! If thou art desirous of this book I
will relinquish it, for through our mutual biddings its price has risen far above
its real value.' He replied, 'I am no Doctor, neither do I know what the
contents of the book are; but I am anxious to complete a library which I am
forming, and which will give me repute among the chiefs of the city; and as
there happens to be still a vacant place capable of holding this book, I thought
I might as well bid for it: besides, it seems to be neatly written, handsomely
bound, and in very good condition; it pleases me, and therefore I do not care
how high I bid for it, for, God be praised, my means are not scanty!'—When
I heard this," says Al-hadhramí, "I was so much vexed that I could not help
replying to him, 'Well, thou art right, means are never abundant except with
men like thee; and as the proverb says,—he gets the nut who has no teeth.'
I, who am acquainted with the contents of this book, and who know how to
appreciate its merits, am deterred from buying it, and profiting by it, through
the scantiness of my means, whilst thou, to whom the acquisition of it is a
matter of perfect indifference, art abundantly provided with money to pur-
chase it.'"

Notwithstanding the proficiency of the Andalusians in all the departments of
science, we are informed that there were no colleges in that country where the
youth might be educated and inspired with the love of science, as is the case in the
East; there seem to have been instead several professorships attached to every
mosque, and numerous professors who delivered lectures on various subjects for a
fixed salary which they received; and had it not been so, science could not have
flourished as it did, for learned men among them laboured with all their might in the
acquisition of knowledge, disregarding every other consideration or occupation from which they might have derived emolument: this is the reason why Andalus produced so many authors who reached the highest degree of superiority and eminence in the several walks of science, as we shall have occasion to prove when we review their literature. At present it will suffice to say that the Andalusians left luminous tracks in every department of science, which they cultivated with an ardour and success unparalleled among other nations, with the exception, however, of natural philosophy and astrology, two sciences which, although secretly cultivated by the higher classes, were never taught in public, owing to the prejudices of the multitude against them; for if a man of the lower classes were to hear another say, "Such a one gives lectures on natural philosophy, or is working on astrology," he would immediately call him zindik, (that is, heretic,) and the appellation might, perhaps, remain attached to the learned man's name during the whole of his life: even the length of this might in some measure depend upon his prudence or his management; since the lower classes being once ill-disposed and prejudiced against him, they would, on the least provocation, pelt him in the streets or burn his house down, before the head of the state had even been made acquainted with the offence. Sometimes the Khalif himself, in order to conciliate the good will and affection of his subjects, would order the poor man to be put to death, and a scrupulous search to be made throughout his dominions, when all works on the obnoxious sciences perished in the flames. This is even asserted to have been one of the means employed by Al-mansur to gain popularity with the lower classes during the first years of his usurpation, although, if we are to believe Al-hijari, he was himself an adept in those sciences, and worked at them secretly. But of this more will be said in the course of our work.

The reading of the Koran according to the seven different schools was, together with the science of sacred tradition, held in the greatest esteem by the Andalusians; the professions of law and theology were likewise much honoured and distinguished. As to their sect, they followed at first that of Al-aузаí'ei, as we have remarked elsewhere; but in the course of time they adopted that of Malik Ibn Ans, and knew no other, this being considered the orthodox profession in the state. However, we read in the historians of the times that people of rank or learning occasionally followed one of the others, and went so far as to dispute about their respective merits in the presence of their sovereigns, whenever these were endowed with the necessary penetration, tolerance, and love for the sciences. No title was considered so honourable as that of Faquih,—indeed at one time it became such a high and distinguished one that the Al-mulaththamun (Almoravides) gave it to their great Amir, whom they wished to extol and distinguish; and the title of
Faquih in the West was, and is even to the present day, considered as honourable as that of Kádi in the East. So it was that Kátibs, grammarians, and rhetoricians were generally honoured with that distinctive title, although they might not have gone through their degrees in the law; for, we repeat, the title of Faquih was the highest and most honourable that could be given to any man learned in grammar, rhetoric, metaphysics, theology, or jurisprudence.

Divinity and ethics were always cultivated with tolerable success, but grammar and rhetoric were carried to the highest perfection amongst them. "So great is the ardour of the Andalusians in the cultivation of these two sciences," says Ibnu Sa’íd, "and so vast their attainments, that I do not hesitate to say that there are at present, in this country, authors equal in merit and parts to the most famous grammarians and rhetoricians in the times of Khalíl and Sibauyeh, who have written works that will pass to future generations, and withstand the blows of the destructive scythe of time. The various systems or schools into which the science of grammar has been divided are by them preserved with the greatest care, and with as much attention as the different schools of divinity and jurisprudence are kept in the East. So, every literary man, whatever may be the nature of his studies, must needs be a grammarian in order that he may penetrate the subtleties of the language, and appreciate the merits of good composition; for, if he be not perfectly conversant with all the rules of grammar, it will be in vain for him to seek distinction; he will never rise in the opinion of the learned, whatever may be his proficiency in other branches of learning, unless he be well acquainted with that one; and he will be, besides, continually exposed to the venomous shafts of criticism.

"The Moslem inhabitants of Andalus being either Arabs or Músta’rabs, their language, as may well be inferred, was no other than Arabic. However, it cannot be said but that the common speech, both among the higher and the lower classes, has considerably deviated from the rules of the Arabic grammar; so that were an eastern Arab to hear the prince of our grammarians, Shalúbín, engaged in conversation with another man, he would never believe him to be the author so much consulted and valued in this country, and whose works are circulated and read both in the East and West; and were he to attend one of his lectures he would undoubtedly burst out laughing to hear the blunders he makes in speaking. It is true that people of high rank will occasionally observe the grammatical rules in their speech, especially if conversing with Arabs newly arrived from the East, but, instead of being natural, their speech then sounds heavy and affected. However, what I have stated about the language used in Andalus must be applied only to the Arabic as used in conversation, and by no
"means to their writings, for they are the most strict and rigid of men in observing
the grammatical rules in their theological writings, sermons, epistles, history,
and all sorts of literary works, whether in prose or in verse."

The Andalusians had also a hand-writing of their own; in former times they used the Eastern hand, they afterwards left it and adopted another, which, although resembling that which is generally used in Syria and other Moslem countries, was, nevertheless, distinguished by a few peculiarities. Ibnu Sa'id, treating on the subject, says, "The Andalusian hand, which originated in the East, is in my opinion without a rival in point of elegance and distinctness, and, if I may judge of the ancient writing by such specimens as I saw of it in the Korán written by Ibn Ghattús, which was preserved in a city in the eastern part of Andalus, and in other ancient copies of the Korán referred to by the learned of that country as specimens, it is a very handsome and clear hand, and what I saw was executed in a style which did much honour to the patience and dexterity of the scribes."

We find, likewise, that the Khalifs and other principal citizens of Cordova were excessively fond of listening to pleasant tales and entertaining stories, and that the art of learning these, and reciting them in public, was considered a great accomplishment among literary men, who were thus enabled to approach the presence of the Sultán, and by their wit and their humorous sallies insinuate themselves into his good graces. This was, indeed, considered to be so important a requisite, that whoever was not acquainted with a sufficient stock of entertaining tales, to recite at pleasure, was held in little estimation, and even despised in certain literary circles. Ibnul-khattáb tells us in his history of Granada of a certain Abú-l-hasan 'Ali Ibn Abí-l-halyi-l-kenání, who was a very facetious man, and knew by heart a prodigious number of stories and amusing anecdotes, which he used to repeat to his friends; his life had been one of continual adventure, and they say that he had gone through wonderful chances and changes of fortune. The stories told by this man were put down in writing by some studious men, and collected in one book, under the title of Kitábu-l-mesáleki wa-l-mahálli Jí akhbári-bni Abí-l-halyi (the book of routes and stations in the adventures of Abú-l-halyi). Abú-l-halyi died in 406 of the Hijra (A.D. 1015-16).

The Andalusians have been justly celebrated for the quickness of their answers, and that facility of repartee which puts a stop to further reply; in them wit, humour, acuteness of mind, and talents for poetry, seemed to be almost innate, so that it was not an uncommon thing to see among them uneducated youth, and even children, display those talents in a greater degree than grown up men trained in the paths of learning. It is somewhere related by a doctor, a native of Almeria, that
the Kádí Abú-l-hasan Mukhtár Ar-ro'ayní, who was renowned for his wit and great eloquence, happened once to be summoned to the presence of his sovereign, Zohayr the Scianonian, king of Almeria, who, being then occupied in administering justice in the hall of his palace, wanted to hear his opinion in a certain legal case. When Ar-ro'ayní received the summons, he hastened to obey it, and began to walk towards the palace, although at a very slow pace, and in the grave and stately manner generally used by Kádis. Zohayr's messenger, who went by his side, and who knew how impatient his master would be, advised him to make haste, and quicken his pace, but Ar-ro'ayní, disregarding his injunctions, continued to proceed at the same slow rate, so that a considerable time passed before he reached the Sultán's palace. "What ails thee, that thou hast tarried so long, O Ar-ro'ayní?" said Zohayr to him on his entering the audience-chamber. The Kádí answered nought, but retracing his steps, and going back towards the door, he there took a stick from the hands of an attendant, and lifting up with one hand the lower part of his garment, he assumed the air and put himself in the position of a man who is going to run. "What is the meaning of all that?" said the Sultán, astonished. "This means," answered Ar-ro'ayní, "that I am going to take possession of my new office, for as I was coming to thee, seeing that this thy usher urged me to quicken my pace, and make haste, it occurred to me that I might have been deprived of my place of Kádí, and appointed instead to be a "soldier in thy body-guard;," upon which Zohayr burst into a hearty laugh, and from that moment he never afterwards reprehended him for coming too late.

As Az-zahrí, a famous preacher in Seville, who was lame of one foot, was on one evening walking with a son of his, a youth, on the banks of the Guadalquivir, he saw a party of young men coming down the river in a boat, frolicking and singing. It was then near the Passover, the time when our dogmas prescribe to us to sacrifice victims and distribute their flesh to the poor, and among our friends and relations. As the boat was passing Az-zahrí, one of the party shouted to him, "How much for that lamb of thine?" meaning his son,—and Az-zahrí answered immediately, "He is not for sale." "Well, then," replied another, "what is the price of the old ram?" meaning the father; upon which Az-zahrí, without being at all disconcerted, raised his lame foot in the air, and said, "Dost thou not perceive that the animal is lame, and therefore unfit for sacrifice?"—hearing which the whole party in the boat burst into a laugh, and were impressed with admiration at the Sheikh's ready wit and good temper.

Memory is among the gifts which the Almighty poured most profusely upon the Andalusians, and their history abounds with records of poets and authors whose retentive powers were really surprising. Among others, a learned man named
Abú-l-mutawakel\textsuperscript{15} Al-haytham Ibn Ahmed Ibn Ghálib seems to have been the phoenix of his age in memory, a real prodigy in learning by heart both prose and verse. Ibnu Sa‘íd and his father Abú 'Omrán, who knew him, bear ample testimony of his extraordinary faculties. We shall let them speak: "I was once told," says Abú 'Omrán Músa Ibn Sa‘íd, "by a trustworthy person, who was present with him at an entertainment, what I am going to relate. 'I was once invited with other friends to the house of a rich citizen in Seville, where Abú-l-mutawakel was one of the party; the conversation having turned upon his extraordinary powers of memory, Abú-l-mutawakel kindly volunteered to exhibit them before the company, and proposed to do anything that was suggested to him. Then one of those present said, 'In the name of Allah, we wish thee to tell us traditions from authenticated sources.' 'Very well,' said he, 'let any one of you choose the rhyme, and I promise not to stop until you are all tired.' Upon which, one of the company having fixed upon the letter kaf, he began to recite traditions ending with a rhyme in the said letter; and, although it was early in the evening when he began, he continued throughout the whole night, and did not stop until the morning.'

"Some time after this occurrence, I happened," continues Abú 'Omrán Ibn Sa‘íd, "to meet him at the house called Dárú-l-ashrāf (the house of the Sherifs), in Seville. When I entered the room, the company were occupied in reading various works, and among others the collection of poems by Dhú-r-rummah;\textsuperscript{16} Al-haytham, who sat by the side of one of the individuals who was reading aloud to the others, went up to him and tried to snatch the book out of his hands; the reader, however, grasped it with both hands, so that Al-haytham was unable to accomplish his purpose. Then turning round to me, he said, 'O Abú 'Omrán! is it just that this man should deprive us of a book of which he does not know one single verse by heart, and that he should keep it from me who can repeat every line it contains?' When the company heard this they were much surprised; for, although they all knew Al-haytham's extraordinary powers, yet, the book having been but recently published, so as scarcely to have afforded Al-haytham sufficient time to read it, they all thought that he had said what was untrue, and therefore proceeded to put him to the test, strongly suspecting that he could not recite at any length out of it. Al-haytham said immediately, 'Let one of you take up the book and follow me;' upon which, he began to recite verse after verse in a masterly style, without forgetting either a vowel or an accent, until he reached the middle of the book, when, night being far advanced, and all of us tired, we all at once besought him to stop, which he did, and gave him our testimonials that we had never witnessed or heard of such
a wonderful memory as his, for certainly this was one of his most prodigious performances of this kind; and as the story was afterwards divulged by those who had witnessed it, Al-haytham's reputation increased, and the performance was applauded as it deserved."

Abú-l-hasan Ibn Sa'íd says, "the two preceding anecdotes I hold from my father; but I myself recollect having once seen this extraordinary man dictate extempore, and at once, to three talbes, in the following manner: to the first a kassídah, to the second a maushakah," and to the third a sajalah. Al-haytham died, no doubt, during the siege of Seville by the troops of Al-báji;¹⁸ for he once, when the city was closely besieged by the enemy, sallied out with the garrison, and was never heard of afterwards."

Another anecdote is related by Abú 'Omar At-talamankí.¹⁹ "I once entered," says he, "the city of Murcia, when the people flocked round me to hear me read the work entitled 'Wonderful stories of authors and books.'²⁰ I said to them—Here is the book, fetch a man that may read in it; and I opened the work ready for his arrival. Behold! what was my astonishment when I saw them returning with a blind man, whose name was Ibn Sídah, who began to recite it from top to bottom. Astonished at what I saw, I asked, and was informed that, although a blind man, he was gifted with so prodigious a memory that he could repeat whatever he had once heard, and that having on a former occasion listened to the reading of the said work, he now knew it quite by heart. This extraordinary man, whose entire name was Abú-l-hasan 'Alí Ibn Ahmed Ibn Sídah," was not only blind from his birth, but he was also the son of a blind man; he died at the age of sixty, in the year four hundred and one of the Hijra, and is well known as the author of the Kítábu-l-muhkami fí-l-loghatí (the book of the foundations of the language).

The love of the Andalusians for science is sufficiently proved by the numberless anecdotes with which their biographical dictionaries and literary records are known to abound. Abú Bekr Ibnu-s-sáyegh, better known by the surname of Ibn Bájeh,²² once entered the great mosque of Granada,²⁴ and found a grammarian surrounded by several youths, who were listening to his lessons. When they saw him come in, they all rose, and exclaimed, in high spirits, "What does the Faquih carry? what does he say? how will he show his love for science?" And Ibn Bájeh answered, "What I carry with me is twelve thousand dinárs, here they are under my arm:" and he produced twelve beautiful rubies, each of which was valued at one thousand dinárs. "What I say is that, valuable as these jewels are, they are still inferior in my eyes to twelve youths working as you are for the acquisition of the Arabic language. And my way of showing my love to science is by drawing
"lots among you, and giving away the best of these rubies:" and he accordingly proceeded to do it. The preceding anecdote is transcribed from the work of Abú Hayyán the grammarian.25

Al-mudhdhafer Ibn Al-afttas, King of Badajoz, was, according to the historian Ibnu-l-abbár, of all the monarchs of his time the one who showed the greatest love for science, and who rewarded the labours of the learned with the most liberal hand. So great was his knowledge in all the branches of literature, so universal his attainments in the sciences, so ardent his love of all sorts of information, that notwithstanding his reign was one of continual agitation and danger, owing to the turbulent times in which he lived, he still found leisure successfully to cultivate all the sciences, leaving behind him that immense work in fifty volumes which raised the admiration of both Eastern and Western writers; and in the composition of which Al-mudhdhafer spared neither trouble nor expense, having previously collected a rich and extensive library for the purpose. His work, indeed, which in the East is known by the title of Al-mudhdhaferí,26 from the name of its royal author, treats on universal science, being a repository of art, science, history, poetry, literature in general, proverbs, biographical information, and so forth. Al-mudhdhafer died in the year four hundred and sixty of the Hijra (A.D. 1067-8), and in the words of Ibnu Hayyán and Ibnu Bessám, two authors who have written an account of his life, he surpassed all the kings of his time in science and in learning, as well as in virtue and brilliant qualities. Our readers, moreover, must not be surprised at this, or think that we exaggerate when we say that Al-mudhdhafer’s work was composed of fifty volumes. No, it is a notorious fact, and were we to judge by other very voluminous works which are in existence, we should say that it was the fashion among the Andalusian authors to protract their works to an enormous length. We can, without going any further, quote Ibnu Hayyán’s large historical work called Al-matin,27 in sixty huge volumes, and the Kitábu-l-asná (the book of nouns) by Ahmed Ibn Ibán,28 Sáhibu-sh-shartah in Cordova, in one hundred volumes. Ibn Ibán died in three hundred and eighty-two (A.D. 992-3); we have seen in Fez some volumes of his work. Another instance of this extraordinary fecundity is recorded by Ibn Alisa’ regarding an author of the name of Abú 'Abdillah Mohammed Ibn Mu’ammar, a native of Malaga, who wrote a commentary on the Kitábu-n-nabát (book of plants) by Abú Honeyfah Ad-dinawaří,29 composed of sixty volumes. Ibn Alisa’, who knew him in five hundred and twenty-four of the Hijra (A.D. 1129-30), reports him as being then one hundred years old. We might likewise quote here the words of Ibnu Hayyán, who positively asserts that at the death of Abú Mohammed Ibn Hazm, which happened in four hundred and fifty-six (A.D. 1063-4), there were found in his
room no less than four hundred volumes of works on various subjects, such as history, poetry, jurisprudence, theology, &c. And Ibnu Hayyán adds, on the authority of Abú-l-fahl Ibn Hazm, a son of the deceased, that having calculated the sheets of paper which were taken up by his works, he found them to be eighty thousand. We could mention numerous similar instances of the fecundity and extent of Andalusian genius, but as this is a thing long since ascertained, and which needs not our confirmation, we shall leave it for the present.

The aptitude of the Andalusians for all sorts of sciences will be likewise acknowledged by every reader conversant with their history and literature. We shall not, therefore, dwell upon it; but as their inventions and improvements in the arts and sciences, and their discovery of new and untrodden paths in the regions of literature, are generally allowed materially to have increased the sources of our knowledge, we deem it in place to mention, in a few words, those illustrious men to whose labours, talents, or perspicuity, the sciences are indebted for their advance, and who are placed by their countrymen at the head of their respective faculties.

Abú-l-'abbás Kásim Ibn Firnás, the physician, was the first who made glass out of clay, and who established fabrics of it in Andalus. He passes also as the first man who introduced into that country the famous treatise on prosody by Khalīl, and who taught the science of music. He invented an instrument called al-minkālah, by means of which time was marked in music without having recourse to notes or figures. Among other very curious experiments which he made, one is his trying to fly. He covered himself with feathers for the purpose, attached a couple of wings to his body, and, getting on an eminence, flung himself down into the air, when, according to the testimony of several trustworthy writers who witnessed the performance, he flew to a considerable distance, as if he had been a bird, but in alighting again on the place whence he had started his back was very much hurt, for not knowing that birds when they alight come down upon their tails, he forgot to provide himself with one. Múmen Ibn Sa'íd has said, in a verse alluding to this extraordinary man,—

"He surpassed in velocity the flight of the ostrich, but he neglected to arm his body with the strength of the vulture." 34

The same poet has said in allusion to a certain figure of heaven which this Ibn Firnás, who was likewise a consummate astronomer, made in his house, and where the spectators fancied they saw the clouds, the stars, and the lightning, and listened to the terrific noise of thunder,—

"The heavens of Abú-l-kásim 'Abbás, the learned, will deeply impress on thy mind the extent of their perfection and beauty."
"Thou shalt hear the thunder roar, lightning will cross thy sight: nay, by Allah! the very firmament will shake to its foundations.

"But do not go underneath (the house), lest thou shouldst feel inclined, as I was, (seeing the deception,) to spit in the face of its creator."\textsuperscript{35}

The following verse is the composition of Ibn Firnás himself, who addressed it to the Amír Mohammed.\textsuperscript{36}

"I saw the Prince of the believers, Mohammed, and the flourishing star of benevolence shone bright upon his countenance."

To which Múmen replied, when he was told of it, "Yes, thou art right, but it vanished the very moment thou didst come near it; thou hast made the face of the Khalif a field where the stars flourish; ay, and a dung-hill too, for plants do not thrive without manure."

Abú 'Obeydah Moslem Ibn Ahmed,\textsuperscript{37} known by the surname of \textit{Sáhibu-l-kiblah}, because he always used to turn his face towards the East when he was saying his prayers, was consummately skilled in the science of numbers, arithmetic, astrology, jurisprudence, and the knowledge of traditions. But his principal skill was in astronomy; he was perfectly acquainted with the movement of the stars and other heavenly bodies, and their influence on the body of man. He travelled to the East, and performed his pilgrimage to Mekka, where he attended the lessons of 'Alí Ibn 'Abdi-l-'azíz; he also resided for some time in Cairo, where he learnt from Al-muzaní\textsuperscript{38} and others.

Yahya Ibn Yahya, better known by the surname of Ibnu-s-saminah,\textsuperscript{39} a native of Cordova, was versed in arithmetic, astrology, rhetoric, prosody, jurisprudence, traditions, history, scholastic controversy, and the meaning of verses; in all which sciences he laboured with the greatest success. He also travelled through the East, where he is said to have adopted and professed the religious opinions of the Mo'tazelites.

Abú-l-kásim Asbagh Ibnu-s-samh\textsuperscript{40} excelled in the science of grammar, as well as in geometry and medicine, upon which he wrote several valuable treatises. He also composed various works on geometry, such as the \textit{Kitábu-l-mad'halí fi-l-hindasati} (a key to geometry), being a commentary on Euclid, another voluminous work on the same subject, and two others on the Astrolabe; and astronomical tables according to the doctrines of the Indian school, known by the name of \textit{Sind-Hind}.\textsuperscript{41}

Abú-l-kásim As-saffár\textsuperscript{42} was also a profound geometrician; he was deeply versed in the science of numbers and astronomy, and wrote, among other works, some astronomical tables, which he composed according to the method of \textit{Sind-Hind}, and a treatise on the mode of constructing Astrolabes.
Abú Is'hák Az-zahráwí \(^{43}\) gained himself a name both as a physician and as a geometrician. He travelled to the East, and on his return to his native country published a very learned treatise on the mechanical arts, \(^{44}\) accompanied by examples and illustrations.

Abú-l-hakem 'Omar Al-karmání, \(^{45}\) an inhabitant of Cordova, acquired great celebrity in arithmetic and geometry. He travelled to the East, and resided for some time in the city of Harrán, \(^{46}\) where he frequented the schools of the learned. To him belongs the honour of having introduced into Andalus the epistles of the \(\text{Ašhabu-s-safá} \) (the sincere friends). \(^{47}\)

Abú Moslem Ibn Khaldún, \(^{48}\) one of the noblest citizens of Seville, obtained great celebrity through his knowledge of geometry, astronomy, medicine, and natural philosophy. He left a disciple, named Ibn Borghúth, \(^{49}\) who inherited his extensive knowledge in those sciences, and was, besides, very accomplished in mathematics. Ibn Borghúth left also several disciples who profited by his lessons; among whom we may reckon Abú-l-hasan Mukhtar Ar-ro'ayní, \(^{50}\) the famous geometrician and astronomer, and 'Abdullah Ibn Ahmed, of Saragossa, who gained himself a name in geometry, algebra, and astronomy.

Mohammed Al-Ieyth \(^{51}\) was commended for his knowledge in arithmetic, geometry, and the motions of the planets.

Ibn Hayyí, \(^{52}\) of Cordova, wrote on geometry and astronomy. He left Andalus in the year four hundred and forty-two of the Hijra, arrived in Egypt, where he resided for some time, and proceeded thence to Yemen, where he gained the intimacy of its sovereign, the Amír As-solayhí, \(^{53}\) the same who rose in those districts and proclaimed Al-mustanser the 'Obedite. That rebel sent him on an embassy to Baghdad, the court of the Khalif Al-káyem-biamr-illahi, which he duly fulfilled, returning to Yemen, where he died some time afterwards.

Ibnu-l-wakshí, \(^{54}\) of Toledo, excelled in geometry and logic, as well as in the construction of astronomical tables and several other branches of knowledge which it would take us too long to enumerate.

The Hafedh Abú-l-walíd Hishám Al-washkí \(^{55}\) was the most learned man of his time in geometry, in the opinions of the philosophers, \(^{56}\) grammar, rhetoric, the obscure meaning of verses, prosody, the writing of \(\text{risāleh} \), the canon and civil law, the functions of a secretary, \(^{57}\) and other departments of science, so that, as the poet has said,—

\[\text{"He had sufficient science to be thought accomplished in every department of it."}^{58}\]

The Wizír Abú-l-motref 'Abdu-r-rahmán Ibn Shahíd \(^{59}\) was profound in medicine and the natural sciences. He wrote a work on the various simples created by God,
and which are used as medicaments; and such were his patience, activity, and
talents, that he knew perfectly well the properties of every one of the simples
mentioned in his book, its strength, the degree of heat or cold which it possessed,
and its application to the cure of various diseases. This eminent man entertained
the opinion that diseases could be more effectually checked by diet than by
medicine, and that when medicine became necessary, simples were far preferable
to compound medicaments, and when these latter were required, as few drugs as
possible ought to enter into their composition. As a physician, Abú-l-motref
surpassed all his contemporaries; he performed wonders in the cure of acute
diseases and chronic affections, administering, as we have observed, as little
medicine as possible to his patients.

The science of botany was considerably advanced by the talents and exertions of
Abú 'Abdillah Ibn Ahmed, better known by the surname of Ibnu-l-beytta, and a
native of Malaga, who not only wrote numerous works in which he most scrupu-
ously and minutely described the plants already known, but examined and analyzed
many which had never been discovered before his time. Ibnu-l-beytta died
suddenly at Damascus in the year four hundred and thirty-four of the Hijra
(A.D. 1042-3), and according to some his death was occasioned by poison, which
he sucked while analyzing a plant brought to him, which he had never before
seen.

The Andalusians may safely be pronounced to have been gifted by the Al-
mighty with those shining qualities necessary to make a good poet,—quickness of
thought, great command of language, a fertile imagination, and an extensive know-
ledge of men and things. These qualities indeed were not confined to the Moslem
inhabitants of Andalus, but were also, as we shall have occasion to show hereafter,
shared by women, as well as infidels. We ought not to wonder therefore if poetry
among them has left such visible traces, especially when poets have been on all
occasions much regarded by their kings, who rewarded their merits with bounteous
gifts and large pensions. It was the custom in Andalus for the most eminent poets
at the courts of the various Sultáns to appear before them at certain festivities, and
on other great occasions, there to recite poetical compositions in praise of the
sovereign: by these means poets rarely failed in drawing upon themselves the
munificence of the monarch, who would reward them according to their merit and
their rank, unless it happened that times were calamitous, and ignorance prevailed,
although the former was more common. Many are the poems recited on these
memorable occasions which to this day excite the admiration, and provoke the
envy, of eastern poets; and the works of Al-fá'th Ibn Khakán, Abú-l-kásim Ibn
Bashkúwál, Ibnu Sa'íd, and others, who have written the lives of Andalusian
authors, abound with extracts from their poems, sufficient to impress the reader with an idea of the reach and extent of their genius, the sweet melody of their verses, and the creative powers of their imagination.

It is related of Al-merwání, Sultán of Andalus, that in a correspondence which he had with Nazár, the ‘Obeydite Sultán of Egypt, there passed between them some angry words, when Nazár wrote to Al-merwání a letter full of insults, to which the Andalusian replied in these words: "Thou hast reviled us because we are known to thee; had we been acquainted with thee in the same manner, we might have given a proper reply: farewell." They say that Nazár was extremely hurt by the answer, and never afterwards sought to quarrel with Al-merwání, who is said on a previous occasion to have written to him the following distich:

"Are we not the sons of Merwán,—that favoured family upon whom nature has poured her richest gifts, and whom fortune has loaded with her choicest favours?

"Whenever a birth occurs in our family, is not the entire earth illumined with joy at the appearance of the new-born child; do not the pulpits shake to the sound of the proclamation of his name?"

It is said of Ibn Dhí-l-wizárateyn Abí 'Amir Ibni-l-faraj, who held the appointment of Wízír to Ibnu Dhi-l-nún, King of Toledo, that feeling once indisposed he sent for a physician, who prescribed to him to drink old wine. Knowing that one of the Sultán’s pages possessed some, very old and of excellent quality, he took pen and paper and addressed him the following lines, extempore:

"Send me some of that wine as sweet as thy love, and more transparent than the tears which fall down thy cheeks.

"Send me, O my son! some of that liquor, the soul’s own sister, that I may comfort with it my debilitated stomach. I am thy servant."

The Sultán of Valencia, Merwán Ibn 'Abdí-l-'azíz, was an excellent poet. The following two verses are recorded as having been repeated extempore by him on the event of his learning that he had been deposed from his kingdom, to make room for a man his inferior in every respect.

"No wonder that a man has been found to succeed me in the government of this kingdom. ’Tis true the day will dawn for them (the subjects); but they will have no evening.

"His light will be like that of the stars in heaven, which never begin to glitter until the sun is quite gone down in the West."

Of this Merwán the historian Ibn Dih’yah has recorded many sallies of wit, among which the following is one. "I entered," says he, "the Sultán’s apartment
one day, and found him making his ablution; when he came to cleanse his beard, 
which had just then begun to whiten, he said to me—

'When I first saw these grey hairs I took them for harbingers of my ruin, 
coming to announce to the body the moment of its destruction.

'For in plants when the green turns white it is a sign of their withering 
and decay.'”

Al-mu’atassem, king of Almeria, having once received intelligence that some expressions excessively injurious to him had been introduced into a poetical composition by a poet who frequented his court, gave immediate orders for his apprehension; and after a long search made throughout his dominions, the culprit, whose name was Khalf Ibn Faraj As-samir, was secured and brought into his presence.

“I hear,” said Al-mu’atassem to him, “that thou hast been indulging thy satirical 
propensities against me. I command thee to repeat the verses in which thou hast 
made allusion to me.”—“In the name of Him who has put me under thy 
power,” replied the poet, “excuse me, for never was harm intended against 
thee.” “Speak out,” cried Al-mu’atassem impatiently. Then the poet repeated 
with a submissive voice the following two verses:

“I saw Adam in my dream, and I said to him, O father of mankind! men 
generally agree

‘That the Berbers are descended from thee. Yes, it is true, but none 
dispute that Eve was at that time divorced from me.’

“These are my expressions, O Al-mu’atassem! but thou must hear now my 
reasons for uttering them. It is well known that Ibn Balkín, the Sultán 
of Granada, thirsts after my blood, and has of late spared no trouble to get 
at my person and sacrifice me to his unjust resentment. Since I have taken 
refuge in thy dominions he has tried every means to circumvent and destroy me, 
and he has caused reports of all kinds to be brought to thy ears, in order that 
I mightst be angry with me and order my death, and thus be the instrument 
of his revenge, while all the responsibility of an unjust and tyrannical act would 
weigh upon thee.” “Well, but tell me,” said the Sultán, “those verses contain 
no personal invective against Ibn Balkín more than the opprobrium with which 
you hast charged his race. I would swear you saidst something else against 
him.”—“So I did,” answered the poet immediately; “when I saw my oppressor 
build himself a strong citadel within the precincts of Granada, I said—

‘The son of Balkín has built himself a castle; he has, like the silk-worm, 
wrapped himself up in his silk ball.’”

Al-mu’atassem then said to the poet, “If what thou tellst me be true I can
"excuse thee, and pardon thy offensive language against the Berbers. However, "I leave to thy choice whether I am to treat thee kindly, or to deliver thee into "the hands of thy enemy that he may revenge his outrage." Khalf then imme­ diately replied with these two extempore verses:

"Al-mu’atassem has given me to choose; but he knows well my inten­ tions.

"Since he has uttered the word pardon, I have no doubt he intends to "be generous, and protect me." 71

"By my soul!" exclaimed the Sultán, "thy wit is the wit of Ashittán. I "pronounce thee both safe and free." And from that moment Khalf lived at the court of Al-mu’atassem, honoured and rewarded by his sovereign, until Al-mu’a­tassem was deprived of his kingdom. 72

As the poet Abú-l-kásim As-sohaylí 73 was once sitting in his house in Malaga, news was brought to him how his native place, the town of Sohayl in the neighbour­hood, had been attacked, plundered, and set on fire, and his friends and relatives either killed or taken, by a troop of Christian marauders, who had made a foray into the heart of the Moslem territory. 74 No sooner did the intelligence reach As-sohaylí than he hired a horse and a man to take him to the spot; and when he arrived at Sohayl he alighted, and finding the place deserted he uttered extempore the following verses:

"O my country! where are thy chiefs and elders gone? Where thy in­habitants from whom I experienced so much generosity?

"To see thy deserted dwellings the sighing lover might doubt whether he "is alive, for to his greeting no salutation is returned.

"When I ask, no voice answers mine save the parting echoes; no sound "strikes the ears of the pining lover.

"The dove, it is true, sings on the lofty trees, but his mournful intonations, "caused by the loss of his consort, melt the heart of the sensitive, and make "the tears fall in copious streams.

"O my home! how cruelly fate has acted with thee; since time, that never "forgives, has spared thee in the midst of general destruction." 75

We have said elsewhere that the town of Sohayl was so called from the fact of its being the only spot in Andalus from which the constellation called Canopus could be seen. As-sohaylí was a famous poet, as may be seen in Ibn Khallekán 76 and other historians who have written an account of his life. He was known also by the surname of Abú Zeyd.

A poet from Almería was once coming down the Guadalquivir in a boat; as he came to that part of the river, near Shantobús, 77 where the stream narrows con
considerably, exhibiting on both sides clusters of pretty buildings and pleasure-gardens, with verandas looking on the river, he said, singing,—

"I am tired of the river and the boats, as well as those who look on it from Shantobús.

"Indeed, were it a paradise, I would not change it for my plantation of sweet basil at home."

No sooner had he pronounced the last words of the second verse than a girl in one of the houses close to the river put her head out of an arched window, and said to him, "From what country art thou, O singer?" and he answered, "I am from Almeria."—"And pray what is there so much to be admired which would lead thee to prefer it to the river of Seville, whose face is salt, and whose nape is scabby?"—and this is no doubt one of the most clever answers that can be imagined, since, angry at hearing him depreciate the Guadalquivir, she said ironically the contrary of what that river is famous for; it being notorious to every reader that the waters of the Guadalquivir are as sweet to the palate as those of the Nile, and that the mountains of Ar-rahmah, which form, as it were, the back of its head, are so full of fig and olive trees, and so studded with vines, that the eyes of those who visit that enchanting spot in the days of relaxation fall on nothing else but verdure. So the girl was right when she gave that answer, since Seville is far superior to Almeria in this respect.

Abú 'Amrú Ibn Sálim of Malaga says, "I was one day sitting in my room, when all of a sudden I was assailed by a violent and irresistible desire of going to Al-jebbáneh. I therefore left my house and went in the direction of that place; but scarcely had I proceeded a few steps, it being summer-time, and the weather very hot, when I felt oppressed by the heat; and, changing my mind, I returned home. Still, when I reached my house, I could not help the temptation of going out again; but this time I bent my steps towards the mosque called Rábitatu-l-Ghobár, where I met the preacher Abú Mohammed 'Abdu-l-wahháb Ibn 'Alí Al-málakí, who on my approach said to me, 'I have just this moment been beseeching God that he should bring thee to my presence; and my prayer has been granted: God Almighty be praised for it!' I then told him what had happened to me, and how I had been led by an invisible power to go out of my house. After this I sat by his side; and on his entreating me to recite him some verses, I repeated the following of an Andalusian poet:

'They stole from morning the colour of her cheeks; they borrowed from the arák tree its slender and delicate form.

Innumerable jewels shone brightly on their bosoms; and they took the glittering stars for a necklace.
Not content with the slenderness of the spear, and the agility of the antelope, they still took from the latter the tender eye and the undulating cheek-bone.

"No sooner," continues Abú 'Amrú, "had I uttered the last syllable of the latter verse, than to my great astonishment I heard 'Abdu-l-wahháb give a piercing shriek, and I saw him fall senseless on the ground. Having run to his assistance, I found him in a swoon, and it was not until an hour had elapsed that he again came to his senses: when he said to me, 'Excuse me, my son, for there are two things in this world against which I have no strength, viz. the sight of a pretty face, and the hearing of good poetry.'"

They say that Abú-l-hoseyn Suleymán Ibnu-t-taráwah, the famous grammarian and poet, from Almeria, sitting one day with some of his friends at an entertainment at his own house, there happened to be close at his side one of his most intimate friends, who, when his turn came to drink, begged to be excused, and motioned away the jar in which the liquor was presented to him. Ibnu-t-taráwah then taking the glass from him drank off its contents; and finding that it struck cold on his liver he said extempore—

"Let the Sheikh and his equals, and all those whose conduct is worthy of praise, blame me for what I have done.

"This I know, that when the young camel finds her load too heavy, she throws it on the full grown one."

We have said elsewhere that children in Andalus not unfrequently exhibited natural talents, and a facility of rhyming, which could not often be met with in people of mature age, or who had had the benefits of education. In proof of this we shall quote the following anecdotes, related by their writers. Ibn Abí-l-khissál Ash-shekúrí (from Segura) having, when still a boy, repaired to the city of Ubeda, in order to study in the schools of that place, lodged at the house of the Kádí Ibn Málík. Happening one day to go out with him to an orchard, Ibn Málík picked a bunch of black grapes, and holding it in his hand he said to Ibn Abí-l-khissál, "Look at these grapes hanging from the stalk." "Yes," answered Ibn Abí-l-khissál, in rhyme, "like the head of an Abyssinian slave." "Well said!" replied his master, who from that moment prognosticated that Ibn Abí-l-khissál would be an eloquent orator and a good poet.

It is related by Abú 'Abdillah Ibn Zarkún that Abú Bekr Ibnu-l-monkhól and Abú Bekr Al-malláh, both born at Silves, and dwelling in Salobreña, a town on the southern coast, not far from Almería, were so much attached to each other that they looked as if they were brothers. Each had a son, still young, but who had shown from infancy the greatest aptitude for science, and the most vehement desire...
of learning, so much so that, although too young yet to have their abilities improved by education, they had already given repeated proofs of their proficiency and talents by gathering the spears of preference in the hippodromes of literature. These two children were continually attacking each other with satirical remarks and witty sayings, by which means their talents for versification were exercised and improved. However, Ibnu-I-monkhol happening one day to ride out together with his son Abú 'Abdillâh, he began to reprimand him for his conduct towards his young friend, and said, "Thy continual jests and satirical traits against Ibnu-I-mallâh will, I have no doubt, damp the intimacy existing between me and his father, so pray do not attack him any longer, lest I should lose through it my friend Abú Bekr's love." "I cannot help it," replied his son, "if it is so, for it is always he who begins the fray, and I only use in my own defence the weapons of satire. The offender is always wrong, and it is but just that he should bear all the weight of evil who begins with it." When Al-monkhol heard this excuse of his son, he could not help saying, "Well, if the case between you stands as stated by thee, I exculpate and justify thee." While this conversation was thus going on between father and son, behold! they came up to a large water-pool in the middle of the road, where frogs innumerable were filling the air with their croakings. "Go on," said Ibnu-I-monkhol to his son, "the frogs are croaking in that pool." "Yes," replied his son, "and with no sweet melody, truth." "Their language was boisterous," said the father. "When they called the Bení Al-mallâh," answered the son. However, when they heard the footsteps of the travellers the frogs became silent, and a pause ensued also in the dialogue between father and son while crossing the pool. At last, Ibnu-I-monkhol said to his son, "Thou hast become mute like these frogs." "When they collected for scandal," answered his son. "There is no help for the oppressed," said the old man; "and no rain for those who want it," was the son's reply.

Certainly nobody will doubt but that this finishing of hemistichs is highly deserving of praise; had it been executed by a learned man advanced in life it would have commanded the greatest attention, but being, as it was, the work of a mere boy, it was a most wonderful performance, and well worthy of remark.

Nor were readiness of wit and poetical talents confined to the Moslems, for we find them existing among the Christians and Jews who inhabited Andalus, (may the Almighty God restore it entirely to the hands of the true believers!) For instance, a Christian named Al-maza'rí, a native of Seville, where he resided, is said to have extemporized the following verses in the act of presenting the Sultán Al-mu'atamed Ibn 'Abbád with a hunting bitch:
"I never saw a better cause of pleasure for those that are fond of sport, nor a surer source of profit for those who desire gain, than this animal full of excellent qualities; her colour might throw into the shade the brilliant hue of a yellow tunic: like a bow in her shape, and yet she darts on her prey more straight than an arrow.

If thou try her scent, she will guide thee to secret haunts abounding with game.

Nay, were she to challenge the lightning to a hunting match, she would leave it far behind in the race." 86.

These verses, and others by the same author, are recorded in the Al-mas'hab of Al-hijârî, who has therein introduced the Christian's biography.

The following verses are the composition of a Jew, of the name of Ibrâhîm Ibn Sahl Al-israyîlî, 67 who is reported to have pronounced them extempore on a slave who was ill with the jaundice:

Thou wast an honour to thy master until thou wast thus deprived of thy beauty.

For thou didst appear in the morning like a wax taper, which, when extinguished, shows a black wick." 88

There are various opinions entertained concerning this Jew; some saying that he was in heart a Moslem, others that he publicly embraced Islâm, and professed it till the day of his death, others again that he lived and died in the Jewish persuasion. Abû Hayyân, the grammarian, relates, on the authority of the Kâdi-l-kodâ Abú Bekr Mohammed Ibn Abî Nasr Al-fâ’în Al-kaysî, who had it from 'Alî the Christian, a native and inhabitant of Seville, whom he chanced to meet in Granada in one of his travels, that Ibrâhîm Ibn Sahl the poet was at first a Jew, but that towards the end of his life he was converted to Islâm, and wrote in praise of Mohammed, the messenger of the Lord, a long and elegant kassídah. "I read it once," says Abû Hayyân, "and I declare that in point of melody it is one of the most admirable poems I ever read in my life."

The same opinion is entertained by the Hâfedh Abû 'Abdillah Mohammed Ibn 'Omar Ibn Rashîd Al-fehrî, 89 who in his great itinerary entitled "the filling of the knapsack with information collected during a journey to the two holy places, Mekka and Medina," asserts positively that Ibn Sahl embraced Islâm, quoting as a proof an epistle written by 'Alî Hâmish to the preacher and ulema Sîdî Abû 'Abdillah Ibn Marzûk, 90 and which reads thus: "I have been informed by a contemporary, who was well acquainted with him, that Ibn..."