State of Medicine in Spain after the expulsion of the Arabs. By Don Garcia Suelto, M. D. of the Faculty of Madrid, late Member of the Supreme Council of Health of Spain, and Member of several Academies. Translated for this Journal by R. La Roche, M. D.

In historical researches into Spanish Medicine, the first object to the examination of which we should direct our attention, is the Medicine of the Arabs. But in order to arrive sooner at the subject of the actual state of this science in Spain, I have thought it advisable in the sketch I am about presenting, to suppress this part, which might perhaps be regarded as foreign to it, and to confine myself to what belongs exclusively to my nation.

The war carried on in Spain in order to throw off the yoke of the Arabs, and the subsequent expulsion of all the Moorish families settled in that country, seemed from all appearances well calculated to put an immediate stop to the progress of the sciences, and to occasion some impediments in the study of medicine. Nevertheless when we trace the literary history of the centuries subsequent to this period, we easily discover that our science continued to be cultivated with success—that the zeal of physicians did not diminish, and that genius and the love of the science served as substitutes for the absence of the ancient professors.

The bibliographical notice which I here offer, is a simple extract from the long list of Spaniards who have written on medicine. No branch of the healing art—none of the subordinate studies, escaped their attention—and in presenting some of the most important discoveries which we derive from them, and which others have appropriated to themselves, it will be proved that so far from neglecting the reading of their works, we may collect from them numerous and interesting facts. This perusal will render us more just—it will serve to remove prejudices injurious both to the science and to those who are the objects of them—and which originating as they do from our ignorance, are disgraceful to ourselves. Physicians are already acquainted with some of the Spanish writers, but they have never taken the trouble to enter into a critical examination of them—and have contented themselves in their investigation with the information derived from a common catalogue. Hence bibliographers have not shewn sufficient eagerness to procure printed copies of their works or to examine their manuscripts, which up to this period constitute not the least interesting part of several libraries, and more especially of the Royal library of Madrid.

It is a fact placed beyond the possibility of doubt, that soon after the expulsion of the Moors, the schools were re-established—and that they even existed before that period, and independently of any assistance from these latter. This may be learned from the expressions of the learned critic,

Peter Chacon, in his *History of the University of Salamanca.* "The physicians," says he, "who taught in it, had endeavoured to re-establish the art of medicine, which at that period was lost in all Europe, with the exception of that part of Spain occupied by the Arabs. Those physicians who understood the Arabic language, from a frequent intercourse with their neighbours the Moors, had derived from them a part of their knowledge in the science—they began to teach and practice Methodical Medicine, by establishing it on philosophical principles.".

The greater number of Spanish physicians have written in Latin, and are distinguished by the purity and elegance of their style, as well as by an intimate acquaintance with the Greek language, and a knowledge of fine literature. These acquirements are sufficient to prove that their literary education had not been neglected. We have in consequence, the translation of *Amphitrio*, and a poem on Medicine by Doctor Villalobos—the translation of the entire works of Seneca by Pinciano—of Sallust by Laguna—the interpretation of the word *acia* of Celsus, by Alphonso Nugnez—the translation of Dioscorides printed in Salamanca in 1566, &c. &c. We must in addition to these cite as specimens of good latinity, Gutierres of Toledo, whose work entitled *De regimine potus in lapidis præservatione*, appeared in 1494, and was afterwards published by himself in the Spanish language. The *Elaborationes Anatomicæ* of Nugnez de la Gerba, professor of anatomy, a title which attests the establishment, at that period, of the chairs of anatomy—the works of Laguna, of whom we shall have occasion to speak, and who possessed in an eminent degree a knowledge of the Greek language—those of Pinciano under the title of *Observationes in loca obscura aut depravata Historiæ naturalis Caii Plinii, Cum retractatiónibus locorum quorumdam Geographicæ Pomponii Melæ*, published in 1544, (this work proves that the study of natural history was not then unknown to our physicians,) and his translation of Thucydides on the plague of Athens, the precious manuscripts of which remain in the possession of my wor-

thy friend Doctor Luzuriaga. Finally we must cite also the writings of Huerta Villalobos, Estive, Sepulveda, and Gaspard Caldera de Heredia, without including numerous commentators of Hippocrates, Galen, Paulus Eginetta, Diascorides and the Arabs.

Orozco excelled in a knowledge of the Greek. At the early age of twenty-one he pointed out the errors committed by the translators and interpreters of Paulus Eginetta, and afterwards of Ætius. His *Annotationes in interpretes Aetii* were printed in 1538, and it is only to the unfortunate abandonment in our days of this learned idiom that we must attribute the want of attention paid to the work of Orozco. It is not my intention by these remarks to exaggerate the necessity of the study of the Greek language—but we must readily perceive that the most trifling error in the translation occasions very serious consequence, and disfigures the doctrine of an author. Foës, Chartier and Vanderlinden, in confounding the Greek word *fevret* with *olet*, have afforded us an example of the danger of these errors.

When we direct our attention to the medical part of Spanish literature, we readily discover that the science is under obligations to the physicians of our country for the transmission of the Hippocratic doctrine, and in general of that of all the medical patriarchs. The most remarkable among the translators and commentators in medicine are, Lopez Pinciano, the famous Valles (whose work underwent two editions in France, one in Orleans and the other in Paris in 1663,) Christopher de Vega, Rodrigo, Fonseca, Bustamente de la Paz, Vega, Juan Bravo, Alphonzo Lopez, Michel de Heredia, Antonio Zamora, Lazare de Soto, Ponce de Santa-Cruz, Jeromio Ximénez (whose writings have merited the esteem of the celebrated Barthez), and more than fifty others already too well known to necessitate here a detailed enumeration.

More than sixty others who have really illustrated the art by their writings, occupied themselves at the same time with preserving and commentating on the doctrine of the

Arabs, and particularly on that of Ebu-Sina, or Avicenna. The mos deserving of attention among them are, Diégo Lopez, Gabriel de Taraga, Jacques Lopez, Ledesma, Garcia Carrero, Perez de Herrera, and Antonio Blessa.

The catalogue of Don Nicholas Antonio alone contains more than three hundred authors who have written on the various parts of the healing art—and whose works and names have passed to posterity—namely, more than one hundred treatises on natural philosophy, mathematics, natural history and chemistry—without comprehending our numerous commentators on Aristotle—six classical works on veterinary medicine—sixteen on hygieia—twenty treating expressedly of drinks and baths—more than twenty more on the elementary institutes of medicine—eight on midwifery and the diseases of women—six on prognostics and symptoms—more than thirty on fevers, the pulse, and the urine—upwards of forty on anatomy—four on the physical education and diseases of children—upwards of sixty on diseases in general and in particular—sixteen on bleeding and purgatives—thirty on surgery—forty on the materia medica and pharmacology.

I do not include in this enumeration a considerable number of very curious monographs and miscellanies, on different points of the art. Nor shall I here present the names of all those writers, since they may be readily found in the work of Antonio, and would still form a very incomplete list. It would moreover prove to be a labour as useless, as a complete analysis of these writings would be long, and out of place in so general a sketch as the present. It will suffice to offer here a very cursory examination of a small number of the above enumerated books.

The establishment of a supreme and independent tribunal for directing the teaching, administration and exercise of medicine, dates from the happy reign of Elizabeth the catholic, from the year 1474 to 1504. This same sovereign caused the formation of the legal code of the faculty, which has subsisted even down to our days, and of which we shall speak in another place. Among the writings of Mercado,

published in the sixteenth century, we find a work which proves the progressive improvements this noble institution underwent—it is entitled *Institutiones jussu regis factæ pro Medicis in praxi examinandis ad faciendam Medicinam.* In it we find the regulations enforced in the graduation of physicians, the means resorted to in order to obviate the facility of procuring assistance from others during examinations, and to prevent the despotism or partialities of the judges. Nor does it appear less evident that the same regulations were enforced in regard to the practice of medicine, since there still remains a work, by Rodriguez de Fonseca, treating expressedly of consultations, and entitled *De consultandi ratione.*

The same Mercado who published two treatises, 1st. *De febrium essentiâ, causis, differentiis et dignotione*—2d. *De pulsûs arte et harmonia,* is undoubtedly the first who occupied himself with the description and treatment of malignant fevers. On this subject, I must direct the attention to the treatises of Christopher Diatristan de Acuna, Gaspard Bravo Ramirez, Ferdinand Cardoso, Francis Valles, Ferdinand Mena, Lazaro Gutierrez, Onofre Bruguer, Alphonzo Lopez de Corella, Bocangel, Longas, Carthagena, Caldera de Heredia, Antonio Castro, Sebastiano Soto, Rodriguez de Fonseca, and Abraham Nehemias, the greater number of which have been totally overlooked in the modern monographs of fevers. It is perfectly familiar to every one that Solano de Luques led the way to Nichell, Bordeu, Fouquet, Hunauld, &c. But one century before the publication of his *Lapis Lydius Appolineus,* there were already other treatises, the existence of which is unknown to the writers on the pulse—such are those of Antonio Ponce de Santa Cruz, of Christopher de Vega, and Alphonso Nugnez, *De pulsuum essentiâ, differentiis, cognitione, causis et prognostico.*

The appearance in Spain, in the beginning of the present century, of the disease under the name of yellow fever, elicited from the most distinguished men of the art very interesting researches. They were seen to travel in a great measure alone, in a path hitherto unknown

to them, but which had however already been clearly traced by the Spaniards. Had they been more familiar with the history of Spanish medicine, they would not have neglected to make use of the fine descriptions and important illustrations found in the writings of Antonio de Fonseca on the *plague*, on *contagious diseases*, and on the *epidemical fever* of 1621—in the treatises *De Peste*, by Laurent Brandaon and of Sebastiano Nuñez—in that of Paul Correa, entitled *De causis* et *curatione pestis*—and in the dissertation of Emmanuel de la Cerda, *contra pulverem venenosum*, printed in Milan in 1621.

The explanation of the frequent conversions of disease, appeared also to be the natural effect of the modern application of philosophy to medicine. Already however it was due to the genius of a Spaniard, Stephano Rodriguez de Castro, of whom we possess a manuscript entitled *De mutatione morborum in alios*. There exists from him a work on the same subject, the execution of which however is feeble.

It is sufficiently well known that Mead published his work on sacred medicine in the year 1749. The Spaniard Vincent Moles, however, had already published his *De morbis in sacris litteris* in 1642—and Valles, a treatise, *De iis quæ scripta sunt physice in sacris litteris, sine de sacrâ philosophiâ*, in 1595.

Anterior to those who are regarded as the first writers on the croup, and particularly before Dr. Home had published in Edinburgh, in 1765, his researches on the nature, causes and treatment of croup, or cynanche stridula, there had already appeared in Spain in 1611, a Latin treatise on the *Garrotillo* (name given in Spain to that distressing disease) by Alphonso Fontecha—and also one by Christopher Perez de Herrera, printed in Madrid in 1615, under the title of *De Morbo suffocante, vulgo Garrotillo*. Independently of these, several treatises on the same subject had appeared in the Spanish language, by P. Rotundis, Andreas Tamayo, Ferdinando Sola, Francisco Peres Cascales, Juan Soto, and Nicholas Gutierrez de Angulo.

Certain uncommon or imperfectly understood diseases had not escaped the attention of our Spanish physicians, and their talents had been exercised on several of the most curious and interesting points of philosophy. In order to be convinced of this truth, it is only necessary to examine attentively the following works: *Consultatio de Plica Polonicâ*, by Rodriguez de Fonseca, professor of the practice of medicine, printed at Frankfort in 1625, 1 vol. 12mo.—the books *De fascinatione*, by Antonio de Carthagena, and by Juan-Lazare Guttierrez—the treatises *De Mutatione Æris*, by Diego Palomino, and *De formalis præscribendi medicamenta*, by Francisco Sanchez—*Controversiæ medicæ et philosophicæ, by* Valles—*De viri et fœminæ comparandâ fecunditate*, by Gabriel de Tarraga—*De variâ rei medicæ lectione*, by Garcia Lopez—*Eliseus secundarum questionem campus*, de Gaspard de los Reyes, likewise very much esteemed for their purity of style—The *medical observations* by Valeriola—*De naturæ maliciâ ætatem superante* by Jeromio Pech—*De marsis et psyllis* by Juan Bravo—*De Signis Veneni Sumpti* by Balester—*Medical Questions* by Jeromio Ximenez—*Difficiles disputationes variæ*, and the *Consultations on complicated diseases* by Mercado—*Selectæ philosophiæ et medicinæ difficultates* by Rodriguez de Pedrosa—*Medicæ Disquisitiones* by Guttierrez Andrade—*Exercitationes de animalibus microcosmicis*, by Rodriguez de Castro, &c. &c.

Nor was the study of anatomy either neglected or limited, as many have maintained, to the doctrine of Galen alone. In support of my assertion, I shall cite among others the writings of Alphonso de Guevara, *De re Anatomicâ*—the anatomy of Francisco Salat—that of Laguna, published in Paris in 1535—of Juan Lobera d'Avila, and of Juan Alos—the *Summa Anatomica* of Juan Burgos, and P. Ximenez. It is necessary to observe, that this latter in his work printed in Valencia in 1559, styles himself the pupil of Vesalius, and dedicates to him the discovery of the third bone of the ear, which he was the first to make. He

expresses himself in the following terms: *dico Vesalio præceptori nostro—tertium illud ossiculum repertum est a me frequenter, &c. &c.*

Dr. Alderete, who in 1535 and 1536 was professor of medicine in Salamanca, must be regarded as the inventor of wax bougies for the examination and treatment of strictures of the urethra. Alderete taught this discovery to his pupil Amato Lusitano, who makes the same avowal in the fourth book, cure 19th. Amato wrote his books at Ancona in 1552 and 1553, and dedicated them to the grand commander of Portugal, don Alphonso Alencastro. He affirms, that by this means he had cured in Lisbon, an officer twenty-five years of age, and cites as his witnesses, Lewis Nunez Coimbre and George Henriques, both physicians of eminence in that city, and the astronomer Emmanuel Linda. He further affirms, that he had imparted his method to a more experienced than learned surgeon, named Philippe, the same who attended the officer, and who had requested him to undertake the treatment—that Philippe thus acquired the secret, and having gone to Rome, appropriated it to himself, by leading into error Dr. Laguna, who in his work entitled *Methodus cognoscendi extirpandique excrescentes in Vesicæ collo Caruncukas*, eulogizes that surgeon as the true inventor of the bougies. It is therefore probable, that Ambrose Pare was likewise led into a mistake in attributing this invention to the surgeons of Montpellier. Dr. Christopher Vega had announced this same remedy in 1588, in his treatise *De Curatione Caruncularum*, and we are not a little surprised to see Andréas Aleazar, a physician in all respects very learned, already on the point of making the discovery, lose sight of it, as may be learned from the following expressions contained in his work on the *internal ulcers of the urethra, which impede the passage of the urine*, (5, 25, p. 209 and 210). *Oportet ergo tùm foramine ulceris Jam satis mundificato cavam plumbeam tentam tenuem per urinarium meatum subtiliter intromitti, et indè per aliquot dies urinam excerni, ne ulceris osculus in transitu ab eâ tan-*

gatur, videlicet enim virtute et potentiâ acrimonia aglutinationem prohibet.

But the same Alcazar is not less deserving of the esteem of posterity by his other labours. In the year 1525 he had invented for the difficult operation of the trephine, several instruments more convenient and advantageous than any of those known before. The figure and plate of these may be found in his treatise *De Vulneribus Capitis*, *lib.* 1, *cap.* 16, *p.* 60, *et seq.* In this work he relates that being at Guadalaxara, the place of his nativity, the king of France, Francis I. passed through that city, accompanied by a surgeon highly distinguished and worthy the entire confidence of that monarch, and who was lodged in his house: this circumstance afforded him the opportunity of showing these instruments to this colleague, who complimented him very much, and promised, regarding them as he did, either as more perfect, or better than those made use of before, to introduce them into public notice in France on his return to that country. At the same time Louis de Lucena, natural philosopher and physician, who possessed much genius, and had aided the author in the invention of these instruments, went to Italy, where he suggested the idea of them. During the twenty years he remained in that country, having frequent intercourse with the most learned professors of surgery, (a science he was particularly fond of) he made them known. In this way their employment became almost universal. Notwithstanding which, however, Vidus Vidius claimed them thirty years after as his own invention, though without endeavouring to present them in an exact and faithful manner.

In perusing the various authors who have spoken of the venereal disease, such as Andreas de Leon, J. Almenar, Cyprien Maroxa, Lewis Ysla, Lewis Mercado, Michel Pascal and others, we are convinced that it is to the Spaniards the profession and humanity are indebted for the introduction of mercury in the treatment of that disease. This discovery has been falsely attributed to Van Helmont, and we are not a little astonished at the injustice or forgetful-

ness of those who have searched elsewhere for the historical proofs of the origin of this disease.

I shall close this bibliographical sketch with citing the writings of a Spanish lady, which undoubtedly prove that a taste for the physical sciences was pretty generally diffused throughout Spain, and that some honour was attached to their cultivation, since these studies formed also the finest ornament of the fair sex. Donna Oliva de Sabuco, born in Alcaraz, published in Madrid in the year 1588, 1st, *The New Philosophy of the Nature of Man*—2d, *Conversations on Self Knowledge, in which are introduced advices, in order that man may know his nature and the natural causes of life, and of premature and violent death*, &c.—3d, *Brief Treatise on the formation of the World*—4th, *Of those things which ameliorate this World and its different conditions*—5th, *True Medicine and true Philosophy*—6th, *Remedies of the true Medicine*—7th, *Dicta brevia circa naturam hominis et mundi antiquis occulta.* A third edition was printed at Prague in 1622.

Spanish medicine, at all the periods I have mentioned, has been particularly honoured and held in high estimation. The establishment of a special tribunal of the faculty on the same footing with the other privileged courts of justice—the formation of a penal code—the zeal displayed by the government for the promotion of the science—the great number of illustrious writers on medicine, who have always seen their labours honoured—are the most conclusive proofs of the protection and respect enjoyed by the profession. Of this, however, we may be further convinced, by reading a work by Marc Garcia, entitled "*Honour of Castilian Medicine and Surgery:*" and history offers us further proofs of this in the honours paid to Lewis Lobera d'Avila, physician to the emperor Charles the Fifth—to Lewis Mercado, chief physician of Philip the Second and Third—to Antonio de Carthagena, physician to the French princes sent to Spain as hostages for their father Francis the First—to Andree Laguna, who, descending from a distinguished family of Segovia, added to his nobility the titles of Roman Knight and Count Palatine, given him by Pope Julius the Third, who appointed

him his physician—to Antonio Ponce de Santa Cruz, president of the Medical Tribunal, who received from the king the donation of an abbey, similar to those given formerly to the princes of the blood*—to Gonzalvo de Toledo, physician to the Queen of France in 1508—to Francis Valles, &c. &c.†

As we have presented it, such is the brief sketch of the art of medicine, in Spain, in those ages succeeding the expulsion of the Arabs. I have cited but a small number of the authors who have written on that subject, besides those whose names are found in the catalogues and codes already mentioned. There are many others whose names have hitherto escaped the researches of historians. I myself had several, which however, together with all my library, I have lately lost. Dr. Franseri, a very distinguished physician, was likewise in possession of a great number. But the most scarce and complete collection is that of Dr. Luzuriaga. This physician, already very advantageously known in Europe, is at present occupied in the composition of a memoir, in which he will show that the discovery of the circulation of the blood, attributed to Harvey in 1628, belongs to the Spanish physicians who announced it in the years 1535, 1542 and 1549, and demonstrated it in the most satisfactory manner in 1551 and 1598. I shall take the earliest opportunity, as soon as this interesting work appears, of making it known. Dr. Luzuriaga had already inserted in the first volume of the transactions of the Royal Academy of Medicine of Madrid, another memoir, in which he proved that the invention of making sea water fresh, belongs exclusively to a Dr. Laguna.

In respect to the many treasures which America afforded to the medical sciences, they have not, as many have thought fit to imagine, been overlooked. I shall however reserve for a future occasion this too extensive subject, and will here content myself with pointing out to the attention of

* Don Bermudo, cousin to king Alphonso the Sixth.

† See the *Bibliotheca Hispana*, by Nicholas Antonio, already quoted in the course of this article.

critics, the Natural History of the three kingdoms of nature in Mexico, by Hernandez. It is necessary to observe that this work is not noticed in the translations and commentaries of Clusius, Rech and Linceus, the last having been printed in Rome in 1651—consequently we should consult in preference the Madrid edition of 1790, printed on the original and under the direction of D. Gomez Ortega.