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THE MEDICAL HISTORY OF CHRISTOPHER COLUMBUS,

AND THE PART TAKEN BY THE MEDICAL PROFESSION
IN THE DISCOVERY OF AMERICA.

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"Amicus Plato, sed magis amica veritas."—ARISTOTLE.

One of the most important events in the history of humanity, and perhaps second only to the birth of Christ in beneficial results, is without any species of doubt the discovery of America by the Spaniards under the leadership of Christopher Columbus. A number of times willing and unwilling visitors certainly did come before that date from the Old World to the New. In the fifth century of the Christian era, a few Buddhist missionary priests came, either directly from China to a country which they called Fusang, and known to us now as Mexico, or they first, and most probably, settled in Japan and afterwards crossed from there to the Pacific coast of America; the voyages of the Northmen in the tenth and eleventh centuries, the traditional narratives of which tell us of the deeds of the daring sailor, Eric the Red, and the discovery of Helluland, Markland, and Vinland by his famous son, Leif Ericsson; the story of the Venetian brothers, Nicolò and Antonio Zeno, the first wrecked in 1390 upon one of the Faroe Islands, his subsequent visit to Greenland and return, and the second embarking on an unsuccessful voyage of discovery in the Atlantic Ocean, about the year 1400, to verify some fishermen's reports of the existence of land a thousand miles or more to the west from the Faroe Islands; the old and often repeated rumors concerning the fancied Island of St. Brandan, which several Portuguese and Spanish captains imagined they had beheld beyond Madeira; the seemingly-truthful statement in regard to the Spanish pilot, Alonzo Sanchez de Huelva, who, sailing in 1484 (which should be 1474) "one year more or less," from the Canaries to Madeira, had been tempest-tossed by violent easterly winds upon an unknown island (the Island of Hispaniola or San Domingo), where he landed, took an altitude, and wrote an account of all he saw, and all that had occurred in the voyage; he succeeded in returning, arrived at Terceira (one of the Azores) sick and worn out, and soon after died, leaving

Columbus, who had hospitably received him in his house and nursed him, heir to his papers.

All these, and more, pre-Columbian voyages, legendary reports and fanciful descriptions of America are completely divested of true historical importance, and did not contribute a mite to our geographical knowledge or to the betterment of mankind. To speak of them as to implicate, in any sense whatsoever, that they constitute a *discovery* of America is perfectly absurd. To expatiate about them with the mental reservation of robbing Columbus of his well-earned title of discoverer of the New World is the height of folly. In 1492 the American continent was to a certain degree as unknown to the rest of the world as the nebulous inhabitants of the planet Mars are to us to-day.

On the present four hundredth anniversary of that paramount event in history, almost all classes and conditions of men have endeavored to bring forth their representatives who, in some way or another, had anything to do with it. Mariners are still singing the wonderful skill and intrepidity of their seafaring companions of the fifteenth and sixteenth centuries. The military have spoken of their famous captains, and with minute details referred to their heroic feats and glorious conquests, not always wise or even right. The clergy have told us of the first American bishops, large numbers of pious and lion-hearted missionaries, and the numberless martyrs sacrificed in our luxuriant forests. Politicians have pointed out the many examples of good, indifferent, bad, and very bad rulers, together with chieftains and leaders totally destitute of diplomatic tact. Lawyers have shown who were at that time eminent legislators, and put on record the notable judicial contests arising in consequence of the discovery of America. Physicians only have remained silent in this universal revival, when we, as a class, contributed very largely to the realization of the constant dream of a great genius, thought then by almost every one but a distinguished Italian physician and a modest Spanish village doctor to be merely a madman.

If modern anthropological science can justly boast of having made clear the intimate relations existing between the shape, volume, and minute structure of the internal organs of man and his outward manifestations, both physical and psychical, it is evident that in speaking of such a profoundly important historical figure as Christopher Columbus, an humble attempt to examine his personal appearance, temperament, physical ailments, and the cause of his untimely death may greatly help a more accurate appreciation of his mental characteristics and moral nature.

First, as to the date of his birth. This is a *veraxa questio* which it would be out of my power in the limits of this short paper to discuss. Washington Irving, relying upon the evidence of Andrés Bernaldez,

an historiographer and intimate friend of Columbus, states it to be about 1435 or 1436. Don Fernando, the Admiral's second son and his most faithful biographer, relates that in a letter written by his father to the King and Queen of Spain, dated 1501, he declares that he had then been forty years at sea, and in another letter that he was fourteen years old when he first went to sea; so that allowing a year either way for probable inattention to circumstantial details, we get the date of his birth, fixed by his own hand, at about 1447. If we take into consideration that he did not go to sea during his seven years of patient waiting in Spain,—from 1485 when for the second time he entered that country from Portugal, to 1492 when he set sail westward on the Sea of Darkness—we must then acknowledge that in referring in 1501 to his being forty years at sea, he did not probably reckon the time spent in surmounting the difficulties encountered at the court of Ferdinand and Isabella. This would bring us to 1440 as the date of his birth; but if we make a calm and philosophical analysis of the expression, "being forty years at sea," from a sailor who had the year before arrived, a prisoner in fetters, poor, sickly and dejected, from his third voyage across an unknown ocean, and bearing in mind his former unequivocal statement that he had "followed the sea for twenty-three years without being on shore any space of time worth accounting," in which period he had been to and fro upon the Mediterranean, the Grecian Archipelago, France, Flanders, the coast of Guinea, the Canary Islands, Madeira, Porto Santo, the Azores, Cape Verde Islands, England, Ireland, Iceland, and sailed a hundred leagues beyond this "Ultima Thule" of Ptolemy, we will be forced to admit that that phrase only means a sailor of forty years' experience, the same as any old professor, architect, lawyer, or physician might express himself in like circumstances regardless of the few years spent in traveling, sickness, or some temporary occupation.

The place of his birth was the city of Genoa.

From the accounts of his personal appearance given by his son Fernando, Las Casas, Andrés Bernaldez, Pietro Martire d'Anghiera, the Portuguese historian João de Barros, Agostino Giustiniani, Antonio Gallo and others who knew him well, I gather that Columbus was a man of commanding presence, tall and well built, with fair ruddy complexion somewhat freckled, oval face with rather prominent cheek bones, broad and high forehead, medium-size mouth, aquiline nose, grayish-blue eyes, very light reddish hair and beard prematurely turned gray. He was of a genial disposition, courteous and graceful, his conversation agreeable and interesting to such a point that strangers were quickly attracted and felt at ease. An indefinable air of dignified command surrounded him, and the magnetism of his noble soul was perceptible in the tender glance of his glowing eyes, when his religious enthusiasm was kindled by the divine spark of genius that abided in him. Of a great nervous susceptibility, his mind was highly imaginative and poetical. Naturally religious, he was temperate in eating and drinking and puritanical in his habits.

My search for particulars regarding the life of Columbus prior to his arrival in Portugal is far from satisfactory. From the period of his first going to sea, which was about 1460, until the year some biographers say his vessel was burned near

the Portuguese coast not far from the city of Lisbon, nowhere in history have I met with a distinct mention of his name. We have positive evidence, however, that in 1472 he was in the city of Savona, Italy, from the fact of his signature being appended as witness to the will of one Nicolo Monleone, under date of March 20 of that year. It appears very probable that in 1469 he took part, under the command of a French vice-admiral of the name of Caseneuve, in a successful sea fight to capture several Dutch ships returning from the herring fishery in the Baltic. We find him afterward in a terrible naval engagement between Lisbon and Cape St. Vincent, trying to take possession of four richly laden Venetian galleys on their return from Flanders, the desperate struggle lasting from morning till evening, the hand grenades and other burning missiles used in the battle caused at last a general conflagration among the vessels, which having been lashed together with iron grapplings, could not be separated, and the crews were compelled to leap into the water to escape the fire. Columbus' son, Fernando, goes on to say that "his father, who was a good swimmer, finding himself at the distance of two leagues from land, seized an oar, and by its aid succeeded in reaching the shore." It was close at hand to Lisbon, where he went and there made his abode. This happened in the year 1470 or early in 1471, and in 1473 he married the Portuguese lady, Philippa Moniz de Perestrelo, and went to live with her at Porto Santo, a small island on the Atlantic Ocean, twenty-five miles northeast of Madeira. There his son Diego was born in 1474.

The subject of the medical history of Columbus is a barren one, so barren indeed that it has never before been touched upon. I asked the present Duke of Veragua, and such living sterling biographers of the illustrious Genoese navigator as Mr. Henry Harrisse, Mr. José M. Asensio y Toledo, Professors John Fiske and C. K. Adams, Mr. Justin Winsor and Mr. Cesareo Fernandez Duro, and they all answered me that they did not know of anybody who had investigated the medical aspect of the life of Columbus. I consulted the librarians of the Smithsonian Institution at Washington, Lenox and Astor Libraries of New York and the Public Library of the City of Boston; I searched carefully all the old standard historical authorities, but mighty little did I find, and here it is embodied. I must, however, acknowledge my indebtedness to a recent monograph of Dr. Calatravento, of Madrid, Spain, for many things I say in this paper about the part taken by the medical profession in the discovery of America. Nearly a year of constant inquiry and exploration in this unproductive field has resulted in what I venture to call my contribution to this first Columbian Pan-American assemblage of scientific men.

The piratical character of the seafaring life of Columbus' time, and the peculiar construction of the vessels, necessarily exposed its followers to unceasing hardships, privation and many unavoidable dangers to health. The severity of this early manner of living in a man of such a well-marked sanguine temperament as that of the immortal sailor must have very insidiously tended to undermine his naturally strong constitution, after "being at sea twenty-three years without remaining on shore any space of time worth accounting," and render him liable, at the age of 46 years, to the ailments and sicknesses he

subsequently suffered during his four voyages of discovery to America; to which must be added the grief, disappointment, mental anxiety and moral depression he endured, altogether combining in the production of the chronic disease that put an end to his imperishable career at a comparatively premature period of life.

Regarding hereditary predisposition to disease, I may safely say he had none. His father died at an extreme old age (in 1496 or 1498) and his mother a few years before. He was the eldest of five children, four boys and a girl, and not one of the others showed hereditary taint. His parents belonged to the healthy, sound, hearty and frugal types of the Ligurian peasantry.

On Friday, August 3, 1492, Columbus sailed westward from the little seaport of Palos de Moguer, Spain, to plough the Sea of Darkness in quest of a New World. On Friday, October 12 of the same year, he discovered America, and also on Friday, March 15, 1493, he dropped anchor, back from his mission, at the same little harbor of Palos. He spent 225 days in this first round trip to the Western hemisphere, in which time I have found no record whatever of his having suffered any sickness, except casual references to "sore eyes." This slight and transitory ocular affection which he often experienced afterwards, I consider to have been probably due to blepharitis, or styas, or to granular ophthalmia, brought on by straining the eyes in search of land in a diaphanous atmosphere where the sun's rays of light are most intense. Perhaps the Admiral's leaning toward albinism also contributed to it. His excellent eyesight at night seems to lend weight to this opinion of mine.

He undoubtedly suffered great anxiety, tribulation and mental anguish when the crews began to murmur, and finally became openly impatient and mutinous at not finding land; but this prejudicial moral effect on his health must have been entirely extinguished by the joy, satisfaction and pride of having succeeded in his stupendous enterprise. The two shabby tricks of Martin Alonzo Pinzon, captain of the caravel *Pinta*—by far the best sailer of the three—when on the 20th of November, sailing along the coast of beautiful Cuba, he treacherously deserted his chief, and on the 12th of February he surreptitiously abandoned him again to bring the news of the discovery home first, must have also caused Columbus no little pain and dejection.

He put to sea again, on his second voyage of discovery, from Cadiz, Sept. 25, 1493; this time with a fleet of three galleons or carracks and fourteen caravels, carrying 1,500 people on board, instead of the 120 who accompanied him in his former unparalleled hazardous cruise.

This large number of men—among whom were many aristocratic young fellows, daring, supercilious, irascible and obstinate hidalgos, left without occupation at the end of the war with the Moors—were placed under the medical care of Dr. Diego Alvarez Chanca, a distinguished practitioner of great reputation of the city of Seville, who was also Physician-in-Ordinary to the King and Queen of Spain, and had attended their firstborn, Princess Isabella (who afterwards became Queen of Portugal), during her serious illness the year before. Speaking of him in a memorial addressed to Ferdinand and Isabella, dated Jan. 30, 1494, Columbus wrote: "You will

inform their Highnesses of the continual labor that Dr. Chanca has undergone, from the prodigious number of sick and the scarcity of provisions; and that, in spite of all this, he exhibits the greatest zeal and benevolence in everything that relates to his profession. As their Highnesses have intrusted me with the charge of fixing the salary that is to be paid to him while out here (although it is certain that he neither receives, nor can receive anything from any one, and does not receive anything from his position equal to what he did receive and could still get if he were in Spain, where he lived peaceably and at ease, in a very different style from what he does here), I have, nevertheless, not ventured to place to the credit of his account more than fifty thousand maravedis (about \$725) per annum, as the sum which he is to receive for yearly labor during the time of his stay in this country."

The letter or report of this learned and magnanimous man to the Chapter of Seville, from which I quote two passages further on, is the first scientific monograph written about America, and worthy of careful perusal.

On the 27th of November the fleet arrived in the harbor of La Navidad, in the Island of San Domingo, and found the little fortress completely destroyed, and each and every one of the thirty-eight men left there on the first voyage had been massacred by the native Indians. Columbus caused to be built a neat little town, to which the name of Isabella was given, and remained in this island until April 24, 1494, when he put to sea again and discovered Jamaica (May 3), and visited Cuba for the third time; returning from there he passed by all the southern coast of Jamaica and Hispaniola, and discovered the little islands of Beata, Saona and Mona.

The day after leaving this last island, in the passage between San Domingo and Porto Rico (Sept. 25, 1494), worn out with the toil and hardships of a five months' cruise among people who, though very kind and generous, could not afford him the relief and comfort he so much needed, and in which time his incessant watching, nervous excitement and high hopes of finding large quantities of gold and spices had sustained him wonderfully, the inevitable reaction at last overtook him, and his whole system suddenly collapsed. "He lay in a stupor, knowing little, remembering nothing, his eyes dim and vitality oozing, until the little fleet sorrowfully, but gladly entered the harbor of Isabella." Columbus himself acknowledges that for thirty-three days he had slept next to nothing, when he began to feel very tired and fell into a lethargical state which almost deprived him of his life. He remained sick very nearly five months, under the care of Dr. Chanca.

In the early part of April of that year he had been seized with intermittent fever at Isabella, where the same principles of heat, humidity, porosity of the soil, and presence of decaying vegetable matter which gave an extraordinary fecundity to the uncultivated fields, worked havoc among the Spaniards. Many of them are also said to have suffered at La Vega under the torments of a disease called "the scourge" (syphilis?), the origin of which, whether American or European or Asiatic, has been a subject of great dispute for over three centuries. Dr. Chanca, in his letter to the Chapter of Seville, expresses himself on the situation thus: "One-third of our people have fallen sick within the last four or five days, which I think

has principally arisen from the toil and privations of the journey, and another cause has been the variability of the climate." In another place he says: "The Admiral had at one time determined to leave the search for the mines until he had first dispatched the ships which were to return to Spain on account of the great sickness which had prevailed among the men." Does he refer here to venereal diseases? I incline to the affirmative, but in the sense of gonorrheal and not syphilitic diseases. Concerning his first statement that one-third of the colonists had fallen sick in four or five days, I firmly believe it was due to the bad quality of the provisions brought from Spain, and to malarial infection, not very well understood in those days. The miraculous *pulvis febrifugus orbis americanus* was not yet known to Europeans. The existence and wonderful virtue of "quinquina,"—which later on saved the life of Charles II, of England, Louis XIV, of France, and Friedrich the Great—were then only known to the native inhabitants of undiscovered Peru.

What was that dangerous disease from which Columbus did not entirely recover for nearly five months? Was it a disease of the nervous system? The only affections of that kind most likely to have developed are acute softening of the brain or idiopathic meningitis. But acute softening occurs always in very old persons, is apt to be preceded by mental confusion, a feeling of numbness, and some slight impairment of motion; and in idiopathic meningitis there are from the beginning an intense headache, vertigo, nausea and vomiting. These two diseases also run their courses generally in a short time, the usual termination in acute meningitis being death; cerebral softening always leaves behind permanent disorder of the mental, sensory or motor functions.

Could it have been scurvy? Decidedly no, because although scorbutus was in those days a very familiar disease among soldiers and sailors, arising from a deficiency of fresh meat or vegetable diet; and sometimes to be found also in badly ventilated, dark, and damp prisons, owing to the want of proper assimilation of food, neither insomnia, stupor, nor delirium form a part of the onset of this disease. Besides, scurvy is so slow and gradual in its development that the patients do not know when it begins.

In the absence of a clinical history of the case, let us scrutinize a little more the simple historical account of the disease. In going from Mona to Porto Rico, Columbus' fatigue and weakness and want of proper food "cast him into a dangerous disease between a pestilential fever and lethargy, which deprived him of his sense and memory." This is his own way of expressing his malady. It certainly was then one of the following three low-type fevers—typhus, typhoid, or relapsing.

We must not lose sight of the fact that he had just got over a protracted attack of paludal poisoning, which consequently left him in an anemic and debilitated condition at the time of embarking in this five months' cruise; thus offering an inviting soil for the favorable incubation of a specific, blood-disorganizing fever such as the above named ones.

Not knowing the exact bodily temperature, nor the characteristics of its daily variations (and for the best of reasons,—the clinical thermometer had not yet been invented), nothing whatever in regard to the peculiarities of the pulse, the actual condition of the skin, the tongue, the bowels, the presence or ab-

sence of eruption, epistaxis, lung symptoms, nausea or vomiting, the anomalies of the urinary excretion, etc., we can not make a good differential diagnosis between those three low, specific fevers. As a rule, we find in all of them the same symptoms of general malaise, weakness, drowsiness, at the beginning of the disease; but my opinion is, however, that it was typhus because of the prolonged convalescence, which must have been due to some pulmonary complication, partial paralysis, scurvy, dysentery, suppurative inflammation of parotid, submaxillary or inguinal glands, or more probably of the joints. There is another important circumstance which leads me to make the diagnosis of ship fever, and that is that Columbus, as a general rule, very seldom went ashore but remained on board while waiting at the different harbors, coves, anchorages, and roadsteads, thus necessarily exposing himself more to the infection than the average of his companions, whose nervous systems could not have been in such an unstrung and depressed state as his.

When Columbus recovered consciousness at Isabella, he found his dear brother Bartholomew, whom he had not seen for six years, seated by his bedside and tenderly nursing him. This happened on the 8th or 9th of October, which shows that the stupor lasted during the first two weeks of the disease—another diagnostic symptom in favor of typhus.

Early in March, 1496, the immortal navigator sailed for Spain; but he did not arrive there until June 11, having exhausted all their provisions and the famine was such that the crews came near eating up some of the thirty or more Indian captives whom they were taking to Spain. The haggard and starving party dropped anchor in the same harbor of Cadiz, from which many of them had joyously set sail with Columbus two years, eight months, and sixteen days previously.

Columbus started on his third voyage of discovery with a fleet of six ships, carrying about 200 men besides the sailors, from the little sea-port of San Lucar de Barrameda on May 30, 1498. On June 21, at the island of Ferro (the most westerly of the Canaries) the Admiral divided his fleet, sending three ships directly to Hispaniola, while with the other three he steered southwest. Prosecuting his voyage toward the Cape Verde Islands, in the last days of June, and "as he advanced within the tropics, the change of climate, and the close and sultry weather, brought on a severe attack of the gout, followed by a violent fever," says Washington Irving. On the 31st of July he discovered the Island of Trinidad, and caught a glimpse of terra firma at the delta of the Orinoco River; coming out from it through the passage which he named Dragon's Mouth (Boca del Dragon), during the second week of August, "he suffered a great deal from gout and ophthalmia," says Navarrete.

These two are the first distinct and positive historical references to Columbus suffering from gout. As for the transitory ophthalmia, I have already stated my opinion about it, only adding that it is a frequent complication of rheumatism but not of gout. Now I shall endeavor to prove that Christopher Columbus was never affected with gout, which is contrary to the firm belief of all accepted standard non-professional authorities.

Gout is more decidedly hereditary than rheumatism, and occurs in those who live high or drink

large quantities of malt liquor, or is seen in persons whose systems have been impregnated with lead. The greatest maritime genius of the fifteenth century was of too humble birth to have inherited the gouty diathesis, and too frugal in his habits to have acquired a malady the result of over-indulgence in the pleasures of the table, especially when cruising with very scanty provisions; surely there could not have been much lead in his system. Gout is characterized by the occurrence of paroxysms of severe pain in a small joint,—the great toe usually. Gout in the foot is called *podagra*; gout in the hand, *chiragra*; and gout in the knee, *gonagra*. But Columbus suffered pain in several joints, of the upper as well as the lower extremities, whose movement was slow, rigid, and jerking, so that it was accomplished with difficulty, and his disorder therefore could not very well be placed under any of these three Latin divisions of gout.

There are yet two very important diagnostic factors against the theory of gout, viz., the season of the year in which exists the greatest tendency to the occurrence of the seizures (winter), these two first attacks taking place in the middle of the summer, and moreover that we meet in the course of the distemper with no cardiac complication, at least no valvular affection, as so constantly happens in rheumatism, and which sequel was the ultimate result of the disease that launched Columbus into eternity; and furthermore, in complete possession of all his mental faculties, which does not occur in gout where the morbid changes induced in the kidneys give rise to cerebral symptoms at the time of death.

The Admiral arrived at Isabella on the 30th of August, was immediately put in irons and thrown into prison by Bobadilla, who had come from Spain a week before. While confined in prison, and deprived of intercourse with any one, loaded with fetters and chains, in the fort of the little town, he was sick for several days, probably with intermittent fever or rheumatic pains, improperly called gout. He was put on board a vessel and sent to Spain early in October, 1500, arriving at Cadiz on a December day, and as he passed, his stately and venerable figure burdened with shackles and chains, through the streets of that city, he awakened a great popular outburst of sympathy for him and indignation at his persecutors, which reproof immediately reperculated in the wealthy cities of Seville and Granada.

Fortunately the passage had been calm and fair, and of but moderate duration, rendered also less disagreeable by the kind treatment of Alonzo de Villejo, to whom he was given in custody.

While on board the ship he had written a long and eloquent letter, full of pathos, to Dona Juana de la Torre, the nurse (*ama*) of Prince Juan, a lady high in favor with Queen Isabella, to whom her brother Antonio, a fellow-voyager of Columbus, straightforwardly carried the epistle on landing. In studying the ideas and wording of this remarkable letter, I find that his reason was just beginning to lose equipoise under the strain of the great humiliation he was then enduring, and the disordered condition in which his unexpected, unwarranted, and unworthy arrest had thrown all his private affairs. This clouded state of his intellect suffered a more aggravated relapse on two or three other occasions, when in moments of despair and heartrending anguish his religious enthusiasm com-

pletely overpowered his understanding, and of which I will speak later on.

During the seventeen months elapsing between his arrival from the third voyage and his departure again on the fourth, not a word, that I know of, is said in history about Columbus being afflicted with gout, which is a strong argument against the theory of his suffering from that malady. When much better fed, in company of cavaliers and rich men, he should have had more paroxysms of that "eminently respectable disease," as Sydenham used to call it, than when living as a sailor on strange seas, short of the most necessary provisions.

The equipment of the fleet on the fourth and last voyage consisted of four small caravels with crews numbering, all told, 150 men. Columbus' brother Bartholomew, and his younger son Fernando, then a boy of fourteen, accompanied him. They sailed from Cadiz on the 11th of May, 1502, and on the 7th of November, 1504, after a tempestuous voyage and narrow escape from shipwreck, he landed back at San Lucar de Barrameda, so sick and thoroughly worn out that he could not personally go to Court to give an account of his new discoveries, but had to send in his place his youthful son, Fernando.

While sailing along the coast of Honduras, on the middle of August, 1502, there was an incessant tempest with heavy rains and such thundering and lightning that "it seemed as if the end of the world was at hand." The vessels had been so violently tossed about that their seams opened, and the provisions were damaged by the rain and by the leakage. During a great part of this time Columbus "suffered extremely from the gout, aggravated by his watchfulness and anxiety." His illness did not prevent him, however, from attending to his duties; he had a small cabin constructed on the stern of his vessel, from which, even when lying down on his bed, he could keep a lookout and direct the course of the ships. Columbus himself says that "many times he was so ill that he thought his end approaching."

The little fleet at last succeeded in passing the Cape Gracias á Dios on September 14, after struggling with the wind and the waves and the currents for about forty days. When on the coast of Veragua (Republic of Costa Rica), on the middle of October, many days of constant mental disturbance and nights of sleepless anxiety, preyed upon a constitution undermined by a slow blood poison, by grief and disappointment, by hardships, by unhygienic surroundings, and by want of proper treatment, finally producing an illusory vision, deemed by Columbus in his religious conceit of private revelation to be really God-sent and supernatural. In a letter to the sovereigns of Spain he gives a very solemn account of this hallucination, in which he heard in the course of a vivid dream a piteous voice reminding him of Scriptural passages to comfort and encourage him to trust in the Almighty. Such psychological perturbation can easily be explained if we take into consideration Columbus' highly imaginative cerebration, his exalted religious conceptions, his daily devotional exercises, and his deep-rooted belief that he was the chosen one from among men to carry the light of the true faith into far-distant, unenlightened and pagan lands. This favorable field, when well ploughed by a chronic and painful disease, and harrowed by the iron teeth of grief, could without difficulty produce a momentary phomania. Like the firm trust

of all impassioned religious or political reformers, his sublime reliance in his lofty predestination certainly served him to overcome the multitude of obstacles he found in his path. And here we find the proof once more of the undiscernible and undefinable boundary between insanity and genius.

Whilst visiting Jamaica in the latter part of June, 1503, in which island he was obliged to spend a year, Columbus suffered another attack of the so-called gout, and malarial fevers of long duration, on the shores of the harbor of Santa Gloria, known to-day as St. Anne's Bay, which rendered him a cripple.

During all this fourth voyage his mental and physical condition was very much weakened, though hope, to be sure, had not altogether departed from his ardent and sanguine nature; but it was a hope that had experienced many reverses, and its pinions were sorely clipped. His voyages of discovery always involved hardships enough to wear out the strongest human frame, having to navigate among unforeseen dangers, without chart or pilot or previous knowledge of the countries, their inhabitants or language; to keep a constant and anxious watch at all hours, in all kinds of weather, subject to the caprices of the wind and without proper food. Age was already rapidly making itself felt when Columbus undertook this, his last, and most disastrous cruise (55 years old), the ultimate ten years of which were filled with care, physical ailments, and troubles of many sorts. For several weeks before he landed back at San Lucar de Barrameda, his tiny ship was thrown hither and thither in mid-ocean by violent winds and hill-like waves, combined with tropical showers; all that time Columbus was suffering the most excruciating pains from his old malady, until his crazy and shattered little bark anchored in the harbor, with her haggard, emaciated, crippled and almost blind master aboard.

From San Lucar he had himself conveyed to Seville, where he hoped to enjoy the much-needed rest of mind and body, and to recruit his health; but fortune continued to frown upon him, for he ascertained on arriving at that city that all his private affairs were in a state of confusion and entanglement. Since he had been sent to Spain from San Domingo, shackled like the vilest of culprits, when his house and effects had been seized and confiscated by order of Bobadilla, his rents and dues had been unlawfully retained in possession of Governor Ovando, the successor of Bobadilla in command of the Island. He was, therefore, in actual penury. He remained at Seville during the rest of that winter and part of the following spring, a victim of his chronic and painful illness.

At the beginning of May, 1505, feeling a little better, he went with his brother Bartholomew to Court, then sojourning at Segovia, to personally plead for his rights. While there "he was once more confined to his bed by a tormenting attack of the gout, aggravated by the sorrows and disappointments which preyed upon his heart." From this couch of anguish he addressed one more pathetic appeal to the justice of the King, but ah, all in vain!

He sought consolation in devoutly reading the prophecies of the Holy Scriptures and the writings of the Fathers of the Church, and wrote a religious book and a final long letter, full of poetic mysticism, to that selfish and ungrateful King Ferdinand, the noble and magnanimous Queen Isabella having already expired the year before. In making a hurried

psychological study of these two opuscles, I find that for the third time the intellect of Columbus was clouded with delusion. The extravagances of his overwrought imagination must not, however, be entirely judged as they appear at the present day. They were in perfect sympathy with the quintessence of those times, when the spirit of the Crusaders was still rampant, when the conquest and fanatical expatriation of the Moslem had just been accomplished, and the Inquisition permeated, enslaved and terrorized the whole Spanish kingdom.

So poor and helpless at last he found himself, after uselessly following the Court from place to place, that he accepted the modest home offered him by kind-hearted and charitable Gil Garcia—a sailor—at Valladolid, Magdalen Street (now called Colón). There, propped up in his lowly bed, suffering just as much from the cardiac complications of chronic rheumatism as from mental anguish and dejection, and want of proper medical attendance; looking a great deal older than he really was, but with loftiness of heart, the religious enthusiasm of an old prophet, and Christ-like forgiveness for all his persecutors, under those long, curling white hairs of his, and the gray robe of the order of St. Francis—of whom he had been a great devotee—in which he begged to be clothed and buried, he was uttering words which, to anybody unacquainted with his life, would have seemed very strange indeed. For he was speaking to his two sons and his confessor, Fray Gaspar de la Misericordia, of little else but of another world—not the world of the unknown and unknowable, nor the house not made with hands, eternal in the heavens, to which he was soon to go—but of a New World on this planet of ours, where he had been; of which he was the first to give a faithful account, and to bring from it men of an unheard-of race, and most wonderful specimens of the animal and vegetable kingdoms; a world which should be forever associated with his name, and which will be without any doubt for all coming ages an inexhaustible field for commerce, for industry, for agriculture, for benevolence, philanthropy and liberty—a true material salvation of the whole human race.

He took his departure from this life on Ascension day, May 20, 1506, a servant satisfied of his work and honorably dismissed from the visible terraqueous globe, which he had very much enlarged, to go to the invisible and everlasting hereafter, whither all of us are marching on, pronouncing with great unction these sublime Latin words: *In manus tuas Domine commendo spiritum meum.*

What was the cause of Columbus' death, and what part did the medical profession take in the discovery of America?

I have just remarked that he died from the cardiac complications of chronic rheumatism, thus contradicting all the standard historical authorities who assert he was a victim of gout. My humble opinion is that the chronic form of poly-articular rheumatism was not developed slowly, but succeeded to an acute attack, and that this first invasion of the disease occurred on the last days of June, 1498, after Columbus left the Cape Verde Islands, on his third voyage. "The atmosphere was loaded with clouds and vapors; neither sun nor stars were to be seen; a sultry, depressing temperature prevailed," says Washington Irving. A little farther along in his narrative the same high historical authority adds that on July 13

the ships "had entered a region where the whole sea was like a mirror, and the vessels remained almost motionless, with flapping sails; the crews panting under the heat of a vertical sun, unmitigated by any refreshing breeze." The sailors lost all strength and spirits, and there was in the atmosphere, owing to drizzling showers, that combination of heat and moisture so well adapted for a genuine attack of acute rheumatism, and entirely unfavorable for the development of a paroxysm of gout. But the presence of the rheumatic poison was clearly evident in the accompanying "violent fever." Gout is not ushered in by high fever, and during the hours of severe suffering the skin usually remains dry, a general sense of relief being experienced just as soon as a profuse perspiration sets in. A warm climate exerts for that reason a beneficial effect on the occurrence of the seizures of gout. As for the peculiarity of the first attack making its appearance at night, between the hours of 12 M. and 5 A.M., I can not say anything, because the exact time at which it occurred is nowhere recorded.

Those writers who have minutely described the last few months of the life of Christopher Columbus state that when he was confined in bed *his body was extraordinarily swollen from the chest downwards*. Here we have the cardiac dropsy met with as the final and fatal result of an old inflammation of the endocardium, brought about almost invariably by an attack of acute rheumatism. The shrinking and induration of the valve curtains of the heart and their tendons, as a sequel of endocarditis, and the hypertrophy and dilatation of the cardiac walls to which these pathologic changes give rise, owe their chief importance to the purely mechanical disturbance of the blood circulation thereby induced, the action of the heart becoming more and more feeble every day until death at last closes the scene.

The cardiac complications of rheumatism (endocarditis, pericarditis, myocarditis) are by far the most frequent, being present in more than 50 per cent. of all cases, and constitute the commonest cause of death in this disease. Bouillaud was the first to recognize the frequency of such accidents, and his great discovery that "their occurrence is the rule rather than the exception in rheumatic fever," has stood the test of all subsequent observers, and remains to-day one of the best established facts in clinical medicine.

Having finished saying what I had to say about the medical history of the immortal discoverer of this New World of ours, I will end by putting upon record the names of those belonging to our noble profession who directly contributed to the realization of such a momentous event in history. The clear intuitions of Avicenna "the Prince of Physicians," as he was called; the advice and encouragement given to Columbus by the Florentine physician and distinguished cosmographer, Paul Toscanelli; the modest village doctor, Garcia Fernandez, who, as an improvised expert in mental diseases, won for the perambulating genius the respect and sympathy of the worthy prior of the Monastery of La Rabida; the very important fact that, although it is proved beyond doubt that no priest accompanied Columbus on his first voyage, there were two representatives of our profession among his followers—Maestro Alonzo and Maestro Juan—two ship surgeons or *fisicos*; and last but not least, the learned author of the very first

scientific report on America, Dr. Diego Alvarez Chanca, who came over with Columbus on the second voyage, and saved his life during a protracted and dangerous attack of typhus fever. All these facts, scattered in many old books and pamphlets, worm-eaten in dusty archives, are here collected and presented as *pièces justificatives* of the noteworthy part taken by the medical profession in the discovery of the Western Continent.

Almost every one who has written the life and voyages of the immortal Genoese navigator,—and their name is legion—speaks of the probable sources of his information about the existence of a western route to the East Indies. But none of them, that I am aware of, refers to the writing of Avicenna as a possible fountain of suggestion. This eminently successful physician and most wonderfully learned man was born at the village of Afshend, in the province of Bokhara, Turkestan, Central Asia, in 980 A.D., and died in 1037. Besides his resplendent medical knowledge, he was a profound philosopher, a skilful rhetorician, excellent geometer, well versed in astronomy and astrology, a shrewd theologian, an accomplished naturalist, and a very fine musician. During the last fourteen years of his life he wrote a considerable number of works on widely different subjects, among which his treatise entitled, "*De Complexionibus*," section 1, chapter 1, where he cites the opinion of Aristotle expressed in his work, "*De Causis Proprietatum Elementorum*," is an able speculation on the existence of the Antipodes.

Paolo del Pozzo Toscanelli was born at Florence in 1397, studied medicine in his native city and became one of the most famous astronomers and cosmographers of his time. On account of his great reputation in nautical science he was constantly consulted by bold navigators from different countries, who unhesitatingly followed his advice and the course marked down for them in the charts Toscanelli himself drew. He was thoroughly acquainted with the scientific and geographical literature of the Greek and Latin classics; became one of the keepers of the celebrated Florentine Library at the age of 30 years; erected, about 1468, the famous gnomon on the uppermost part of the dome of the cathedral at Florence; died in that city on the 15th of May, 1482. To this distinguished member of our profession Columbus applied, beseeching his opinion and advice in regard to his contemplated stupendous enterprise, as had also done a few days before, on the same subject, the powerful King of Portugal. Like the truly scientific and generous man that he was, not only did he immediately answer the two letters of the then obscure sailor, confirming him in his views of the figure of the earth and the practicability of a voyage westward to India, but also sent him a chart drawn by his own hands in which was marked and explained the course Columbus should follow to reach there in safety. This very chart was the one used by the Admiral on his first voyage of discovery. He showed it to Martin Alonzo Pinzon, captain of the caravel *Pinta*, while sailing on the *mare incognitum, tenebrosum*, and both frequently sat on deck discoursing upon it. The historian Las Casas, a contemporary and friend of Columbus, says he saw it and had it in his possession. But it has been irretrievably lost.

The ancient convent of Franciscan friars dedicated to Santa Maria de la Rabida—where Columbus halted, accompanied by his son Diego, hungry, thirsty,

dressed in tatters, full of dust and tired from having tramped many miles—is situated at about half a league from the village of Palos de Moguer, in Andalusia, Spain. The humble physician of this little maritime town was Dr. García Fernandez, who enjoyed the friendship and high regard of the respected Prior of the Monastery, Juan Perez de Marchena. This patriotic friar detained Columbus there as his guest, and, diffident of his own judgment as to the sanity of the distinguished-looking foreigner, sent for his scientific friend, the village doctor, to converse with him and inquire into his mental state. Dr. Fernandez was equally struck with the intelligent appearance and entertaining conversation of Columbus. He discussed with him several geographical and astronomical topics, and became convinced that he by no means was talking to a madman but to a genius. His clear discernment at once detected the possibility of the adventure Columbus was pursuing, and won for him, with his favorable report to the Prior, the good will and invaluable aid of that influential religious man. What the result would have been if that unassuming and kind village doctor had given an unfavorable opinion, nobody can tell.

Among the few brave men that dared accompany Columbus on his first voyage of discovery to America were two representatives of our philanthropical profession. Maestro Alonzo was the name of one, and Maestro Juan that of the other. The first seems to have been the better known of the two, and came over in the caravel *Santa Maria*, commanded by Columbus, while the second was more of a friend of Martin Alonzo Pinzon, and embarked in his vessel *Pinta*. This last remained at the little fort of Navidad when Columbus returned to Spain, being one of the thirty-eight men massacred by the native Indians of San Domingo, and thus paying with his life for his professional devotion. The small band of foolhardy Spanish colonizers were under his medical care.

I have already referred to Dr. Diego Alvarez Chanca, who came with Columbus on his second voyage, and saved his life and that of many *hidalgos* at the point of death in the Island of Hispaniola or San Domingo. The account given by this distinguished man of science to the municipal council of his native city is undoubtedly an unpretentious evidence of the wide range of his scientific knowledge, and constitutes the first sketch of the flora, the fauna, the ethnology and climatology of our dear American continent. He also wrote, on his return to Spain, a work entitled, "*Comentum Novum in Parabolis Divi Arnaldi de Villanova*," published at Seville in 1514.

In conclusion, we, as a class, have sufficient reason to feel proud of the active part taken by members of the medical profession in the discovery of this beautiful land of ours, where the "divine right of kings" is no longer possible, and when the great Chicago World's Columbian Fair has given imperishable existence to the memory of its discoverer.

194 West 10th Street.

TRANSPORTATION OF WOUNDED IN WAR.

The opening paper of the Symposium on Transportation of Wounded, at the meeting of the Association of Military Surgeons, Washington, D. C., May 2, 1894.

BY CHARLES SMART, M.D.

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In writing history it is necessary to begin at the beginning, thereafter following our subject along the stream of time until we reach either the end of its course or its present anchorage; but the beginning of our present subject is lost in the haze of the distant past. In the earliest dawn of history we find men fighting; and battles, no doubt, were fought even in the primitive days. The history of the human race is, in fact, a history of battles and their results. But history had no eyes for those who dropped out of the struggle; seldom are we told of the wounded. Nevertheless, we must credit these old time warriors with sympathies which led them to care for their wounded, so that our subject finds a beginning as far back and as undefined as history itself.

We may assume that slaves, servants, companions-in-arms, friends or relatives cared for the fallen as soon as the exigencies of war permitted, and that the methods differed with race and nation, mode of warfare, and an infinity of small or local conditions. We get an occasional glimpse of these in the chronicles of the past, but they have merely an antiquarian interest. In the feudal age each chief looked after the welfare of his armed vassals, if from no higher motive than personal interest, for his own power depended on the strength of his following. A victorious army imposed the care of its sick and wounded on the non-combatant population, whether friends or enemies, and the system of ransom which followed that of slavery often obtained for a fallen enemy greater care and consideration than he would otherwise have received. When the companies of feudal chiefs became replaced by commands recruited at large, provision was made for the wounded by the central power or government.

The outbreak of our Revolution brought us first face to face with this question. Our improvised army was modeled on that of England, and English medical methods necessarily influenced the elaboration of our own. These looked only to providing the army with intelligent medical men, efficient nurses, and the needful allowance of medical and surgical supplies. They were of infinite value when brought into immediate relationship with the wounded, but there was no special provision to insure that this would be effected. When a battle was in progress the medical men, nurses and supplies constituting the field or regimental hospitals, were somewhere in the rear of the army with its other impedimenta, for at that time the medical armamentaria were regarded as impediments pure and simple,—their value as preservative of the integrity of a line of battle being unrecognized. In Europe, where frequent wars had reduced the methods of the battlefield to system, the regulation distance of the impedimenta behind the fighting line was not less than one league. Here, during the battle, the medical men of the army attended such of the wounded as were able to reach them, or such special cases, generally officers of rank, as might be brought to them; and as in a general engagement there was usually no lack of such patients, the surgeons naturally considered themselves to be doing excellent and valuable work, although the poor fellows stricken on the field and unable to leave it without

CONTRACTION OF FINGERS.—Apply upon the palm of the hand a large quantity of the following ointment: White vaselin, 30 grammes (1 ounce); iodid of potassium, 2 grammes (31 grains); iodine, 1 gramme (15½ grains); cover with thick layer of cotton, rubber cloth, and moderately tight bandage. Renew application daily for three or four weeks. (VULPIAN, *La Presse Médicale*, Feb. 10, 1894).—*Universal Medical Journal*, April, 1894.