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Christopher Columbus and the History of Syphilis

By ELLIS HERNDON HUDSON, M.D., F.A.C.P., D.T.M. & H. (Lond.) *

Any inquiry into the origin of syphilis encounters two questions: (i) Was there no syphilis in Europe and the rest of the Old World until the end of the fifteenth century? And (ii), did the men in Columbus' ships bring it from the New World in 1493? While MORISON (1), biographer of Columbus, says that many medical authorities and probably most laymen believe in this "American origin" of syphilis; other experts, unsure of the "Columbus theory", regard the origin of syphilis as a complicated and controversial enigma.

In recent decades, however, much has been learned about spirochetal infection (the disease became treponematosiis when the spirochete was renamed the treponeme). This accumulating information about the natural history of treponemal infection and its various manifestations in man has opened up a broader perspective on the question of its origin. Hence, it now seems clear that treponematosiis was in existence on every continent before recorded history, pre-dating Columbus by thousands of years. Whatever infection Columbus' men did or did not have, would thus have no bearing on the history of syphilis.

It seems appropriate, therefore, to review the Columbus theory in this context. After citing references to show how commonly the theory of American origin is encountered in general literature, and giving the views of various writers exemplifying its acceptance and rejection, I shall suggest a solution for this unresolved question.

General References

In VOLTAIRE'S (2) *Candide* (1759), Pangloss declared that the syphilis from which he suffered was the result of a chain of infections that began with a Spaniard who caught it in an island of America. BURCKHARDT (3), in his study of the Renaissance one hundred years ago, remarked about the date 1490 that it was "before the appearance of syphilis". In more recent time, a popular radio series called the Human Adventure, originating at the University of Chicago and broadcast by the Mutual System, fea-

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tured an episode in 1945 entitled "The Story of Syphilis". This purported to give the historical truth about the arrival of Columbus and his infected sailors at the Spanish Court in Barcelona, and the subsequent dissemination of syphilis by the army of Charles VIII.

MADARIAGA (4), in his biography of Columbus, reported that "the amorous Spaniards contracted a terrible disease (syphilis) in the arms of the Indian women". LINTON (5), the anthropologist, spoke of the "far-reaching political and sociological consequences of syphilis which the American Indians graciously gave to the Europeans". RITNER (6) introduced into a gallery of "historical villains", which included Attila, Hitler and Titus Oates, the unknown sailor in Columbus' crew that brought syphilis from Hispaniola to Spain. A Travel Magazine (7) said Columbus apparently gave gonorrhoea and alcohol to the West Indians in exchange for syphilis and tobacco, "one of the most unhappy swaps in history".

Opinions Favoring the Theory

The above references have been collected at random from the general literature; those that follow illustrate the group of writers who consider the Columbus theory tenable. An attempt to cite all such authors, with their supporting arguments, would take too much space.

ASTRUC (8), physician at the Court of Louis XV, gave the theory a push by alleging that the colonists that returned sick from Hispaniola had the "Venereal Disease", which he said was the same as bubas and yaws. Contemporary doctors and chroniclers, however, said the men were suffering from bad air (malaria) and bad diet (dysentery).

In contrast, ASTRUC's contemporary DE SAUVAGES (9) proposed that yaws and syphilis were different "species", that is different diseases, because yaws, he said, was a non-venereal disease of children occurring in hot regions such as Africa, whereas syphilis was a venereal disease of adults occurring in temperate regions such as Europe. This classification was based on epidemiology, the branch of medicine concerned with "how" and "where" infections are acquired. This way of classifying diseases was abandoned one hundred years ago with the advent of the microbe era. Infectious diseases are now classified on the basis of etiology, i.e., the causative organism, the "what". Although etiology is the only proper basis for diagnosis, much of the thinking about the diagno-

sis of treponemal disease unfortunately harks back to the eighteenth century concepts of DE SAUVAGES.

PUSEY (10) said, "Syphilis is the one disease whose history begins with a definite date . . . the date of the discovery of America", after which it was carried by Europeans in a few years to all "of the known world". ZINSSER (11) accepted the Columbus theory, including the subsequent "epidemic" in Europe, which he believed was due to a mutation in the treponeme. PARRAN (12) gave the Columbus story full treatment, with an elaboration to support the surmise that Columbus himself was infected and died of syphilis.

SYPHILIS: THE INVADER (13), a film distributed by the Georgia Department of Public Health and designed for "high school and college audiences, community groups and television", referred to the "Neapolitan Disease" and its spread at the end of the fifteenth century. Although the accompanying pamphlet stated that the Columbus theory was now questioned by many scholars, both film and pamphlet gave all the familiar details. The germ introduced in 1493, they said, was spread by "every ship" and "every army" and soon invaded "every land", finally reaching China in 1505.

HARRISON (14) thought syphilis was a new disease due to a mutation that had occurred in America; he believed there were cases of syphilis aboard the returning caravels and that Columbus concealed this fact.

A "student-feature" subtitled "Syphilis as it first appeared in Western Civilization", printed in the Harvard Medical Alumni Bulletin (15) illustrates how the Columbus theory continues to permeate the medical school. Although Columbus went overland to Barcelona, taking no sailors with him, the student-author told how the disease spread "when the boats came to Barcelona", and when the army of Charles VIII carried it to Naples. The essay closed with the dubious assurance that "penicillin had rung the bell on syphilis" and reduced its incidence to "an insignificant fraction".

At the "WORLD FORUM (16) on Syphilis and Other Treponematoses", organized in 1962 by the U.S. Public Health Service in collaboration with several national and international organizations, many speakers alluded to the "American origin" with apparent approval. One who was reporting a series of 1492 cases remarked facetiously that the coincidence with the famous date was unintentional. The Chairman recalled that syphilis at the end of the fifteenth century "suddenly took Europe and the East by storm". Typical of several papers was one that spoke of the time when "Columbus and his men returned to Europe and presented a New World disease" which was then carried to all parts of the Old

World "by soldiers and sailors, merchants and diplomats, explorers and missionaries".

It would seem from these scattered references that doctors and sociologists, anthropologists, high school, college and medical students, civic groups and the reading public are still being indoctrinated with the Columbus story. Many people have been so intrigued and gripped by the legend that for them it has become reality.

Opinions Opposing the Theory

As early as the first half of the sixteenth century, when the American origin was being suggested, BLONDUS (17) said, "Let us not say it was brought from America by Indians, and thus expose our simplicity". In 1546, FRACASTOR (1) in *De Contagione* said he could not see how a few sailors could have spread a disease so widely or so quickly as had been alleged. LEONICENSUS (18), a doctor of Vicenza in northern Italy, said it was not reasonable to call *morbus gallicus* a new disease, when it was well known that the peasants of Lombardy had had an identical infection for countless years.

Bubas, the equivalent of pocks, is an old Spanish word for the early eruption of both yaws and syphilis; yaws is called bubas today in Spanish-speaking countries. VILLALOBOS (19) described bubas in Salamanca about 1495; his detailed discussion of symptoms and treatment signified long familiarity with the disease, even in that small and isolated university town. If, in fact, the disease had only just appeared, it is remarkable that he made no reference to Columbus and the New World, no mention of the "French" or "Neapolitan" disease.

In the eighteenth century, TURNER (20) observed that the pox, as he called it, had first been spread by "common converse" (non-venereally) and only later by "impure embrace". He thought that it first "sheltered under cover of leprosy", and that it was only when the pox became generally recognized that lazars turned into pocky-houses. He suggested that the Spaniards had acquired the infection originally from their Guinea slaves, and that the severe symptoms attributed to it might be due to injudicious use of mercury.

More recently, BURET (21) called attention to the long lag between 1493 and the first enunciation of the Columbus theory, a matter of thirty or forty years, an interval during which both Columbus and his men had died. SUDHOFF (18) showed that the term "mal franzoso" was current in Italy fifty years before

Columbus' first return voyage. He said the common people were familiar with "le gros mal" under many names, the number of patients was small and municipal expenditures for pocky-houses were not great. He denied that physicians were "helpless" as sometimes alleged; in fact, the disease came equipped with a sovereign remedy and a whole complex of treatments.

HOLCOMB (22) called the Columbus theory the Haitian myth. Columbus, he said, left his ships and all his sailors in southwestern Spain, taking only six healthy male Indians when he crossed Spain to Barcelona. HOLCOMB contended that the stories about a ferocious disease and a lethal epidemic sweeping like a tornado across Europe originated in panic, mistaken diagnosis and the misuse of mercury. He concluded that the alleged siege and epidemic at Naples were part of the myth.

HAMLIN (23) believed that "treponematosis" (he was one of the first to use the word) was indigenous to Africa, Melanesia, Australia and South America "for centuries before any contact with European races was established". He suggested that movements of proto-Negroid peoples carried the infection from Africa into Asia, and that later migrations over the Aleutian bridge brought the treponeme to the Americas.

COLE (24) showed that "syphilis under various names was well recognized (in the Mediterranean world) and treated with mercury . . . long before the discovery of America". He also thought it possible that syphilis was present in the Americas before Columbus. "After all, the New Hemisphere was probably peopled . . . by way of the Bering Straits, and syphilis is certainly an old disease in the Old World".

MORISON (1, 25) noted that if any of Columbus' men had become infected, there would have been a sicklist on the first return, but in fact the crews of both ships arrived "exhausted but healthy". He said that although three relays of Spaniards returned home between March and November, 1494, their physician, Chanca, at no time said anything about the men contracting a new and dangerous disease. MORISON reasoned that the arrival at Cadiz of ships bringing sailors and colonists sick of an unknown and loathsome disease would have aroused excitement and apprehension, but there is no mention of such a condition in any contemporary record. Las bubas in Seville was first noted in 1497, and the earliest recorded outbreak of syphilis among the colonists on Hispaniola was in 1498. As to Naples according to MORISON, intensive research in the Neapolitan archives and local chronicles of the French occupation have failed to reveal any evidence of the disease in that city before the departure of Charles and his army.

In fact, the earliest mention of syphilis in Naples was six months after that event, in January, 1496.

MORISON, however, did not feel free to follow his historical evidence; instead, he deferred to others perhaps less well equipped to render judgment. Since "in the opinion of most authorities whom I have consulted, the virulent outbreaks of syphilis in Italy in 1494–96 point to an outside source of infection", he concluded that it must have been those six West Indians who "carried *Spirochaeta pallida* in their bloodstreams and passed it on in the usual manner". This disposition of the affair, however, neglects the medical fact that bloodstream spirochetes are not infective, even venereally, if that is the meaning of "usual manner".

CASTIGLIONI (26), the medical historian, said: "One should accept that syphilis was probably noted in Europe before the return of Columbus, and that the doubtful allusions of early writers really refer to syphilis", but he added that the disease may have been brought back from the New World in a more virulent form than before. This ambivalence toward the Columbus theory was reflected also by SINGER & UNDERWOOD (27) who acknowledged that syphilis in Europe probably ante-dated Columbus, but added: "... it seems probable that perhaps as the result of the introduction from America of a new strain of the organism of syphilis, the disease in Europe changed its character completely during the closing years of the fifteenth century".

A recent editorial in the British Medical Journal (28) expressed the opinion that the origin of syphilis continues to be controversial, "there still being inadequate material to prove conclusively whether it originated in the New World or the Old... Though it has been usual in the past to take sides on the issue whether the Indians infected Columbus' men or *vice versa*, there is in fact no good reason why both continents should not have been afflicted during pre-Columbian times".

A New Way of Thinking

The above citations make it obvious that this controversy is far from settled. Some follow PUSEY in the belief that the history of syphilis began in 1493, a story without prologue. Others follow HOLCOMB in characterizing the Columbus theory a myth. A third group keep a foot in both camps. By selecting the "right" witnesses and dates and discarding the rest, it is possible to build a case for either view, depending on the credibility of the witnesses and the credulity of the reader.

The whole subject requires elevation to a new plane, expansion to fit a broader frame of reference. Two recently established concepts have made the Columbus theory inconsequential. The first is that syphilis is not exclusively a venereal disease, but also exists in many regions of the world in non-venereal (endemic) form. Actually, the number of human beings suffering from endemic syphilis far exceeds those with venereal (sporadic) syphilis.

Endemic syphilis is a contagious disease of children in primitive, rural environments; it is not related to sexual activity (29). With all the marks of an ancient disease, it is at home in unhygienic villages of the temperate zone, such as those found formerly in Bosnia and southern Russia, or among the peasants and nomads found presently in the savannas and deserts of the tropics. Incidentally, this childhood contagion should not be confused with congenital syphilis, a condition which sometimes occurs as a consequence of venereal infections. Although sporadic syphilis is normally transmitted from adult to adult through intercourse, and endemic syphilis from child to child in play-contacts, the causal parasite is exactly the same, the diagnostic tests are identical and the same drugs are used in treatment. The only difference between these two forms of syphilis is in their epidemiology ("how and where"). Their etiology ("what") is identical, *Treponema pallidum*.

The second concept is this: there is no essential difference between *T. pallidum* and *Treponema pertenuis*, the alleged parasite of yaws (29). Extensive efforts have been made over the past fifty years to find some way to tell them apart — but in vain. Admittedly, there are quantitative differences, but such differences characterize strains. If two organisms are to be classified as different species, causing different diseases, it is essential to demonstrate some qualitative difference. In fact, as to syphilis and yaws, there is no quality in one which is not present to some degree in the other. They do not differ qualitatively in respect to etiology, serology, pathology or symptomatology.

In experimental animals, TURNER & HOLLANDER (30) found certain variations in the behavior of treponemes from three sources, venereal syphilis, endemic syphilis and yaws. The "venereal treponemes" came from cases, for example, in Baghdad and Chicago, the "endemic treponemes" from cases in Bosnia, Syria and elsewhere, and the yaws treponemes from many places such as Haiti and Samoa. But all the patterns of behavior exhibited by these three sets of treponemes, collected from such diverse sources, disposed themselves along a biological gradient, with the parasites of venereal syphilis toward one pole and the yaws parasites toward the other. The

treponemes from endemic syphilis occupied an intermediate position on the gradient. These workers found no clear-cut boundaries, only broad groupings with considerable overlapping and some curious transpositions. Further, the patterns shifted in the course of time with changes in the experimental conditions. It was inevitable that TURNER & HOLLANDER should refer to their different treponemes as strains; their work nullified any idea that their three sets of treponemes could be categorized as species. They all shared the qualities of one species; they differed in the quantitative distribution of those qualities. This distribution fluctuated with time and external change.

Since diseases are properly classified only on the basis of etiology, and since one parasite cannot cause more than one disease, it follows that there is but one treponemal disease of man, with three clinical syndromes. Venereal and non-venereal syphilis and yaws are epidemiological phases of treponematosis, all caused by *T. pallidum*. To call these syndromes "the treponematoses" is to imply that the parasites can be distinguished from each other; this differentiation has never been achieved. As HUME (16) said at the World Forum on Syphilis, no one if given an "unknown" treponeme could establish with technics currently available whether it had come from a case of venereal syphilis, or of endemic syphilis or of yaws. And no one in that audience of experts rose to challenge his statement.

Unlike species, which are relatively stable, strains are by definition labile, capable of shift and change in response to the environment. Through normal variations in its properties, the parasite reacts favorably or unfavorably to new conditions, and by natural selection the adapted strain persists in the new environment. This sequence of variation, natural selection and adaptation will reverse itself if conditions revert to a former state. In this connection, it seems unnecessary and inappropriate to invoke a hypothetical mutation to explain each shift in the behavior of the treponeme. Mutation is the outward manifestation of internal genetic change, occurring independently of the environment. Strain-changes, on the other hand, arise in response to environmental influences. Mutation is rigid and abrupt; strains, being flexible, change gradually. Mutation involves a disproportionate magnitude of change in both quantity and quality; the shifting of strains involves small additions and subtractions in quantity. Most significantly, mutation—unlike strain-changes—cannot produce transitional forms or respond to "tidal flow", i.e., does not retain the ability to adapt in one direction or another whichever way the environment swings.

The labile character of the strains in treponematosi accounts adequately for the biological gradient, extending from (i) yaws, producing succulent skin lesions in moist, hot areas such as Central Africa and the West Indies, through (ii) endemic syphilis, producing dry skin lesions with the addition of mouth sores, in more temperate regions such as the savannas of Africa and the deserts of Arabia and central Australia, to (iii) venereal syphilis of modern civilization, urban and global. It also accounts for the fact that when yaws cases move up from lowland to hill country their lesions lose succulence and mouth sores appear; the same swing toward endemic syphilis occurs in yaws when hot, wet seasons give way to cool and dry. Conversely, dry skin lesions become succulent among Negroes working in the humid heat of the deep shafts of Johannesburg gold mines. Medical history offers instances of endemic syphilis initiated by the introduction of cases of venereal syphilis, as well as venereal infections arising from a background of endemic syphilis or yaws.

The Two Corollaries

Geographical and historical corollaries spring from this close correlation between treponemal strains and environmental factors.

(i) Each region of the world has the type of treponematosi appropriate to its climate and the way its indigenous inhabitants live. This is the geographic corollary (31). Once the climate and habits of the people of a region are known, it is easy to predicate the phase of treponematosi which there prevails. In Africa, for example, the yaws type characterizes the rain-forest, while endemic syphilis characterizes the savannas and deserts, and venereal syphilis characterizes the cities. Although there are always transitional forms at the margins where seasonal climatic changes occur, and where social groups impinge on each other, yaws and endemic syphilis are never present in the same region, nor does venereal syphilis flourish in any but man-made urban environments.

Venereal syphilis is found in the cities of the world, and in those countries, such as Europe and the United States, which even in rural areas maintain an urban economy. This type of treponematosi is globally distributed because the measures of public health and private hygiene necessary to life in the city are essentially the same in all cities in all latitudes. Endemic syphilis and yaws, on the other hand, cannot survive in the city environment, because they can only flourish among people living at a lower

sanitary and hygienic level. The urban environment screens out all such non-venereal, childhood-acquired forms of endemic treponematoses, leaving the relatively clean, clothed and sophisticated adults of the city to their particular epidemiological strains of *T. pallidum*—in a sense their own artificial creation to match the artificial nature of the city.

(ii) The present distribution of the three types of treponematoses recapitulates the history of the disease. This is the historical corollary (31). For example, when the eye falls on the map of treponemal distribution in Africa, there is a solid mass of yaws at the center surrounded by a zone of endemic syphilis on the north, east and south. This suggests peripheral extension from a central point of origin. To take another illustration: the primitive people of the humid north shore of Australia suffer from yaws, whereas the aborigines of the central desert suffer from endemic syphilis. This suggests adaptive change accompanying human migration southward.

Since prehistoric times the Middle East has been the bridge between Africa and Asia, the migration route for hundreds of thousands of years for passage either eastward or westward. In either case, tropical treponematoses gave way to endemic syphilis in Arabia and Mesopotamia under the conditions of life in that region. When such waves of migrants continued farther, however, into Africa, or toward India, Ceylon and Indonesia as the case might be, the endemic strains of southwestern Asia changed back to yaws under the tropical conditions of the new environment.

When the Neolithic man of the Tigris and Euphrates, or the adjacent Indus, originated the first cities about eight thousand years ago, the endemic phase or syndrome that was then prevalent in the villages was converted into the venereal phase by the new adult epidemiology. This was not an irreversible, one-shot mutation from an innocent parasite of children to a genital parasite of adults. It did not mean that the parasite had become "virulent" or had acquired a "tropism" for the genitalia. On the contrary, it simply meant that *T. pallidum*, having been deprived of its usual freedom of circulation among the village children, had adapted itself to the epidemiology of transfer among the adults of the city communities via the intimate contacts incident to intercourse. This change of phase from endemic to sporadic could—and probably did—occur independently here and there in other regions of the world, as inhabited places and collections of people gradually grew into cities (31).

When bands of hunters passed from Asia into North America over the Bering bridge about the end of the last Ice Age, they

were followed by waves of further migration. Since these were nomadic peoples their treponematoses was in the endemic phase; this, however, changed into yaws when they reached the humid, tropical regions of Central America. There, with the development of advanced civilizations, venereal syphilis supervened in the cities (31).

It is possible to speak thus confidently of the historical development of the treponemal disease of man, because the events of recorded history furnish the light by which these events of pre-history can be read. The epidemiologist can point to many cities that are themselves hotbeds of venereal syphilis, yet are surrounded by peasant villages full of non-venereal syphilis or yaws. Kingston, Jamaica, was such a case; constant traffic passed between city and countryside, but treponemes inside the city caused venereal syphilis and those outside caused yaws. The difference was epidemiological; though the climate was the same, the way people lived was different.

When yaws was imported to the Iberian Peninsula by the thousands of black slaves from West Africa between 1442 and 1492, it first produced among its Spanish and Portuguese victims a non-venereal skin eruption called bubas; but in the new climatic and social environment, with cooler temperatures and the wearing of clothing, bubas was gradually limited to the folds of the body and the genitalia, where the infection produced condylomata. This was only one step from venereal epidemiology, and venereal syphilis supervened. OVIEDO (1) noted that bubas began as a generally distributed contagious disease of "humble people and those of low quality . . . but afterwards it caught on among better and more important people". VILLALOBOS (19) said bubas started as a contagious skin eruption and everyone expected it to rise to a peak, subside and disappear like other epidemic diseases; but new cases continued to turn up, he said, and the eruption seemed to have a predilection for the genitalia, so that the common people were surprised and even educated people were puzzled.

In the New World, many of the slaves that were imported to the continental United States brought yaws with them. These infections, however, in this dryer and more temperate climate, soon acquired the characteristics of endemic syphilis, sometimes called "pseudosyphilis" because it was unrelated to sex. Finally, this non-venereal infection furnished the basis for the high rates of venereal syphilis which formerly characterized the Negro population of the Southern States.

European Syphilis Before Columbus

In spite of our present knowledge about the natural history of the treponemal disease, it has been asserted that we are compelled to accept the sixteenth century statement that syphilis at that time was a new disease. Yet there is much evidence of a treponemal venereal disease in Europe before 1492. We shall here examine three terms, mentagra, the "fig disease" and "leprosy".

Mentagra (9), literally the "chin disease", was described by Pliny in the first century A.D., as a very contagious malady that had recently come from Egypt, its advent followed by quack doctors professing skill in its treatment. In 1539, de Isla, an author who is often quoted by advocates of the Columbus theory, published a book about *las bubas*, the "serpentine disease", which he said was really the same as mentagra. References to this chin disease are scattered through the fifteen centuries between Pliny and de Isla.

What was it? The answer can be found in any Latin lexicon. *Mentum* to the Romans meant the chin, but they also thought of the pubis as a hairy promontory and called it the lesser chin; by use of the diminutive it became *mentula*, the little chin. Then, combining metonymy and euphemism, *mentula* became a polite word for the penis, and *mentulagra* a venereal disease of the male genitalia. In architecture the *mentula* was the spout that carried off rainwater from the eaves. *Mentagra* and *mentulagra* were used interchangeably.

The Latin word *ficus* (fig) was applied to tumors about the anus and genitalia, so-called because of their fancied resemblance to the many-seeded fruit; they were also called *condylomata*, which remains the standard medical word for syphilitic excrescences in this region of the body. Then as now, they were related to prostitutes and homosexuals. Martial, the poet-satirist of the first century A.D., spoke of them as "Syrian tumors". That syphilis could also be non-venereal is suggested by Martial's comic description of a peasant family in which husband and wife, all the children and even the hired man were "befigged" at the same time (9).

The most notorious confusion in terminology involved the word leprosy. Like treponematosis, leprosy has been peculiarly related to Central Africa. It seems probable that these two chronic and mutilating diseases emerged with man from that continent and have long been confounded. The "leprosy" of ancient and medieval times was contagious and venereal, susceptible to mercury. True leprosy (Hansen's disease), however, is not venereal, only slightly contagious, and wholly unresponsive to mercury. It must there-

fore have been treponematosiis that the Caliph was combating when he decreed in 707 A.D. that, in order to protect the citizens of Baghdad from contagion, "lepers" should be isolated and should publicly declare themselves "unclean". To this day the Arabs of the Euphrates refer to the victims of endemic syphilis in their midst as "the unclean people" (9).

Isidore of Seville in the seventh century and Albucasis in the tenth described four kinds of "leprosy", of which one was serpiginous and another was characterized by patchy depigmentation (9). Theodoric (thirteenth century) said "leprous" women were venereally contagious; he cured genital lesions with mercury (32). A London edict of the fourteenth century denounced "lepers" for tainting people through carnal intercourse with women in the stews (29). Dodoens in the sixteenth century acknowledged that venereal leprosy was identical with *lues venerea*, the venereal plague, as syphilis was then called (32).

Robert HENRYSON (33), the Scottish makar (folk-poet), who lived in the second half of the fifteenth century, wrote the sad story of the fair Cresseid. False to her Trojan lover Troilus, she worshipped Venus and Cupid, was discarded by her Greek lover Diomedes, fell into prostitution, blamed Venus for her fate and was cursed by the love goddess for this blasphemy. Her voice became hoarse, sores broke out on her face and body, she lost her beautiful hair and became a shadow of herself—all marks of syphilis. Condemned to spend the rest of her miserable life in a lazar house, she survived by begging at the roadside with "cup and clappers". In Shakespeare's *Henry V* (II. i. 80) Pistol calls Doll Tearsheet a "lazar kite of Cresseid's kind"; in other words, a leprous prostitute.

Although HENRYSON's words were poetic and his scenes laid in classical time, he was obviously describing contemporaneous experiences which would be recognized by his pre-Columbian Scottish readers. When he was writing, lazar houses were scattered over Britain and the continent, but about 1500 lazars became pockyhouses as the common people began calling "venereal leprosy" the pox. Thus the more numerous cases of syphilis came to be differentiated from the far fewer cases of true leprosy.

The chain of ancient relationship between treponemal infections of Africa, the Middle East and Europe cannot be disregarded. For thousands of years two powerful social forces, religious pilgrimage and Negro slavery, bound these three areas together with mass movements involving the displacement of millions of human beings (34).

Christian pilgrimage to the Holy Land started in the early centuries of our era, reaching a climax a thousand years later in the

turmoil of the Crusades. Many "lepers" returned to Europe from those military adventures, bringing home the remedies of mercury inhalations and inunctions of Saracen ointment (mercury in a fatty base). Again, since the seventh century, countless millions of Moslems have made the annual hadj to Mecca, journeying between Arabia, an early home of treponematoses, and many countries of Africa and Asia, notorious for the prevalence of the disease in one form or another.

Since history began, Negro slaves in great numbers have been exported from the treponematous regions of sub-Saharan Africa to the countries around the Mediterranean, to Arabia and beyond as far as China. No part of the ancient and classical world escaped the permeation. It was once possible to claim that those millions of slaves had yaws and not syphilis, and therefore played no part in the history of syphilis. This position is no longer tenable, if endemic syphilis is acknowledged to be merely the counterpart of yaws in temperate and arid areas, and venereal syphilis but an epidemiological phase of the same disease.

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Zusammenfassung

Einige Autoritäten auf dem Gebiete der Medizingeschichte und wahrscheinlich die Mehrzahl der Laien glauben, daß die Syphilis von Amerika aus durch die Schiffsbesatzungen des Kolumbus in die Alte Welt eingeschleppt worden sei. Obwohl diese Theorie sich — wenn auch nicht unwidersprochen — während Jahrhunderten halten konnte, wurde die Kontroverse in der Medizingeschichte doch nie klar gelöst.

Zwei moderne Auffassungen eröffnen nun eine neue Möglichkeit zur Lösung des Problems. 1. Syphilis ist nicht ausschließlich eine venerische Krankheit, sondern existiert in vielen Ländern in einer endemischen, nicht-venerischen Form. 2. Treponemen, die Syphilis und solche, die Frambösie verursachen, können durch keinen bis heute bekannten Test qualitativ voneinander unterschieden werden. Sie müssen Stämme derselben Art sein, *Treponema pallidum*, und somit die Erreger einer einzigen Krankheit, nämlich der Treponematose.

Geographische und historische Indizien weisen deutlich darauf hin, daß in den Tropen, vielleicht in Zentralafrika, die Treponematose als Frambösie aus-

gebrochen ist. Durch Völkerwanderungen in trockenere und kühlere Gebiete wurde die Krankheit verschleppt und verwandelte sich in die endemische Syphilis. Diese wurde ihrerseits zur venerischen Syphilis in den städtischen Verhältnissen der fortschreitenden Zivilisation.

Frambösie, endemische Syphilis und venerische Syphilis sind deshalb als Syndrome und epidemiologische Phasen ein und derselben Krankheit anzusehen. Da man weiß, daß die Treponematose in der einen oder in der andern Form auf jedem Kontinent während Jahrtausenden vorhanden war, kann angenommen werden, daß Kolumbus, seine Seeleute und seine Indianer mit der Geschichte der Syphilis überhaupt in keinem Zusammenhang stehen.

Résumé

Certaines autorités médicales et peut-être la majorité des non-spécialistes croient que la syphilis a son origine en Amérique et qu'elle fut introduite dans le Vieux-Monde par les marins de Colomb. Quoique cette théorie ait toujours été remise sur le tapis pendant des siècles, il apparaît que cette controverse n'a pas encore trouvé sa solution définitive et claire dans l'histoire de la médecine.

Deux conceptions modernes, cependant, permettent une nouvelle approche du problème. 1° La syphilis n'est pas exclusivement une maladie vénérienne, mais existe également dans de nombreux pays sous forme non-vénérienne. 2° Les tréponèmes de la syphilis et du pian ne peuvent être qualitativement différenciés les uns des autres par aucun test connu ; ils sont donc des souches de la même espèce, *Treponema pallidum*, et les agents d'une même maladie, la tréponématose.

Des preuves géographiques et historiques indiquent que la tréponématose est née sous forme de pian dans une région tropicale, peut-être en Afrique centrale. Elle s'étendit, grâce aux migrations humaines dans les régions plus sèches et plus froides où elle devint une syphilis endémique, ce qui ouvrit la voie à l'établissement de la syphilis vénérienne dans les villes à civilisation évoluée.

Le pian, la syphilis endémique et la syphilis vénérienne sont dorénavant considérées comme syndromes et phases épidémiologiques de la même maladie. Puisque l'on peut affirmer que la tréponématose, sous l'une ou l'autre de ces formes, était présente sur tous les continents depuis des milliers d'années, on peut suggérer que Colomb, ses matelots et ses Indiens, n'ont été pour rien dans l'histoire de la syphilis.