Address.

THE NATURE AND PROGRESS OF MALIGNANT DISEASE.

ORATION ON SURGERY AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

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My first words are words of thanks, profound and sincere thanks, addressed to my colleagues of the American Medical Association because of my estimation of the high honor conferred in inviting me to address you on this occasion. My first desire, the dominating desire of earnest appreciation, is that I may say something that will justify the choice of my colleagues and my presence before you. My first hope, the fond hope which I most cherish at this time, is that some one who may be influenced by what I shall say will gain in comfort and life thereby; for, be the gain but little, even then those who are accessory to my presence may claim acquittal because of it.

Since it may not be known to all here present, I am prompted to say at once that, sometime during the course of the meeting of this association, an address, denominated "An Oration on Surgery," is a part of the scientific proceedings. In this instance it is not my intention to attempt a review of the whole field of surgery, nor even of a year's experience, but, instead, to devote the brief time given me to the consideration of a surgical topic which to-day is engrossing more of the time and energy of scientific medical endeavor than is any other subject in the entire range of surgery. Hence the topic of the evening, "The Nature and Progress of Malignant Disease."

It seems not unfitting, in a city whose early resistance to the oppressive encroachments on human liberty awakened the demand for American freedom, that an earnest warning should be voiced against the advancing encroachments on human comfort and life of a malevolent disease which obviously afflicts with dire results all classes of vertebrate beings. The expression, malignant disease, is used here in the general sense, just as later the term cancer will be employed. It is better thus than to attempt to speak of the varieties of malignant disease, since only a general idea of its nature and progress can be considered in the comparatively short time allotted for the purpose.

Cancer is a general and not a local variety of disease. The field of its activity is quite as extensive as is the world itself. The vertebrate order of creatures is more or less afflicted with cancer throughout the entire classified series. The highest vertebrate orders of life suffer from cancer more than do all other orders combined. The civilized and the domesticated classes of higher rank suffer more from this form of affliction than do those of lower rank, or of the natural state. Mankind everywhere pays distinctive vital tribute to this disease; not, however, in

equal proportions, but in accordance with the standard of the civilization of which he is a part. The higher the standard the greater is the contribution to malignant fate; the humbler and more natural the standard the less onerous is the demand. The rulers of mighty nations and the humblest human factors of savage existence, each in their respective ratios, succumb to the mysterious lethal influences of cancer. Also fish and flesh, staple articles of food of man, each, in a varying measure, is the abode of malignant action, and more especially is the latter class thus afflicted. The fish of pure streams and ponds and those of salty habitations are in no small degree the subjects of cancer. The genteel trout and the beneficent cod are examples of this fact, respectively. Even the invertebrate oyster in one instance is widely reported to have yielded to malignant change.

The myriads of oysters subject to the scrutiny of hosts of gustatory and scientific observers for many years, with apparently but one reported instance of malignant disease under all of these circumstances, suggested to us the idea of reviewing the facts in this particular case. A careful examination was made, therefore, of the acknowledged record¹ of the case the recital of the chief points of which merits your indulgence at this time. It appears that the late Professor Leidy, the famous anatomist of Philadelphia, came into possession of an oyster having a large tumor of the soft parts which he presented to the late Professor Ryder in January, 1887. In commenting on the growth at that time Professor Ryder spoke as follows: "The tumor seems to have been benign in character, as the oyster in other respects appears to be healthy." A description of the tumor of quite minute and apparently of microscopic kind is reported along with the above statement which is now regarded by competent authority² as being congenital, thus sustaining the belief in benignity expressed by Professor Ryder at the outset.

I consider it proper to enter thus fully into the merits of this specimen, since, for some reason, it has been regarded as the first and perhaps the only proof of malignant invasion of invertebrate life. We will now return to the main channel of the discourse.

The flesh of cows and oxen is the seat of cancer in the unsuspected proportion³ of 2 per 1,000, as is revealed by the careful inspection of their slaughtered products. The young animals, however, of divers kinds exhibit no such evidence under these circumstances.

Advanced age, both real and comparative, sets the pace of malignant progress, especially in mammals. Real age numbered by many years, and comparative age numbered by fewer, each alike invites the presence of cancer. And, too, in tissues of the human body this same age peculiarity is noted,—those whose life's duty is ended, whose full years of usefulness are reached,

¹ Proc. of the Academy of Natural Sciences of Philadelphia, 1887, p. 25.

² Profs. E. K. Dunham and Harlow Brooks.

³ Imperial Cancer Research Fund (Bashford).

become the frequent prey of cancer, while other contiguous tissues endowed with later function and those of the body at large remain in a healthy and useful state. In this connection it may be said that youth and youthful tissues comparatively seldom hold communion with cancer.

For a long time the solution of the problem of malignant disease has been uppermost in the minds of many of the best students of pathologic phenomena in the medical world. During the last few years the efforts directed to the solution of the mystery of malignancy, stimulated by the thought of the possible parasitic nature of the disease and the apparent increase in its extent and activity, have been markedly extended through the logical efforts of special commissions established for the purpose. Commissions organized under the patronage of crowned heads and public dignitaries of exalted station, and conducted by medical and lay minds of superlative attainment, supplemented by unlimited opportunity and ample financial support, are searching the animal world in the effort to shed light, beneficent light, on the mystery of cancer. In England and Germany especially, the resources of the governments and the sympathetic support of the king and the emperor, respectively, are directed to the benevolent purpose of determining the origin and the true nature of malignant disease. Also in this country notable institutions of learning are patiently engaged in the efforts to accomplish the same purpose. Individuals of eminent attainment are of themselves fighting in the battle along lines of their own selection with the same object in mind. Laymen of munificent means, prompted by humane motives or perhaps by personal dread, offer bountiful endowments for the discovery of the nature and the cure of cancer. The thoughts and efforts of the civilized world, as represented in scientific medical attainment and benevolent endeavor, are to-day mainly centered on securing the control of tuberculosis and on determining the true nature and the cure of malignant disease.

It is proper to say, I believe, that the widely separated instances of cancerous infliction as noted between the civilized and barbarous peoples, between the dwellers in the flesh and salt media, and between the lower classes of mammals seem to indicate forcibly that the circumstances of human life in the civilized state have not given origin to cancer, although they may have added much, indeed, to its frequency.

That cancer is a distressing part of the history of the animal kingdom cannot be gainsaid. And, unfortunately, the more comprehensively and critically the investigations relating to it are carried forward the more widespread it appears to be. As already expressed, mankind in the civilized and also in the undeveloped condition suffers from cancer, and it is probable that no race or condition of the human family is entirely exempted from this infliction. Also no organ or tissue of the human body is entirely free from its visitation. The dumb companions of man are similarly afflicted, but in a less degree, and it is

altogether probable that as the search progresses along the various lines of animal existence malignant manifestation will appear now and again, reminding us, perhaps, that the penalty of the violation of a universal law of development of organized beings is relatively promptly enforced on the object or on the part concerned in the offense.

In this connection it is not amiss to heed the fact that experimentally and practically the transmission of cancer from man to animals or from one animal to another of different species has not yet been successfully witnessed beyond gainsay, notwithstanding the repeated attempts to attain the purpose and the results of long critical observation. On the contrary, the apparent transmission of cancer between animals of like species and its unquestionable extension by metastasis in those already afflicted is of common knowledge.

The vegetable kingdom suffers at times and in isolated places from a form of local progressive disease apparently akin in nature to the malignant characteristics of the animal economy. In fact, the realization that these peculiar vegetable afflictions were caused by a parasite in many instances prompted the renewed suggestion on the part of Hutchinson that similar appearing growths of human origin might later be found to depend on the presence of parasites. Since that time, more especially during the last fifteen years, the contention in this respect between the supporters of the parasitic and non-parasitic ideas regarding this disease has been continuous and spirited, and as yet without a generally satisfactory conclusion.

It is no part of the purpose of this address to discuss the various theories relating to the nature of the inherent cell activity characteristic of cancer, or of any other form of malignancy. To the members of the medical profession here present such a course would necessarily be inconclusive and disappointing. To those of the lay order whose feeble hold on technical expressions would present unsurmountable difficulties of appreciation the result would be the same. Moreover, the chief aim of this discourse would be missing and, besides, as is expressed in a well-known play:

"The result is a very pretty quarrel as it stands;
We should only spoil it by trying to explain it."

The period at which this contention will be ended is too uncertain to merit other than hopeful anticipation, and too important to be neglected in any respect in opposing malignant advance.

The time when malignant disease first appeared in the path of human existence and added its insatiate affliction to the burden of human suffering cannot be stated except in a general way. It is fair to presume, however, that at a definite period of early recorded time malignant activity in some form was present and contributed its portion to the physical distress of the age. But it is difficult, indeed, to find ancient documentary evidence of cancer in such countries as India, China, Egypt and Greece, despite the fact that

their medical literature is quite extensive, especially that of Egypt, whose medical records contain descriptions of great antiquity, comparing favorably in forms of phrase and detail with many of those of the present day. Nor can the ancient history of cancer be correctly written at this late time, as it would not be possible to distinguish between cancer and benign tumor, on the one hand, and between ulcerated cancer and other severe forms of ulcer, on the other.

The comparatively limited knowledge in diagnostic discrimination at that time, as expressed in written characters, forbids the forming of definite conclusions in diagnostic purposes. It is apparent, however, that the ancient Greeks had a very good clinical idea of cancer, as a modern Greek writer, Couzis, of Athens (1903), in reviewing the past history of Greek medicine, says that the practical knowledge of the Hippocratic school was not inferior to that of his own day. The works of Hippocrates (460-370 B.C.) barely mention cancer, stating in connection with the treatment that "deep-seated forms are best untreated, for if treated the patient soon dies; otherwise he may hold on for a long time." It is not difficult for us of the present day to comprehend the full significance of this statement, as, no doubt, a few of us, at least, have witnessed the exemplification of this ancient expression written quite twenty-three hundred years ago. The old Greeks described fully the various distinguishing characteristics of cancer, noted the clinical differences in its various phases, portrayed quite accurately cancerous metastases and prescribed treatment not differing, especially in the palliative sense, from that in use at the present time. Galen (131-201 A.D.), in his extended works, considered cancer quite fully in its important aspects. But from his time to that of Ambrose Paré (1517-90 A.D.) little of special significance was added thereto.

Many of the notions entertained regarding the nature of cancer since Hippocrates' time seem droll to those whose enlightenment on the subject of bacteriology is a matter of recent years. The Galenic notion — probably that of Hippocrates — attributed cancer to the local effect of "overheated and unusually acrid 'black bile' that cannot be purged away." Paré ascribed cancer to the effect of improper diet influencing unfavorably the liver and spleen, followed by "a shutting into the part to be attacked of thickened acrid black bile." The emotions, anger and hate, aggravated the condition, he said. Harvey (1578-1657), the discoverer of the circulation of the blood, regarded cancer as a parasite on the body, living an independent existence at the expense of the latter.

John Hunter (1728-1793) seems to have been the first to recognize the influence of traumatism as a causative factor of cancer, aided by the consequent exudation of coagulable lymph into the interstitial tissues.

Many attempts to inoculate cancer date from the experimental period inaugurated by John Hunter. And early in the nineteenth century

positive results were reported and the parasitic doctrine became prevalent. The era of pathologic anatomy, which culminated in the histologic studies of Müller and Virchow, at first favored the idea of the parasitic nature of the cancer cell, but ultimately condemned it when Virchow showed, as then appeared true, that cancer cells were derived from pre-existing normal elements.

From this period to the present day, theories regarding the nature of cancer have multiplied to a bewildering extent. The two extremes at present are the following: (1) That cancer, like many other morbid processes, is due to a micro-organism; (2) that cancer represents a morbid proliferation of certain normal cellular elements as the result of diminished inhibitory action.

A few words more relative to the parasitic theory may not be amiss at this time. The view that cancer itself is a parasite was expressed by Harvey in 1651. By Dupuytren in 1805, Laennec in 1816, Cruveilhier in 1827, and Lobenstein in 1829, all adopted this view as part of their teaching of pathologic anatomy. A little later the positive results of inoculation experiments were recorded, seeming to confirm the view, and Müller's description of the histologic elements of cancer in 1842 give a remarkably clear exposition of this theory, making the cancer cell the actual parasite which, if implanted in sound tissue, caused a cancerous growth. The question of transmission of cancer, however, remained unsolved, for it was then believed that cancer cells in the natural state could live but a short time outside of the body, and that their great size seemed to preclude their being taken up by the ordinary ports of entry. Also cancer did not appear on abraded surfaces, but in the parenchyma of tissues. In the face of these facts the parasitic origin appears to have languished, and to have been superseded by the later teachings of Virchow and others which derived cancer from pre-existing normal elements.

It was quite apparent at an early period of investigation that the study of the nature and activity of this disease could not shed substantial light on the problem of its control, when based alone on the few cases falling under the notice of a small number of individual observers. The logical corollary of this situation laid the foundation for statistical inquiry and collective investigation. It was not, however, until a comparatively recent date that statistical knowledge attained sufficient rank in this regard to arouse apprehension respecting the presence of cancer. In fact, it was not until the possibility of its being of a parasitic nature was again set forth, and the fact that perhaps it was communicable, that observers of cancer were impressed with the acute sense of a new danger.

It should be stated, although perhaps superfluous, that the deductions based on statistical estimates are not always conclusive, except perhaps to the minds of those whose contentions are encouraged or supported by the calculations. A preconceived notion relative to a disease, or a prejudiced opinion regarding it, can usually

gain substantial comfort from the study of plastic statistics. The product of the data may be "very like a camel," "or a weazel," or perhaps "like a whale," accordingly as a biased statistical Polonius may fancy. One has only to keep pace with the conflicting deductions often drawn from isolated examples of statistics, whether amended or not by additional knowledge, to realize the wealth of uncertainty that frequently attends statistical conclusions. Especially is this true in the instances of afflictions with subtle natures and divers environments, such as characterize cancer.

The geographic and time-of-life distribution of cancer especially concern statisticians and sanitarians. The anatomic distribution appeals directly to practicing physicians and surgeons. The local occurrence-center feature of the infection invites the reflections of pathologists and students of morphology. Geographically considered, cancer, as already stated, is a heritage of the human race in nearly all, if not in all, parts of the world. While it is yet unknown in some parts of South Africa (Snow) and other obscure places, it is not at all certain but that it exists, remaining hidden, however, from civilized view, because of the restraining influence of some heathen conception relating to it; especially as such conceptions have before this time thus controlled the doings of savage or superstitious peoples in other matters. Among the chief objections to the scientific value of statistical facts relating to cancer may be mentioned the inability to secure authentic complete diagnosis. The statement that a growth is malignant, when determined only by macroscopic examination, is so often fallacious as not to merit scientific confidence. Only microscopic reports of morbid growths should be given the privilege of membership in the rank of trustworthy data. I am aware that there are not a few distinguished observers who to-day seem to place quite as much confidence in the macroscopic findings of experience — their own experience — as in the conclusions of those with equal experience whose senses are fortified by the mechanism of a more exact knowledge. In any event, such reports as these should be classed by themselves, unless confirmed by reliable microscopic testimony. According to the report of qualified authority, the frequency of error thus arising is 7% in accessible growths, and for apparent reasons is increased when the growths are deep-seated.

The undoubted increase in human longevity of recent time adds many, indeed, to the list of those who from augmented years fall within the age limit of cancer attack, and thus apparently increase the spread because of a seeming greater morbid activity. And, too, it should not be forgotten that many from without seek harbor in a city for the relief which its hospitals and extended experience afford, some of whom, unfortunately, add their sad contribution to the city's death-rate from cancer. On the other hand, the life-saving means now employed in defending and rescuing the young from the bane-

ful onset of infectious disease is increasing the number of the living, and, therefore, neutralizing proportionately the apparent increase in death from cancer.

It is not impossible that the significance of the so-called "cancer localities" may be reduced to the standard of other fields of importance, when subjected to closer analyses of circumstances that are no essential part of cancer development or propagation. It is certainly evident that the slow and continuous increase of cancer, regardless of preventive measures and of human understanding, is controlled by influences of such subtle kind, as thus far to perplex beyond satisfactory solution the minds of the most astute observers.

The relative extent of cancer invasion of the accessible,³ of the inaccessible and of the intermediate parts of the human body in England and Wales during a three-year period affords an interesting study of this disease of great apparent significance, as will appear a little further along. Those superficial parts of the body falling readily under the scrutiny of the unaided eye and the touch of the physician are manifestly the seat of accessible cancer. Those deep and internal parts of the body, conveniently placed beyond the limits of unaided vision or mere touch are the sites allotted to inaccessible cancer. Those portions of the body within the reach of the finger and aided inspection are, for the most part, the sites of intermediate cancer.

The development of cancer of the parts included in each of the foregoing divisions of the body is comparatively much less manifest in individuals under twenty-five years of age than in those above that period, standing in this respect nearly as 1 to 70. The male sex suffers nearly 22% greater infliction from malignant disease than the female, during this time, which can be accounted for in part, I think, by the greater strenuousness of the male and the effect of the exposures incident thereto. The probable reasons for the greater infliction of the sexes under, than over, twenty-five years of age, it seems to me, have been considered sufficiently already.

The comparative difference between the frequency of occurrence of accessible and inaccessible cancer in both sexes, under and over twenty-five years of age is astonishing, even when proper deductions are made for the greater uncertainty of diagnosis in the latter kind. Inaccessible cancer in males of twenty-five years and under is 80% more frequent than the accessible kind. Inaccessible cancer in females of twenty-five years and under is nearly twice as frequent as accessible cancer. Inaccessible cancer in males above twenty-five years of age is three times more frequent than the accessible variety. Inaccessible cancer in females above twenty-five years of age is about 2½ times more common than accessible cancer. Inaccessible cancer in males, regardless of age, is approximately three times more frequent than the accessible variety. Inaccessible cancer in females, irrespective of age,

is $2\frac{1}{2}$ times more common than the accessible. Inaccessible cancer is, without regard to age or sex, a trifle more than $2\frac{1}{2}$ times more common than cancer accessibly located.

While it is now, and has long been, conceded that external influences, traumatic and otherwise, contribute to the frequency of accessible cancer in a greater or less degree, it is also self-evident, I think, that other and more potent agencies than these must be invoked to account not only for the occurrence of inaccessible cancer, but also for its great preponderance over those accessibly located at all periods of life, more especially the dominant one, that above twenty-five years of age. The increase in cancer visitation, in connection with advancing years, has long been a matter of common knowledge. But that the location of cancer, at all times of life and especially in adult life, should be of inaccessible rather than of accessible nature, is more than remarkable; it is even startling, suggesting in no common tone the idea that, directly or indirectly, subtler influences than external traumatism or infecting agents can exercise are active in the development and spread of cancer. Perhaps it may be consistently said that the traumatisms thoughtlessly inflicted on the gastro-intestinal tract by the yielding to the temptations and pleasures of life — while less emphatic than those directed to the external surface — are none the less potent for evil because of the fact that their frequent and prolonged action may increase correspondingly an ill effect. However this may be, it appears quite reasonable to some that cancer organisms coming somewhere from without implant themselves in the tissues and develop there, notwithstanding the inhibitory effect of cooking, the power of digestion, the opposition of phagocytosis, and the fickle element of chance.

It is fitting now to remark that there appears to be no good reason to believe that the food of a people influences their relation to malignant disease in an appreciable degree.

Intermediate cancer in both sexes under twenty-five years of age is about half as frequent as is accessible cancer in both at the same period, possibly showing thus early in life the benign effect of protection of the intermediate parts from ordinary external influences. In the male after twenty-five years of age, intermediate cancer shows a comparative decrease in rate from that of the accessible form of about 32%, suggesting that the evil effect of external influences are superior in potency or greater in number in the male than are those causing intermediate cancer. In the female during this period (after twenty-five years) the rate of accessible cancer exceeds that in the male by about 37%. The intermediate variety, however, at this time in the female exceeds the accessible form by more than 48%, showing the rapid increase in the intermediate variety due to pelvic disease, which cannot be attributed in any practical degree to infection, but mainly to the traumatisms of maternity and the age limit of certain near-by tissues. It should be stated in this connection

that the liability in both sexes to cancer of the gastro-intestinal tract gradually and quite uniformly diminishes from the stomach downward toward the external opening, but not including it. This fact seems to justify the thought already stated regarding the possibility of the effect of dietary traumatism on the stomach and the upper intestinal tract.

The age limit of the tissues of the stomach in health conforms to the nutritive requirements of the life to which they are all important; consequently this feature of the causation of cancer, which so freely contributes to the total of this disease in the mammary gland and the uterus, can play no part in the causation of cancer of the stomach, making it, therefore, the more apparent that alimentary traumatisms and dietary abuses are dominant influences in the causation of gastric cancer. Another fact which seems to confirm this position is that cancer in the male in the alimentary canal is quite seven times as common as in the female, notwithstanding the further fact of the general tendency of females to suffer from cancer of the alimentary canal at an earlier age than males. Surely, if cancer of the stomach were dependent in an appreciable degree on parasitic infection of alimentary substances this great difference in the relative proportions of infliction of the sexes should not exist. Finally, in males 80% of all cancer affects the alimentary canal. In females 80% of all cancer affects the reproductive tract, including therewith the breast.

It seems that not a little that has been said in this relation is corroborative of the belief of those who regard cancer as a nonparasitic disease, which, in any circumstance, is not communicable.

A longer continuance in theoretical indulgence would necessarily deprive us of the opportunity of speaking in an emphatic manner, of an exceedingly important practical part in the contest against malignancy. This statement is prompted by the facts that cancer appears to be on the increase in civilized countries, and also that the limit of effective operative therapy, the only agent of cure of general, settled repute, has already quite reached the confines of highest efficiency, under the present established lines of action. It naturally occurs to thoughtful members of the profession, therefore, to inquire regarding what can be done by way of admonition and protective forethought, that will secure the holding of that already in hand, while the search for increased power in curative therapy is advanced, let us hope, to a more successful issue.

As in any other field of human contention, so here the resources of every avenue of effort should be determined with care, and utilized with vigilance and pertinacity. The operative warriors in the conflict against malignancy have striven faithfully and logically during the last years of the struggle, gaining advanced foothold by means of approved technic and prompt aggressiveness. By these masterly means

in the cure of cancer of the breast, of the uterus and of the stomach, many, many years of comfort and happiness have been added to the lives of the afflicted and given to those who rejoice because of their preservation. These striking illustrations of cure in organs so profoundly concerned in the inception and preservation of life are also an earnest of the outcome in other fields of operative endeavor in this respect. Unhappily, our fond anticipations of approaching relief, encouraged by this gain on malignant disease, are so often demolished by the ruinous delay of the afflicted, in utterance and action, as well nigh to arrest the increasing hope from operative measures. Too often, indeed, during the consideration of operative interference is heard the utterance of the sad truth, "Too late," "Too long deferred," and the like, on the part of all concerned. The remedy for this lamentation is prompt surgical action; and prompt surgical action requires a prompt acknowledgment of the presence of an unwelcome growth or manifestation on the part of the sufferer, supplanted by earnest co-operation in diagnosis and treatment.

It is surely not amiss to repeat, that the outcome of operative endeavor in malignant cases, has well-nigh reached the highest possible success, unless aided by increased faith and lessened secretiveness on the part of the sufferers from a malignant infliction. Those who are afflicted with accessible growths are comparatively early aware of the presence of these unwelcome visitors. And when they shall have exercised the same degree of resentment because of physical intrusion on the part of a growth, as commonly distinguishes social or business intrusion on the part of a meddler, then, indeed, will much be gained for increased success in the struggle against malignancy. Since it now appears that cancer is located most often in the deep internal parts, beyond the safe limits of unaided sight and mere touch (inaccessible cancer) $2\frac{1}{2}$ times more frequently than is accessible cancer, regardless of age or sex, then, indeed, is the fact doubly impressed, of the necessity for prompt acknowledgment of the presence of morbid manifestations and prompt determination of their nature. The handicap by inaccessible cases because of their greater distance from the surface often enables the disease to advance undiscovered to a degree forbidding operative action when their presence is finally known. In too many instances of cancer, especially the inaccessible kind, the reasonable suspicions of its presence on the part of the patient or friends are quieted by the soothing platitudes of medical advice, until all opportunity of relief is at an end. The physician and the surgeon should join in the observation and treatment of all such cases as these, early, fostering a mutual plan of action that contemplates prompt explorative investigation in doubtful instances, and forbids delay in those of undoubted character.

It is "carrying coals to Newcastle" to state in this presence, or in that of any medical gathering of the present day, that cancer invades

contiguous tissues early in the course of its development. How early no one can know. How late no one can tell. Of this, however, we are assured: malignant activity is measured by the inherent nature of the morbid process, or by the receptive character of its host, and sometimes by both; and unfortunate indeed is the patient who is the helpless victim of both of these influences. But, on the contrary, correspondingly fortunate is one in whom each of these influences is at a minimum. A knowledge of such facts should admonish us to be charitable on the one hand, and discreetly aggressive on the other; charitable to the professional brother whose operative results may, therefore, be less fortunate than our own; discreetly aggressive so that the area of infliction may be timely removed by operative effort. Early explorative determination of the nature of disease, followed at once by operative relief in suitable cases, is to-day the potent measure of succor pending the advent of means of greater beneficence than those now at hand.

In emphasizing the pre-eminent importance of early measures of relief, one has only to point to the astonishing results which have attended the operative practice of many distinguished surgeons of this and foreign countries. And I believe that it will not be regarded by any one as evidence of unwarranted pride or of bad taste if, in this connection and on this occasion, we should mention the name of our distinguished president.

If to these means of cure there be now added another for the sake of greater security, the picture in this respect will be complete,—a means contemplating the education of the people on the great importance of overcoming reticence regarding such matters in their incipency, rather than sacrificing life by senseless delay. Patients should be taught that the evidences which they may regard as important and entitled to serious thought and decided recognition are but a step removed from the presence of hopeless despair and final destruction. They should be told that the subtle onset of malignant disease often baffles the keenest perceptions of the most experienced, requiring for arrest and for cure the best we have and, far too often, more than we can give. The exercise of vigilance in patients already operated on by those who are profoundly concerned in the cure, should be periodically and untiringly practiced in order that the first evidence of disease may be quickly detected and remedied by renewed operation. The stake of the contest in such cases as these is a human life, and all the comfort and happiness relating thereto. Every victory is another triumph over malignant infliction, of which there are very many in surgical experience. In the general struggle for victory against malignant disease, it should not be forgotten that all those fall who do not seek relief; and that all those who early seek relief will surely secure added years and increased comfort, and that not a few will be finally cured. And important it is to remember that the number

cured will be measured by the promptness of early diagnosis and curative action followed by untiring periodic scrutiny of the vulnerable points of return. The degree of fortitude required to sustain a patient under repeated malignant attacks and prompt operative defense is akin to that with which martyrs are endowed.

Finally, an emphatic warning should be given to all against the seductive influence exercised on the afflicted, by the "perversions of judgment and vain imaginings" which too often allure them from the path of scientific beneficence, trodden by honest, sympathetic aid, into the wilderness of arrant quackery, infested by ghouls of heartless gain. Nor should one hasten unduly to substitute for established method in operative cases means which are still on trial, even though encouraged to do so by honest yet unsettled opinion.

Rather than this, one should grow in courage, stimulated by examples of successive cures from early effort, and by sentiments attuned in verse by our profession's greatest poet and our hosts' brightest ornament:

"Here stand the champions to defend
From every wound that flesh can feel;
Here science, patience, skill shall blend
To save, to calm, to help, to heal."

Original Articles.

WHAT EFFECTIVE MEASURES ARE THERE FOR THE PREVENTION OF THE SPREAD OF SYPHILIS AND THE INCREASE OF PROSTITUTION? *

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It is not to be supposed that there exists at the present time a single moralist sufficiently severe, or rather insufficiently enlightened, who would dare to doubt the necessity of measures capable of combating the propagation of venereal diseases. Fortunately, the time has passed when syphilis was believed to be the result of depravity alone, and was considered as the legitimate punishment of *débauche*. The numerous sources of infection are too well known at the present time to uphold the old rigorous theories and to these I shall not revert.

Of all the diseases which may affect the human race by contagion and which brings about the greatest disasters to society in general, there is not one more serious, more dangerous, or more to be feared than syphilis. This, I believe, is generally admitted, and since this is the case, why should not the proper authority profit by the knowledge that the progress of science dictates? Many years ago Michel Lévy said: "The extinction of this leprosy of our time that is called syphilis is not above the power of governments. The sequestration and leproseries put an end to the old scourge, leprosy; the plague has been the object of an extensive and expensive prophylaxis; every nation has made sacrifices to do away with the germs of smallpox, yet syphilis has caused more harm than all these diseases put together. It silently deteriorates generation after generation; its contagion is more evident than that of the plague; why are not the same barriers and the same means of extinction built up in all countries? Such is the human race; the lightning of insolate epidemics which pass over our heads like an electric cloud, benumb and frighten people; they endeavor to prevent their return, while they become familiar with the slow and continued plagues which they carry in their flanks and which cause them to undergo hereditary ravage with the same patience that they show towards meteoric phenomena."

Syphilis is not, like smallpox, a disease whose miasms disseminate contagion to distant parts; neither is it like any of the exanthemata, susceptible of producing itself spontaneously; alone, immediate contact produces its development. Its extinction, although difficult, is not a chimerical dream; and if all nations would some day establish a complete system of international prophylaxis, much could be done for suffering humanity.

The word progress is upon everybody's lips, and modern civilization is justly proud of its numerous conquests. Scurvy has disappeared from those localities where it formerly reigned endemically; vaccination has stopped the ravages of smallpox, but syphilis still continues to be propagated and for centuries has not ceased to eat the limbs of the human race. Leprosy was done away with; why should it not be the same for syphilis?

Here, however, I would say, I do not harbor too great an illusion. If the extinction of syphilis is not theoretically a dream, the universal consensus of opinion of all governments is that, in the present condition of society, it is a pure Utopia. In point of fact, nations vary in character as do individuals, and a kind of mutual and systematic opposition is constantly present acting as an obstacle to their united action, and it is to be feared that this antagonism by continuing, will, for many years to come, offer a great resistance to the realization of any united efforts. If, at the present time, much has been done to prevent the extension of syphilis and other venereal disease, it nevertheless remains a glaring fact that there is still much to be done and that the large majority of prophylactic means now existing require great modification.

One of the most important means at our disposal for reducing the increase and spread of syphilis certainly resides in hospitalization, to which I shall now briefly refer. Formerly, all cases of infectious fever were placed in a common ward; but to-day all our modern hospitals have special wards or buildings reserved for diphtheria, scarlet fever, measles, etc. What has been done for acute infections is being attempted in chronic infections and for a number of years back we have watched the development of special hospitals or sanatoria for tuberculosis. No matter what may

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