

Engelmann (Geo. J.)

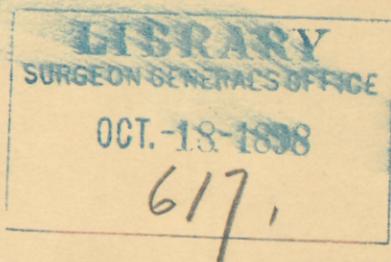
The President's Address.

The Health of the American Girl  
as Imperilled by the Social  
Conditions of the Day.

BY

GEO. J. ENGELMANN, A.M., M.D.,  
ST. LOUIS, MO.

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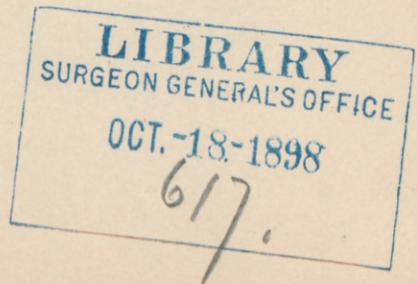
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BY GEORGE J. ENGELMANN, M.D.,  
*St. Louis, Mo.*

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ONE year ago, at the Nashville meeting, an honored Fellow, our then President, Dr. Hunter McGuire, in his eloquent address discussed the questions which had been raised as to the reasons *pro* and *con* for the existence of this Society. Was it judicious? was it called for? had we not already a sufficiency of medical societies?

Clearly, tersely, logically, he depicted the peculiar conditions which had existed, and still do exist, throughout this broad Southern land. The comparatively scant population scattered over a vast area of country, the isolation of medical men, their need of companionship, of deliberation, and of coöperation.

Whilst theory and facts do not always agree, this, the third annual meeting, has proven the soundness of his judgment and the correctness of his argument. After the lapse of one year we meet here, in this beautiful city of Atlanta, with increased strength and vigor, proud of the healthy development of our youthful Association; but the pleasure we feel in thus meeting again is marred by the absence of two of our members. The Southern Surgical and Gynecological Association mourns the loss of two of its Fellows—two of its charter members: Atlanta mourns the loss of two of its brightest stars.

Dr. Willis F. Westmoreland, *facile princeps* among his fellows, honored by his compeers, beloved for his helping hand—blessed for his healing science far beyond the walls of his native city—has dropped the busy scalpel, and has sought rest from his long life's labors.

Dr. Wm. D. Bizzell, an honored citizen, a distinguished physician, a valued Fellow, younger in years, in the prime of active manhood, has joined his aged colleague in the long, well-earned rest.

Their names are the first upon the roll of honor of the Southern Surgical and Gynecological Association, and God grant that for years to come we have none to add.

I feel a temerity in addressing you upon this occasion, here in this city of Atlanta, in the very heart of a region which claims America's greatest surgeons and gynecologists; it is the home of men who in the face of difficulties of every kind, of circumstances trying for the student of medical sciences, have graven their names deeply upon the noblest monuments of our craft.

I will not call them name by name—this galaxy of bright stars upon the medical firmament—they are too well known; the history of surgery would be incomplete without them, and gynecology unwritten but for the labors of these gifted sons of the sunny South.

It was in the woods of Kentucky that the work of McDowell was done. In an Alabama village first blazed the light of modern gynecology under the hand of Marion Sims, and in the mountains of Georgia the first step to the marvellous progress of modern abdominal surgery was taken by Robert Battey.

This beautiful land is replete with monuments which mark the great eras in the history of our science. Do you wonder, then, that amid these memories, before this audience, among whom I see so many far better able than I to represent the distinguished Fellows of this Association, I can but wish that you had chosen another, and that other lips more eloquent than mine were here to greet you? Unfortunately your par-

tiality and good-will have placed me in this position, which—I will say it candidly—is a trying one.

Throughout this country, in the meetings of general medical societies, a public address is one of the customary features, both desirable and advantageous in this era of the rapid and general diffusion of knowledge: popular fallacies are corrected and a more harmonious correlation established between the medical profession and the lay public. The intelligence of our community demands information, and far better is it that such information come from professional men, men chosen by our great bodies, than that it be surreptitiously obtained from the mass of dangerous and emotional literature, surreptitiously disseminated or from the ignorant and evil-minded, ever ready to impart their dangerous knowledge.

In special societies like this, established for the study of a special branch of medicine, the custom has been abolished, and justly so, as it is impracticable to harmonize a Presidential Address such as it should be in the interest of the Society, and such as it should be in the interest of the public. It should be upon matters pertaining to the welfare of the Association, matters of no interest to the public.

Again, it should bear upon the special work in which the Society is engaged, and if it meet the demands of the present advanced position of medical specialism it can be no more interesting or instructive to a general audience than a record of internal affairs would be.

Regardless even of this, you will appreciate the difficulties in the way of a popular treatment of a gynecological subject, yet I have ventured upon the attempt, and I ask you to bear with me. I have chosen this subject: The importance of female hygiene and the social dangers which threaten the health of the American girl, bearing closely upon the highest aims of our specialty, and bearing closely upon our common welfare; it concerns layman and physician; it concerns not alone the individual, but the State, in its broadest sense.

I need no excuse for bringing before you a subject of such grave import, and at the present time so widely debated in its

various aspects; but in this era of surgical gynecology teeming with the records of operations successfully performed, I hardly dare to call this subject gynecological, a subject so utterly void of the smoke and glare of battle in which the fashionable gynecology of the day revels.

The glitter of the knife has blinded us to the teachings of true, scientific gynecology, to the humbler phases of the science, to so simple a matter as the cause—the primary cause—of ill health, and yet there is no more important study in gynecological science than this, the initial and avoidable cause of disease, the question of female hygiene—properly speaking—the functional hygiene of woman.

To guide lovely woman in greater safety through the dangers which beset her path in life, is one of the highest and most sacred duties of our profession; for the care of woman is care of the nation; the good health, mental, moral, and physical, of the woman and mother, is the very foundation of our national growth and prosperity. You will then realize the extent and importance of this field and the necessity of a limitation of my remarks.

I shall speak to you of the girl, the coming mother; of adolescence, the most important and interesting period of woman's life—the period of greatest functional activity, during which the foundation for future health is laid; it is the most dangerous period, during which the organism, the budding mind, the developing system, are more susceptible to disturbing influences from without and within.

It is the time when the clay is soft and the vessel is forming, when it yields most readily, and trifling impressions are permanently recorded.

It is in this period of school, the period of beginning social life, the period of learning in trades, that the nervous energies of the female are most fully engaged, and her activity is concentrated on the brain, to the detriment of other functions, above all the developing sexual function, the central and most important, and at that time most readily disturbed.

That I speak of the American girl is but natural, and I

need hardly say that she is, moreover, subjected to a far greater number of disturbing influences than her sister in other lands—more recklessly exposed to the very injuries which react most violently upon the female function.

True as it generally is, that woman is the exponent of a nation, indicative of its development, of its growth or depreciation, the American woman is more closely linked with the state and fate of her nation than is the woman of other countries.

She shares the febrile activity of our existence; she is a factor in our social and political economy; she participates in the rush and crush of the times to the utmost extent of her nerve-force and brain-power, but especially is this true of the American girl as compared with the girl of other countries.

When I speak of the American girl, I speak not of the extremes, not of the rich or the poor, but of the girl of the great middle class of our cities—the typical American girl. Compare her to her hearty, strong-boned English sister: to the French girl, raised within convent walls, carefully guarded, removed from life until her marriage; or to the average German girl, reared amid the calmness of her surroundings, taught the solid rudiments of learning, and educated in household duties.

Compare her even to her sister from village or country, if she still be free from contaminating influences—from the nerve-life of city or boarding-school.

You will recognize her at once. You will recognize the effect of brain-work and nerve-strain, the rush and mental activity of the day, the want of muscular training, the want of harmony in life, in training and education, mental, moral, and physical.

Whilst I cannot agree with Ploss in his characteristics of the American girl, when he says that she has no bones, no muscle, no vitality—only nerves; and adds, what should we expect, when in the place of bread they eat chalk, in the place of wine they drink ice-water, wear tight corsets and thin shoes?

This is a sketch overdrawn, yet we may well note the picture. Is there not a great deal of truth in it? Do you not trace the resemblance?

It is a brief and cutting criticism, but I am happy to say more true twenty-five years ago than it now is.

But even now one of our greatest authorities and one of our keenest observers, Dr. S. Weir Mitchell, says that the American woman is unfit for her duties as a woman—not quite up to what Nature asks of her as wife and mother.

We are all aware of the rush and bustle, the nervous activity of our people, but we cannot realize the extent to which this is carried until we compare the life of the American girl with that of her sister on the other side of the Atlantic, and see the nerve-exhausting work undertaken by her—work far more arduous than that accomplished by the European male in similar positions.

Great harm has been done, and we do not generally appreciate the extent of the injury. Statistics of no kind tell of agonizing suffering or the first failing of health; individual inquiry alone reveals the countless sufferers.

Why is this so? Is it alone the natural influence of these conditions upon the human system? Do we find a similar depreciation in health in males during the same period and in similar occupations? Most emphatically, NO. The female is borne down by studies and labors which the male undergoes amid constantly-developing vigor.

The essential causative factor to which the ill health of the American girl must be referred is functional neglect and nerve-exhaustion; or, the neglect or ignoring of her function, and over-brainwork, over-exertion of the nerves and emotions, with imperfect development of the muscular system, an unharmonious exertion and development, physical, mental, and moral.

The peculiar organization of woman is too much ignored, and it is claimed that woman is equal to man in her primitive state, and that her function is physiological and natural, not in want of any particular attention.

The initial principle upon which the deterioration of the girl's health in labor and education depends is its influence upon the peculiar organization of woman and upon the function peculiar to woman—the very essence of her being.

Upon the susceptibility of this one particular function depends in the main the varying endurance of male and female, less so upon the general features of the organism.

Is this function of such paramount importance, and does it so completely control woman's life? This is a physiological problem upon the solution of which depend the relative capacity of woman for labor, mental and physical, and an understanding of the causes of disease, their influence and their remedies. The answer is readily found if we observe with an unprejudiced eye the existing conditions in animal and vegetable life, as well as in the human race.

Throughout all the great kingdoms of nature the importance of the reproductive function in the female is demonstrated; it is strikingly evident in vegetable as well as in animal life; it was recognized by the intuitive keenness of the most primitive peoples, and distinct expression is given to these fundamental facts by the great lawgivers of ancient times.

Differences in sex are more or less well marked throughout the vegetable kingdom, and the supremacy of the reproductive function in the female, with the necessity of additional vitality for its perfect performance, is distinctly characterized.

It is well exemplified in our common hemp, which develops *more than* 50 per cent. of male plants when the seed is fairly distributed over fertile soil, as a superabundance must be provided for the necessary waste which follows the distribution of male pollen by the winds. If the seeds are thickly sown, so that nutrition is insufficient or scant, the number of female plants will be diminished, as the supply requisite for their greater vitality is wanting; and if densely crowded the female plant may be altogether unable to develop.

To the fruit-grower, the great demand of vitality for the reproductive function is well known. The apple tree with

luxurious growth and abundant foliage bears no fruit, its vitality all being directed toward the one function of vegetable growth; to reduce this the tree is girdled, when, with the diminution of growth and foliage, it again fruits. Thus harmonious development of the function is as necessary for the symmetrical growth of the plant as it is to the perfect development of the human being.

The high importance of the peculiar function of woman, which it is the tendency of our enlightened nineteenth century to undervalue and ignore, was fully appreciated by the peoples of olden times, and the necessity of functional hygiene for the welfare of the community was recognized to such an extent that it was made obligatory by laws of custom or religion; and the highest penalties, expulsion from the community, everlasting damnation, and even death, were imposed for certain transgressions of these laws—transgressions which are thoughtlessly practised to-day by the refined and enlightened beings of our advanced civilization.

The essence of such laws and customs of the savages of to-day, in fact of all primitive peoples from past to present, was rest, functional rest.

Instinct and experience have taught primitive peoples these truths, which are in our day but imperfectly realized even by medical science; and denied by some, who call the susceptibility of the woman of to-day, and her ailments, unnatural, and claim them to be altogether the results of civilization.

They claim that woman in her natural state is the physical equal of man, and constantly point to the primitive woman, the female of savage peoples, as an example of this supposed axiom.

Do they know how well this same savage is aware of the weakness of woman and her susceptibility at certain periods of her life? and with what care he protects her from harm at these periods? I believe not.

The aid of religious superstition, the anger of the gods was invoked to secure this simple but effective female hygiene, to secure the much-needed rest. Rest, rest by isolation during

the periods of functional activity, up to nine days each month, up to thirty and ninety after childbirth, and up to five months at puberty.

The budding of the maid into womanhood is marked by a prolonged period of rest and isolation, and her return to her tribe is celebrated by ceremonies of various kinds.

In Cambodia this period varies, according to the position of the family, from several months to three and five days.

Among some of the tribes of North American Indians the isolation lasts thirty days, the girl not even being visited by family or relatives.

So among the Bedas of Southern India, and more or less among all primitive peoples, although frequently the time given is not more than five or ten days.

The importance of surrounding woman with certain precautions during the height of these great functional waves of her existence was appreciated by all peoples living in an approximately natural state, by all races at all times; and among their comparatively few religious customs, this one affording rest to woman, was most persistently adhered to.

It is the idea of religious uncleanness clinging to woman at these periods which makes her isolation a necessity of their superstition, and a possibility.

This idea has been so deeply impressed that a mere touch is looked upon as contamination, and she is accordingly obliged to desist from all the ordinary duties of life and removed from its exertions and excitements by forced isolation. Where isolation is not customary, as we find it among peoples approaching civilization, a certain characteristic mark or signal is worn, for the wearer a passport of safety. Thus in the East of India young girls show their condition by a small piece of linen steeped in blood, which is worn at the neck, as I have myself seen in the Nautch girls, brought to this country for the purpose of exhibition, and the Woloff negress wears a bright-colored folded cloth upon the chest. The idea is everywhere the same, the difference is merely in the method of expression.

The necessary rest is accorded woman during the menstrual period, during the period of susceptibility, from three to five, and even more days each month throughout functional life.

We either find that a hut is erected at some distance from the village, as among the Bedas, in Cambodia, and on the Isle of Yap, one of the West Caroline Islands, or that a certain house is assigned for the purpose, as a place of seclusion, within the village, as in New Caledonia, upon the coast of Guinea, among the Kaffirs, the Hottentots, and the American Indians; the Hindoos, the Nayers, of Malabar, and others assign to the woman, in families favorably situated, a separate room in her own house.

In Japan, likewise, she is confined to a separate room, not permitted to eat with the family, and forbidden even the visiting of the temple, admitting no possible excuse for leaving the house. Work of every kind and the bath are strictly forbidden—the dangers of cold water at this time being thoroughly appreciated by all these peoples, whilst it is a necessary part of their religious teaching that she takes a bath before returning to the village and her family after the wave has passed.

Among many we find a period of three to five days of the most perfect rest and isolation, followed by a similar period less strictly guarded.

The laws of Moses and Zoroaster are almost identical, pointing to these great functional waves of woman's life as a working of the gods.

The laws of Zoroaster necessitated a seclusion of four nights for woman, and, what is remarkable, she was then forced to determine her condition positively by examination, and if the flow had not completely ceased, indicating an abnormality, additional precautions were observed: she must remain five more nights, to which nine days were added, after which time she might cleanse herself and return to life.

Moses ordains complete seclusion for seven days, followed by partial restriction for seven days more.

The necessary rest is likewise prescribed after the trials of parturition, and in the laws of Moses and those of Zoroaster,

the puerpera is secluded for forty days after the birth of a female, and eighty days after the birth of a male child, and then considered in a state of partial uncleanness for forty days more.

Whilst rest after labor is so carefully observed amongst these peoples of a higher civilization, who already show its debilitating influences, it is not common among primitive peoples—peoples in a natural state, whose healthful vigor is not yet undermined; in fact, we know that the Indian woman, like many of her sisters on other continents, gives birth to a child, and soon continues her march with her wandering tribe.

Woman, even woman in all her primitive strength, cannot be compared to man in nerve or physique.

The life of woman does not run smoothly as does that of man, it is characterized by marked periodicity, by ebbs and floods, by great life-waves, which are dominant in the sphere of her especial functions; waves of vascular tension and nerve excitement, marked by a heightened activity and susceptibility of her entire being, distinctly indicating that woman's periodical activity is not a local process, as we have been taught, but one involving the entire female organization, as it was held to be by the ancients, and exerting a permanent influence upon that organism of whose condition and development it is indicative. This function of woman involves the entire vascular and nervous system, and may be said to be the central exchange of that great network of wires—the vaso-motor nerves—linked with the great sympathetic and the cerebro-spinal system.

This is so evident that I will not recall any of the many well-known facts patent to all, which indicate the prevalence of this function, but I do wish to insist upon a careful consideration of the conclusion to which such knowledge must lead, namely, that in order to insure a healthy organism, a perfect woman, the proper care must be taken to admit of a healthy development of this one central function, and the proper

precautions must be observed to admit of its natural and healthy activity.

We may depict the great wave of female life most graphically by the customary curves, so strikingly different in their variations, the frequency and intensity of rise and fall, the abruptness of make and break from the straight line of man's life, rising slowly at puberty to decline as gently with old age; it is the difference of the towering waves of a storm-lashed ocean and the gentle swell of a calming sea.

The most persistent period of nerve and vascular excitement is that of developing womanhood, when the system is in a period of unusual activity and susceptibility, which does not cease as speedily as we see its outward tokens disappear. Then follow the cyclical changes of mature activity—the menstrual periods, varied by the higher waves of active reproduction.

The period of highest vascular tension, of greatest nerve-excitement and functional activity, is not that usually looked upon, and characterized by the sanguineous discharge, as the climax, but the one immediately preceding, and this is not understood by the layman, nor is it generally appreciated by the physician.

At each period the functional wave slowly rises until it reaches flood-height, with an increase of nerve activity and vascular tension, accompanied by a rise of temperature, as Mary Putnam Jacobi tells us, of from  $0.1^{\circ}$  to  $0.8^{\circ}$  F., and it is during the decline of the wave that depletion takes place, that the menstrual flow occurs, when the distended vessels rupture and nature relieves herself, the temperature steadily sinking, but not reaching the normal until after the cessation of all external symptoms.

This physiological fact is well exemplified by many pathological conditions, above all by the numerous reflexes, evidences of disturbance in the reproductive function, reflected in distant organs, which occur mainly during the period of vascular and nerve tension in the week preceding the flow.

Are we to believe that a function which so deeply impli-

cates the entire system can be disregarded? that it does not demand especial care—greater care than functions less general, less susceptible, less intimately connected with the organism?

Are we to believe that this function can be ignored? are we to be guided by the dangerous arguments of those who claim that precautions are unnecessary at this period?

Let us look but for a moment at the ablest of these arguments—that of Mary Putnam Jacobi—which is a most scientific and admirable one, in which she seeks to prove that rest during periods of functional activity is not necessary to the health and well-being of woman. An admirable essay, but most deceptive to the superficial reader. It tells us that rest, bodily rest, at this one time for perfectly healthy woman, engaged in physical labor, is not essential.

This is indeed true, but at the same time she tells us that 46 per cent.—almost one-half—of women are not in perfect health.

She tells us that in *healthy working women*—that is 54 per cent.—engaged in purely *physical* labor no rest is required *during this* time, but that *even these* require *modification* of their work; that woman will do better work, and *with greater safety to health*, when her work is *frequently intermitted* at *short intervals* and that *even rest lasting longer* at *long intervals*, will *not* answer.

We find that *simple physical work*, *monotonous* in character or in *constrained positions*, will *injure* even *healthy women*, if *continuous*.

The sensitive condition of woman when the functional wave is at *flood-tide*—that is, during the *week preceding the flow*—is strongly characterized as the *period of greatest susceptibility*, and by convincing arguments it is proven that school-girls, and young girls with *mental work*, need *great care*, even individual attention, *during this time*.

We are told that the ganglionic nerve-cells of woman are more easily exhausted, hence prolonged effort, requiring prolonged generation of nerve-force, is far more readily followed by collapse than is the case with the male, and such *collapse*

of the nerve-centre acts upon this most vital of all functions—the reproductive function; in other words, woman is more susceptible to injury from over-brain work or nerve-exhaustion, and the result is not simple nerve-tire, as in the male, but the disturbance of a function which underlies and pervades her entire being; hence, *work* which in the *male* causes a mere *temporary tire*, causes *permanent* injury in the female by the reaction of *nerve-exhaustion* upon her *susceptible function*.

In considering the initial causes of disease in their effect upon woman, we must analyze not alone this one function, but we must consider the entire being of woman, that we may apply the proper standard, and that we may not measure her capacity for labor, mental or physical, or her powers of endurance, with those of man. Woman—above all the woman of our civilization—cannot be properly compared with man; she is differently organized, differences of many kinds exist—the most obvious, of course, external and anatomical.

The form of woman is smaller, more rounded and symmetrical, her bones are more delicate, the joints are smaller, the protuberances less marked; the head is smaller, the chest shorter and broader below, and the hips are wider.

Form and shape differ; her organism is a different one, individual organs are said to be more vascular and more nervy, she is more emotional, more readily exhausted, less able to bear continuous and prolonged application; more blood is produced, the circulation is more active, so also the respiration. The period of puberty is shorter and more marked, and the last stages of development are reached at an earlier period in life.

Consider her lighter frame, her nervous organization, her emotional nature; consider the constant activity of the reproductive functions, the influence of this sphere upon her entire being; the intimate connection of every organ, above all the spinal cord, with this reproductive centre; and then, need we wonder that injury befalls this sensitive organization when exposed to the intense and continuous nerve-and muscle-strain

of our present systems of education and labor upon a basis of male vigor?

This overstrain has left its mark upon the American girl of the day; the evil is great, but I am happy to say that an improvement in her physique has become distinctly evident of late years, due to progress in the science of hygiene, and its better understanding by the educated public, and perhaps to the introduction of sound physiological and hygienic doctrines in some of the more advanced schools, but above all to the fashion—to the increased popularity of out-door sports.

In the higher classes we mark this change, and we may thank a benign Providence for the change of fashion which has produced the result. To-day the girl must have a good color, a healthy figure, a brisk walk, to be in the swim; riding and walking, lawn-tennis and rowing, even fencing, have become fashionable and are working wonders upon the health of the American girl who can afford these luxuries—the same girl who twenty years ago drank vinegar to acquire a fashionable pallor and an early grave; languor and pallor are no longer elegant; physical health, skill, and strength are admired; fashion does her share by the approval given to sports leading to muscular development, and education is endeavoring to right the wrongs done by encouraging the training of the body.

Compare the swinging gait of the girl of to-day, with the mincing walk and the Grecian bend of some years ago.

A beginning has been made, but the greatest difficulties are still to be overcome; the American girl has a just claim to the most perfect and harmonious development—mental, moral, and physical, by virtue of the invigorative influences of an intermingling of race and blood, the favorable hygienic possibilities of her life and the freedom she is given. But the average girl is not what she might be.

She suffers from nerve and physical prostration, irregular and imperfect functional activity, impaired circulation and digestion, diminished reproductive power, neurasthenia and

functional disturbances, constantly intermingled as cause and effect.

The result in later life may be gathered from statistics; thus the investigations of Mary Putnam Jacobi show but 46 per cent. of women with healthy functional life, and a similar result is given by the New York Census, which shows 24 per cent. of women childless, 20 per cent. sterile after one child, and 50 per cent. of the women of New York and New England with enfeebled vitality and unable to perpetuate the race.

To over-brainwork and nerve-exhaustion in the large middle class of girls, to over-nerve-pressure in education and labor, we must look for the great causes of this state of affairs.

Statistics of functional health during school-life are out of the question, and we must refer to a few general facts and to our individual observation for an estimate of the influence of school-life upon functional activity and female health.

We have all seen the once healthy girl returning from school, above all the pernicious boarding-school, neurasthenic, with flushed face, cold feet, impaired digestion, backache, painful and disordered function, all of which symptoms gradually fade with the enjoyment and recreation of vacation, to return with the next session of school.

It is the American idea of putting one through which lays the foundation of evils which not only follow the individual through life, but pursue her in her descendants; it is the idea of finishing her education—a given job to be completed before the pleasures of society can be anticipated—almost invariably fatal for the bright, gifted girl in her last year at school; this is the source of beginning functional disturbances. She is straining every nerve for the dangerous struggle of supremacy, and, cost what it may, her ambition must be gratified; she must graduate with honor before making her *début* in society, and even now her emotional nature is stimulated and excited by the foretaste of its pleasures; evenings which should be devoted to rest are given to boy visitors and dancing parties; healthy recreation, out-door exercise, and the necessary sleep are neglected; whilst school gymnastics, calisthenics, or official

recreations do not afford the healthful pleasure and exercise needed. An increased quantity of blood is diverted to the brain, whilst the general supply is diminished and the circulation impaired; lassitude, malaise, and local trouble follow. Is it to be wondered at that she breaks down? that the mothers best fitted to produce capable children fail to fulfil their destiny?

In boarding-schools enervating routine takes the place of social dissipation, but the results are the same, if not worse, as the girl is removed from her natural guardian and adviser—the mother. The first evidence of derangement is a disturbance of the reproductive function; and one statement from the pen of Dr. Goodell will best indicate the frequency of the injury. He tells us that he has been repeatedly asked by the physicians attending such institutions whether it were possible that laundresses could have drugged the scholars, unbeknown to them, in order to avoid the washing of napkins soiled as they would be by healthy activity? So common is the complete cessation of that essential function in the most critical period, in girls removed from home influence with a view of securing the supposed better advantages, that teachers have begun to look upon this condition as entirely immaterial, unworthy of any consideration, either because they will not have the pupil even temporarily withdrawn, or because they see but the comparatively slight immediate constitutional injury, and are ignorant of the damaging sequences by reason of their slow development.

How the result is viewed by the profession, we may see from the picture drawn by Dr. Reeve, of Virginia, who describes the fashionable boarding-school girl, as we commonly see her, returning home “broken-down by the heavy load of popular fooleries, faded, ignorant of woman’s mission and her influence on the destinies of the race, a fraud upon her doting self and her admiring parents, a fraud upon society in its true sense, and if she reach maternity, succeeding only in propagating misery and misfortune.”

This is the state of affairs in common schools and boarding-

schools, at the most critical epoch, from twelve to eighteen. Now let us inquire into the results of so-called *higher* education: the showing is a better one, as we may see from the report of the Association of College Alumnae who have investigated the present health of female graduates as far as practicable.

The health of such of the girls as responded to the inquiry was very much the same as that of their parents, but 3 per cent. better, constitutional weakness being mostly the cause of such disorders as did exist. Overwork, accidents, and bad sanitary conditions would explain others we are told, and while at college the deterioration in health was  $2\frac{1}{2}$  per cent. less than in the working girls of Boston at the same time.

Worry over studies alone, strange as it may seem, is said to have caused no decline in health, whilst worry over personal affairs caused decline of health in 10 per cent., and worry over studies and personal affairs combined in 15 per cent., and the health of those who declined in college has more than recovered in later years.

During college-life proper we find but a very slight falling off, and that only from excellent to fair health; but this is not to be wondered at if we consider that it is only the healthier and stronger girls who venture upon higher education, and that one-half of these avoided exertion during the menstrual period and saw but little society.

We must bear in mind that college education is an innovation of recent date; the system is an improved one, in the establishment of which modern hygiene has been consulted, and study and recreation, as well as the health of the pupils, are subject to constant medical supervision; moreover, in some of the more advanced institutions good health is made a condition of admission; and yet Miss Howe, of the College Alumnae committee, finds that only four hundred and ninety-six out of one thousand graduates married between the ages of fifteen and sixty, and she concludes, notwithstanding the great improvement in system, that the tendency of higher education for woman is to celibacy; if this is by choice or necessity—

for reasons moral or physical—she does not say ; it appears to be the natural result of misdirected culture.

The injurious effects of our present system of female education upon the essential function of woman must be apparent if we bear in mind the period of life from twelve to eighteen, and eighteen to twenty-one, during which time the girl is subjected to the greatest strain, when nutrition should be directed to the essential organs of female life, whilst all other tissues and organs are in active growth, likewise demanding increased supply ; it is then that an increased expenditure of vital energy is demanded, and the brain concentrates upon itself the nutritive fluid ; it is at this time when the system is most susceptible to disturbing influences of all kinds, and in an almost explosive state during one week of each month, that it is subjected to the greatest strain, to over-brainwork, nervous and emotional excitement, and even physical injuries.

Are the results not natural when we consider that girls, in this dangerous period of life, spend more time in study than boys, that they lack the invigorating influence of out-door sports which serve to develop the boy, that the Greeks withheld even male children from study until the tenth year, while laying a solid foundation for a healthy physical system and a harmonious development of the functions ?

The developing female organism is more or less injured by this mental crowding, and very similar is the injurious effect of our systems of *labor* upon the developing girl and the reproductive function, but less occult and more marked than that of education for the reason that the unfortunate sufferer cannot withdraw, like the school-girl, at will, or when the evidences of injury are distinctly felt, but is obliged to continue until she is prostrated.

It is not manual labor only, it is not alone wear and tear on muscle which tells ; nerve-wear is still more injurious. It is the girl in the employments now so much affected as a so-called *higher* class of female labor—in telephone and telegraph offices, the clerk, the type-setter, and the stenographer

—who suffers most. Examples of this kind are unfortunately frequent.

We see girls enter the office in good health, cheerful and happy, with healthy function; within a year or two they begin to fade, symptoms similar to those we see in the school-girl appear, and as the power of resistance diminishes, the susceptibility to vasomotor irritation increases, backaches and menstrual pains begin, nervous headaches, anæmia with leucorrhœa and painful and profuse menstruation, at first purely nervous in character, a mere functional disturbance, gradually leading to local disease, to displacements, anasarca, œdema, coughs, and more or less decline. The *causes* are *errors in industrial employ*—an employ wholly *regardless of the all-important function*—and the sources of injury are most intense as they combine an abuse of functions, physical and mental.

A most interesting report is given by the Bureau of Labor Statistics of 1875, on the special effect of certain forms of employment on female health, from which I shall quote, as it is the first, perhaps, which has regarded the cardinal relation which labor bears to the essential attributes of the forming woman, on which hinge all other vital results.

It is startling to the uninitiated, to follow the effects of the so-called higher; and supposedly lighter, occupations upon the female function: the terrible strain upon the counting clerks in the United States Treasury, in Washington; the wear upon the conscientious stenographer, the influence of increased responsibility upon a young telegraph operator, when first in a responsible position, and the inevitable sequences of constant nerve- and mind-strain of all kinds.

The alarm-bell, the first evidence of coming trouble, is menstrual disturbance, and how rapidly nerve-strain reacts upon the functions is well exemplified by the case of the young telegraph operator, in good health, being suddenly crowded by an unexpected rush of business during the menstrual period; the result being complete cessation of the flow, general prostration, with slow and imperfect recovery, due to

disturbance of the essential function and permanent pelvic weakness.

It seems that in the forming period the tendency of nerve-strain on the laboring girl is to repress the function, whilst later it is to render it more frequent and more profuse.

In the main these functional disturbances are produced by over-work, with innutritious and non-sanitary association and labor of both body and mind, the regular and long-continued employ of the plastic, undeveloped girl, and the long day's work with unremitting attention.

As causative errors in the management of labor are mentioned in this most admirable report the following :

1. *a.* Youth unequal to the work.
  - b.* Impairment of animal growth.
  - c.* A constrained position.
2. *a.* A disregard of ultimate injuries.
  - b.* Unbroken application, without vacation, for long terms.
  - c.* Depression and disease inviting demands on immature vitality.
3. Employ in unsuitable occupations for condition of body and mind.
4. *a.* Unduly long hours.
  - b.* Concentration of vital energies, involving extreme nerve-tension.
  - c.* Unfavorable sanitary surroundings.

That we may have some idea of the extent of the injuries so caused, I will briefly quote their effects upon the sufferer herself as well as the community at large, as presented in this carefully-prepared summary :

1. To the sufferer.
  - a.* Lessened labor ; less life comforts.
  - b.* Increased expense ; loss of vital force, time, money.
  - c.* Usually lessened capacity for future production.
  - d.* Bodily and mental distress leads to intemperance and crime.
  - e.* Less probability of maternity or vigorous offspring, in more or less loss of social happiness.

2. To society.
  - a. Greater burdens; extra unremunerative hands, causing care and expense to the community.
  - b. Diminished production—present and future.
    1. By the loss of what the disabled labor would have produced.
    2. By loss of the natural increase of what it would have produced.
    3. By loss of labor of nurse caring for the sick.
    4. By loss of offspring, or by weakness of offspring.
  - c. Loss to the general tone and work of society.

Thus, from the investigations of the political economist, we may see how far-reaching these so much-neglected and misunderstood—supposedly purely medical questions—prove to be.

Constant injury is wrought by the error of system in school-room and workshop, but potent and more directly evident causes of ill health and functional disturbance in the growing girl exist in our daily life, our social customs, and our habits of dress. To the latter I will not refer; they are too well known.

The constriction and compression of the corset, the dragging pounds of the skirt, the circulation-impeding garter, the insufficiencies of low-necked dresses, of filmy stockings and thin shoes, and the total absence of protection where it is most needed, the absence of drawers.

Among our *social customs* there are many which have wrought injury to woman. I cannot even touch upon all these; there is but one of which I shall speak, and that the *most dangerous* of all, more or less underlying all other causes of ill health; it is the *ignoring of the function of woman by woman*—by the mother—and her ignorance of its import.

Fearful are the sequences of woman's ignorance, the calamities which follow the course of the misguided mother, swift, certain, and lasting the penalties inflicted upon the unadvised or ill-advised girl, whose one great misfortune is ignorance of self; in darkness she steps into the unknown sphere of

womanhood, and in darkness she pursues its irregular path; fortunate she who may by chance not stumble!

Many who might be saved by proper management during the transition from adolescence to maturity now fall victims to their ignorance. Inquire among your surroundings, inquire of such even as you deem strong and well, and you will be amazed to find how many trace the destruction of vigorous health and function to ignorance of self at that time. Tilt, as far back as 1853, in his admirable work on the *Elements of Health and the Principles of Female Hygiene*, clearly points out this fact.

Out of a large number of girls he tells us that twenty-five per cent. were unprepared for this eventful epoch in their lives, and thirteen of them at once fell victims to their ignorance; impairment of health followed cessation and disturbance of the unknown function, caused from nervous excitement in seven, from physical abuse in six; of these sufferers from nervous fright, in three it never returned, and two of the six who injured themselves by the use of cold applications never regained that health which was long impaired in all. My own experience is a similar one. The desire to check the bleeding wound by cold water is very common.

Great is the danger in all classes, be it from an almost incomprehensible ignorance, or a false and perversible modesty; but most susceptible is the highly-strung nervous system of the more refined organization. Even though the bark float in safety through the first stormy epoch of life, it is constantly endangered, from the ceaseless crash of the ever-recurring waves of functional activity, as well as from the great flood-waves of reproduction, and the frail vessel remains in need of guidance until it has passed through a final storm into calmer waters. The mother is the pilot, and functional hygiene the guiding chart, the physician the engineer who traces the guiding lines.

I cannot exaggerate the danger to the delicate bark, to the health of the susceptible girl, from each wave of functional activity, from each single period, and I may add that the

greater danger is during the height of the wave—the period directly preceding the flow and the time of its inauguration; that period of greatest activity throughout the entire system, the period of vascular pressure and nerve-excitement, which threatens woman's function as much as does the era marked by local depletion and depression, the menstrual period itself, the decline of the wave.

The first and greatest danger is during puberty; injuries to female health, perhaps occult, yet undermining, at this epoch are fearfully frequent. To innumerable women has fright, nervous and emotional excitement, exposure to cold brought injury at this time. What more natural than that the anxious girl, surprised by the sudden and unexpected loss of the precious life-fluid, should seek to check the bleeding wound—as she supposes?

For this purpose the use of cold washes and applications is common, some even seek to stop the flow by a cold bath, as was done by a now careful mother, who lay long at the point of death from the result of such indiscretion, and but slowly, by years of care, regained her health. The terrible warning has not been lost, and mindful of her own experience she has taught her children a lesson which but few are fortunate enough to learn—the individual care during periods of functional activity which is needful for the preservation of woman's health.

I have just seen the wife of a colleague, a fellow-practitioner, whose health has been permanently shattered by a physical injury during the period of development; a daring horseback rider, the active young girl sought the most spirited animals. At the period of highest vascular tension, upon the approach of womanhood, she was thrown violently by a vicious horse, a hemorrhage ensued, and with it came the first appearance of the function disturbed in its incipiency. No noticeable physical damage was done, and when she recovered from the shock she was supposed to be well; yet her function was impaired to the permanent injury of health, even after months of confinement has been the penalty sure to follow any

attempt at the active pursuit of duties such as might be expected from any woman, wife, and housekeeper in her position, in ordinary health.

An equally unfortunate case is that of a school-girl, bed-ridden for an entire year, who has come at length to seek restoration of health, of impaired functional activity, due to nervous excitement and physical exposure at a critical epoch; whilst at boarding-school she was surprised in mid-winter by the unexpected news of her mother's death. Heated by hasty preparations for departure, she took the long drive to the railroad station in the frosty morning air with imperfect protection, during that dangerous period of vascular tension and nerve-excitement. She arrived chilled to the bone, the function was checked, and the very foundation of health undermined; the tottering structure was completely shattered by the sad scenes which awaited her, and the nerve-strain of the next boarding-school session finished her. She returned to her home, with all the honors of a valedictorian, an invalid.

Another of these unfortunates is a young matron, ruined in health, with serious functional disturbances, the result of fright and exertion at the breaking out of a disastrous fire in her home at the very moment of beginning functional activity.

And here a young girl of magnificent physique, whose once brilliant complexion has faded, whose nervous system is wrecked, her strength broken by a similar accident during the susceptible period; the burning of her suburban home at night, and her flight in bare feet through the snow to a neighboring house some little distance away.

The sequences to the male might have been a violent catarrhal inflammation, or a pneumonia, but it is not cold, pleurisy, or an attack of rheumatism which follows; no, the ordinary physiological functions are unimpaired; it is that *one essential feature of woman*, the reproductive function, which suffers—and suffers to the detriment of the entire organism.

I will mention but one more, and that a most sad and touching case which concerns a fellow practitioner; the death

of a beloved wife, the blasted life of our colleague, may all be traced to a mother's neglect, to a woman's ignorance of her function.

This charming, beautiful girl, the most splendid example of harmonious coördination, of perfect development, mental, moral, and physical, was wrecked by a cold foot-bath during the period of functional activity. A mother had not told a healthy girl of the care necessary at this trying time either because she did not know, or because she thought her healthy strong daughter as proof at this time as at all others. This strong physique was reduced almost to invalidism, and slowly but imperfectly recovered after years of wretchedness. She married, but never conceived; though never strong, she lived a happy life under the sheltering care of a loving husband, until a shock, which a healthy organization would have readily resisted, caused her untimely end. And this shock, I will add, was due to another of the unfortunate errors of the times—the surgical fervor; it was the result of an unnecessary surgical operation, hastily performed, under a mistaken diagnosis.

I will detail no more of these countless sad cases. These will suffice to point out how frightful are the results of such ignorance, how many a life has been lost, and how many a woman has been crippled, more or less invalidated for life, by such ignorance, or unconsciousness of self.

These are facts which are unknown to, or ignored by the laity, and which, as a rule, do not directly reach the physician, as he is not summoned unless the immediate result be most intense; mother, nurse, and friend quiet the unhappy girl by the statement that "it is natural." Fortunate indeed is the exceptional woman, who, by accident, passes unscathed through the ordeal, as the storm-driven, pilotless bark is sometimes carried in safety to a sheltering harbor, and happy she who is guided by the judicious counsel of a loving mother; but great are the numbers of those who are injured or wrecked in this susceptible period, or at a later day by the lesser waves of mature life.

RÉSUMÉ.—I have endeavored to show that the health of the American girl is threatened and impaired by causes more or less avoidable, as they are due to our methods of life, our methods of training and education; that the physique of this girl, most favorably situated, amid auspicious possibilities, is imperfect; her brain overworked, her nerve-power exhausted, her function impaired, and reproduction endangered; all by reason of the susceptibility of her peculiar organization, and the increased impressionability of the sensitive system during the years of development, in which it is subjected to the most severe strain.

Such are the facts: a remedy is called for, and this remedy is self-evident, if we consider conditions and causes.

Let me briefly review the conditions as we have found them: a perfectly organized being receives the first shock in the very beginning of woman's existence, and is already fading upon the rising of the great wave of functional life, during the period of functional development, and should she have passed this in safety, she must suffer by the very nature of our systems according to her station, in labor or education. Her appearance is indicative of nerve and physical prostration, with impaired circulation and digestion, imperfect menstruation, and diminished reproductive power; neurasthenia and functional disturbances constantly intermingled as cause and effect, and these important results are brought about, in the main, by more or less the same influences.

1. Over-brainwork and nerve-strain, with neglect of the physical system, in education.

2. Nerve-strain and partial or incomplete muscular activity in labor.

Both, influences which are inseparably connected with, and complicated by, causes more active and independently potent; which are:

3. The ignoring and neglecting of functional hygiene.

4. Physical and emotional strain of society, improprieties of dress, and over-stimulation of the senses.

The *remedy* is: *attention to woman's peculiar organization*

and the *cyclical waves of her dominant function*; or, in other words, *harmonious development and occupation of nerve and muscle*; diminished brain-work and nerve stimulation, with increased and coördinate physical exercise; increased protection and diminished compression of dress; *self-knowledge and individual care during periods of heightened susceptibility*.

*Changes are necessary in custom and fashion, in methods of labor and education.* Whilst each individual and each calling is a law unto itself, I may say, in a general way, that we should endeavor to obtain the end of education in its widest sense, which, I would say, is to develop all functions and faculties, to render the girl fit for the life she is to enter in every way; "to render youth beautiful, healthful, strong, and honest."

A harmonious co-education of mind and body should be approximated, with coincident maintenance of proper hygienic conditions. The nerve and emotion strain of class competition must be abolished; the stress of constant work, the train of thought, and the routine of regulation must be broken; mind and heart should be educated rather than memory, the nerve-strain varied by healthful pleasures and physical exercise in the open air, all relieved more or less, according to individual necessities, during periods of heightened susceptibility.

Whilst the initial causes of ill-health in the school-girl may readily be overcome, the dangers which beset the laboring girl, though equally evident, are more difficult of removal. The same necessity exists for individual care, upon the height of the functional wave and during its period of decline, the same necessity for a proper coördination of labor, physical and mental; the same danger from constant application; from strain of one part, one function or organ to the exclusion of others; nerve-tension is even more continuous and intense, and muscular exertion is limited to individual muscles.

The years of development should be respected and the continuity of labor broken; rest and change afforded frequently for short periods.

Much good might be done by the necessary changes in customs and fashions, by suitable dress, last, but not least, by self-knowledge, and I will close with a plea for the self-care of the girl and her proper physiological instruction by the mother, which alone will mitigate or remove the initial cause of many of her ailments.

*Upon the mother I wish to impress that the perfect development of the female function, and the maintenance of this function, once developed in a healthy condition, is essential to the perfect development of the girl and the perfect health of the woman; that self-care, a well-regulated female hygiene, is the foundation of her well-being, and that it is the mother's first duty so to guard herself and so guard her daughter.*





