Some conditions of adolescence in which Fellows' hypophosphites is beneficial / [James I. Fellowes].

PART IX.

Adolescence.
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Adolescencia.

SOME CONDITIONS

OF

ADOLESCENCE

IN WHICH

FELLOWS' HYPOPHOSPHITES

IS BENEFICIAL.

[*FOR THE MEDICAL PROFESSION.*]

PART IX.

NEW YORK: 48, VESEY STREET.
PARIS: 5, RUE DE LA PAIX.
LONDON:
JAS. I. FELLOWS, 56, HOLBORN VIADUCT, E.C.
1889

To the Medical Gentlemen who have honoured me with the Reports and Testimonials which so greatly enhance the value of my publications, and to whom the works are respectfully dedicated, I tender the most cordial thanks, with the assurance that the contributions shall be used in such manner only as is consistent with the ethics of the Profession.

JAMES I. FELLOWS.

LONDON, *September*, 1889.

NOTICE.

Since going to press, a rumour has reached Mr. Fellows that certain Chemists are advising Physicians to prescribe an additional ingredient when ordering Fellows' Hypophosphites, in order that their patients may avoid the payment of the stamp duty.

Although this advice is doubtless offered in good faith, Mr. Fellows is of opinion that such a course would not only lessen the chances of obtaining the genuine preparation, but possibly offer inducements for overcharging as well. He cannot, therefore, recommend it, and thinks it would be safer for patients to pay the stamp duty, and thus be certain of what they purchase.

PREFACE.

In consequence of the cordial reception accorded to his previous pamphlets by the Medical Profession, Mr. Fellows presents the present Brochure with increased confidence. Like all its predecessors, this is to some extent a *résumé* of the opinions and experiences of leading Physicians, and is submitted as possibly suggestive of other ideas.

During the past year, Mr. Fellows has had renewed cause to thank the Profession for their continued appreciation of his Syrup of the Hypophosphites, as evidenced by the written testimony of a large number of Medical Practitioners, by its increased employment in disease, and also by the ill-success of its imitators.

While once again offering his cordial thanks for their continued confidence and support, Mr. Fellows repeats his promise to guard, as in the past, the uniform high character of his preparation; to uphold the honour and dignity of the Profession, and to sustain consistently and honestly the sentiment of good faith, which has been his motto during by-past years.

SOME CONDITIONS

OF

ADOLESCENCE

IN WHICH

FELLOWS' SYRUP OF THE HYPOPHOSPHITES

IS BENEFICIAL.

That charming writer, Oliver Wendell Holmes, once discoursed with subtle power upon "Late Pears." He said:—"Men often remind me of pears in their way of coming to maturity. Some are ripe at twenty, like human jargonelles, and must be made the most of, for their day is soon over. Some come into their condition late, like the autumn kinds, and these last better than the summer fruit; and some that, like the winter helis, have been hard and uninviting until all the rest have had their season, get their glow and perfume long after the frost and snow have done their worst with the orchards. Beware of rash criticisms; the rough and

stringent fruit which you condemn may be an autumn or winter pear; and that which you picked up beneath the same bough in August may have been only its worm-eaten windfalls."*

PART I.

Last year an eighth pamphlet was issued to the Medical Profession entitled "Muscular Debility." This met with the usual kindly reception, for which Mr. Fellows tenders his grateful thanks, at the same time trusting that his present brochure may be received with an equally generous greeting.

The more one reflects on the physiological processes at work in the system during that period of life, commencing about the fifteenth and ending at the twenty-fourth year, the more one realises the great importance of the care, mental and physical, which should be bestowed on this critical time in the maturing of the individual, whether male or female.

It is during these years that the potential energy of the child assumes definite shape in the settled tempera-

* "The Physiologist in the Household," p. 8.—Milner Fothergill, M.D.

ment of the adult man or woman. The colloid passes into the crystalloid. The hitherto ill-defined elements assume concrete forms. The influences of heredity are more clearly seen. Many of the ills we are born heirs to begin to form shadows of future changes that must end in disease and death. Looking back on these years, how many there are who must feel that at that time the mould was finally set that shaped their entire lives' histories!

The young sapling bends to the forces with which circumstances surround it. The soil in which it is planted, the climate in which it grows, the opposition it meets, the over-crowding of its fellows, all affect the qualities and potential vigour of the ever-changing protoplasmic materials out of which it was originally formed.

It is to these surrounding circumstances in their action and re-action on the developing human plant, side by side with the directing force of heredity, that attention must be devoted in guiding its growth to maturity. Even if the previous training has not been wisely directed, much can still be done to counteract evil impressions and re-dress the soil in which the weeds of neglect or bad example have flourished, so as to clear the ground for future cultivation and improvement.

Consequences of Early Forcing.—In the modern crush of competition, in the early forcing of the intellectual faculties, in the universal application of the examination test (from year to year becoming more severe), parents and advisers are apt to overlook the consequences that constantly follow such hot-house forcing of the youth of both sexes.

"Growth is not a steady increase upwards, like an inclined plane; it consists of periods of active growth and then an interval of quiescence, like that of trees and other vegetable growths which shoot in the spring, only the periods of growth in children are less rhythmical and more irregular. This is an important fact for both teachers and children." *

Adolescence in Women: the Catamenia.—This observation applies with greater force now that the principle of higher education for women has come to be almost universally acted on. The period of adolescence is earlier in women than in men. It is subject to greater variations in the time of its incipiency and the rapidity of its completion. There are more marked and striking changes, both physical and intellectual, in the girl than in the lad. There are

* "The Physiologist in the Household," p. 11.—Milner Fothergill, M.D.

more numerous examples of early precociousness in habit and temperament. These differences are not without their corresponding and correlative physiological demands on the system.

"With young girls we frequently find a difficulty in coming to any definite conclusions regarding the regularity, the quantity, and the quality of the menstrual flow—all of them equally important facts. Mothers are at times careless in watching the occurrence of menstruation; this important duty is left to governesses, schoolmistresses and servants. Hence, not seldom does it happen that a girl is brought for advice for some anæmic or chlorotic state, and the irregularity of menstruation associated with it has passed unnoticed and unchecked. It is necessary, in such instances, that we should insist on a careful watch being kept on the periods and the character of the discharge.

"So we must correct, when possible, those pursuits and their effects which tend to corrupt the blood. Overcrowding in sleeping apartments, heated rooms, ill-ventilated sitting and bedrooms, prolonged sedentary employment, much stooping or standing, excessive study and long school-hours, want of suitable out-door exercise and amusement, too violent exercise and muscular tire, have to be firmly condemned. How many of the future uterine troubles of adult and married life are engendered

by the routine, monotony and over-work of our modern boarding-school life, when the mother's watchful eye is absent, only those who are so often consulted for the results of both know. If parents were oftener alive to the danger, they might be more careful in the selection of the temporary home, on the domestic management and control of which so much of their child's future happiness depends. Nor must we omit due attention to the cutaneous secretion—proper bathing of the entire body at a medium temperature (water 60° to 70° or 80°), if cold be not well borne, sea-bathing if it agrees, and that a healthful reaction occurs after it. Proper friction is essential, especially of the lower part of the back and the abdomen, after the bath. Dr. Atthill has suggested a plan which for years I have followed with success. The patient is directed, before she goes to bed, to sit, protected from cold, in a small bath of water at a temperature of from 60° to 70°. The feet are either placed in hot flannel or in a small foot-can of hot water. After the bath the hips and lower part of the abdomen are well rubbed with a Turkish towel, and then the patient goes immediately to bed."*

In the appearance of the catamenia one sees this difference in the approach of puberty in women most

* Diseases of Women," 3rd Ed.—MACNAUGHTON JONES, M.D.

strongly marked. It is a matter of common observation that this physiological warning-note of womanhood commences much earlier in some women than in others. In this phenomenon the pre-disposing influences of heredity, climate, occupation, and the condition of the circulatory fluid are well seen. But, side by side with this premature appearance on the one hand, or unusual delay on the other, growth of other tissues—nervous, muscular, and osseous—has to proceed, in which process time alone works towards perfect development. There is no better example of this to be seen than in the osseous system.

Development of the Skeleton.—Taking, for instance, the following bones, we find that centres of ossification appear during the period of adolescence.

Ribs, 16th to 20th year; Clavicle, 15th to 25th; Scapula, 15th to 25th; Pelvic Bones, Puberty; Vertebral Column, 14th or 15th to 21st year.

Union of the Epiphyses occurs during adolescence in the Ribs as late as 25th year; Sternum, 25th to 40th; Clavicle, 25th; Scapula, 25th; Humerus, 20th; Radius, 20th; Ulna, 20th; Hand, 20th; Pelvic Bones, 25th; Femur, 20th; Tibia, 25th; Fibula, 25th; Foot, 20th.

Demand and Supply.—Thus in the growth and completion of the skeleton a striking proof is given of

the demands made on the circulatory and nervous systems during this period. It is no matter for surprise that in the youth of both sexes, but especially in young girls, disorders of locomotion frequently arise during those critical years of immature osseous framework, ere yet the bones have solidified or knit. Demand is greater than supply. The nutrient current fails to respond to the call, and the defect is recognised in the weakened muscular support and curved spinal column. The hungry tissues all crave for pabulum, in the contemporaneous growth and corresponding metamorphosis that mark the spring-time of life.

"How often," says Dr. Macnaughton Jones, "do we not see the source of the deformity in the hysterical mimicry of curvature (Neuromimesis of Paget), the effects of depraved blood; the strumous diathesis and the habit acquired at the school desk, or at the piano, or in some employment out of the many of those now so well filled by women, and which they frequently commence at the age of puberty—just at that critical period when, from fifteen to twenty-one years of age, the muscles of the spine are developing, its ligaments strengthening, and its bones consolidating. How mistaken must be any mode of treatment which would ignore such pre-disposing causes, in the vain hope that any mechanical appliance or mode of treatment will

strengthen a muscular debility or feed an ill-nourished bone!" *

Consequences of Deficient Nutrient Supply.—Should that nutrient supply fail from any accidental cause, not alone do the osseous and muscular tissues give evidence of the failure, but the muscle-nerves and the entire nervous system participate in the consequences of the defect. Nerve-mimicry of joints, various expressions of hysteria, epileptiform seizures, and chorea, are some of the affections that afford proof of these nerve disorders.

Sir James Paget says:—"One of the most frequent conditions in those in whom the nervous mimicries occur is a singular readiness to be painfully fatigued by slight exertion. This is most marked in those with spinal neuromimesis, but may be found in many more; and in some is the most marked sign of the erroneous state of the nervous system. To most of us the sense of fatigue produced by even excessive exercise is scarcely distressing; only a great excess, tending to exhaustion, would be felt as really painful, and the worst is soon relieved by rest. But these nervous patients become utterly fatigued in even slight exercise and their limbs and their backs ache horribly and very

* "Medical and Surgical Essays," p. 35.—MACNAUGHTON JONES, M.D.

long, though they may look muscular and strong. So that not rarely the attempt at more than usual exercise is followed by great suffering, by sleepless nights, and sometimes by nausea and vomiting. Their sensations are like those of the painful fatigue which convalescents from acute disease feel after doing much; but I believe there is never attendant fever, such as convalescents in that case usually have—the likeness is only in sensation." *

But more especially in the vascular system have we frequent and distinctive proofs of the unusual call on Nature's Bank. The blood, in its diminished and deteriorated corpuscles, gives clear warnings of the threatening bankruptcy. The blood cells are deficient in quantity, and general anæmia shows itself in the bloodless conjunctiva, and the pale gum and lip. The (living) red corpuscles (or hæmatine and oxygen carriers) are changed in character and quality, and the green chlorotic hue tells the story without the necessity of putting a question. Or, the watery and white corpuscles (dead blood) bring with them cardiac functional murmurs, or perchance organic ones, if the irritating blood-current is not changed by suitable remedies, backed by general hygienic precautions. Pernicious anæmic changes,

* "Clinical Lectures and Essays," p. 177.

most difficult to remedy, may arise when this neglect has continued for any considerable time. Wherever muscle and nerve changes occur in the body, we have concurrently at work the great processes of absorption and resorption. The lacteal vessels in the abdomen and mesenteric glands, and the lymphatic system generally throughout the extremities, have to take their share in the activity of protoplasmic life during the years of puberty and adolescence. Tissue change and tissue growth mean corresponding lacteal and lymphatic energy. The nutrient fluids, chyle and lymph, are the blood and tissue feeders. Whether in the abdomen or in the extremities, muscle movement and muscle action may be translated by lymph movement and lymphatic action. Hence is seen in the appetite of the growing boy or girl, and in the desire for out-door exercise, a great provision of nature to meet the wants of the developing body. The muscles cry out for more oxygen, while they struggle to rid themselves of the carbonic acid generated during exercise. This effort is associated with necessary respiratory movements and effects on the venous circulation, which in their turn re-act on the heart and stimulate it to healthier action. In view of the intimate relationship of gland action and lymph movement to the other vital processes which maintain

health, a ready reason exists for the evidence of a failure in this harmonious correlation in enlarged lymphatic glands, in so-called strumous tendencies, and in abdominal glandular disorders during adolescence.

As Dr. Henry Bennet well puts it:—"During the earlier periods of life, not only has the organization to repair the wear, the waste of tissue continually going on in the young, as well as in the old, and to keep up its standard of heat, but it has also to build up the frame to the degree of development which it is destined to reach. This it does, as we have seen, by its own inherent vitality, each organ appropriating the additional nutriment it requires from the blood, and gradually adding to its bulk. It is, in a great measure, to meet this demand on the part of the economy, for the elements of nutrition, that the young have such large appetites, such a power of rapid digestion, and that they consume such large quantities of food. The young of man and of all other animals are also ever active, ever in motion, so that the waste, from use, must be great. The current of nutritive life in children is thus truly a rapid one." *

* "Nutrition in Health and Disease," p. 56.—James Henry Bennet.

Harmonious Blending of Forces in Growth.—In this brief review one is struck by the marvellous harmony in the whole process of growth, in which death and repair incessantly take part in cell-destruction and renewal. It is an ever-changing, ever-shifting scene, in which invisible actors play the parts in a piece, the very perfection of which depends on the mutual and co-equal excellence of all the players.

> "Each to each its being lending;
> Each on each in turn depending;
> While each is giving on to each,
> And each relieving each."

Practical bearing of this knowledge.—In turning now from this sketch of the physiological processes at work during adolescence to the consideration of the practical bearing of this knowledge on the management of youth, the first things to be studied are the influences of heredity and temperament.

Modern Education.—The whole tendency of modern training is of far too mechanical a nature. The scheme of education is based too much on the "Shepherd telling his tale" principle. The type of physical constitution, the evidences of precocity on the one hand, or tardy brain development on the other, hereditary or congenital defects through the errors of ancestors, and the transmission of ills "to the

third and fourth generation," are not considered. Because the boy or girl ought to learn, he or she *must* learn. This grade and that must be reached at a given age. Capitation fees to masters and mistresses are the tempting baits offered to encourage disastrous forcing and cramming. Some intellects blaze out brilliantly, like the magnesium light, and die off into darkness with equal abruptness; they,

> "Like the waves in the moonlit solitudes mild,
> Have foamed for a moment and gone."—*Arnold.*

Others struggle on under the over-strain, and, after school and college, are lost to sight and forgotten. If the object of the State in insisting on compulsory education be to create useful servants of the State in after-life, side by side with the mental culture must run the care of the physical development. Health of body and vigour of mind are Siamese twins in the world of greatness (using the term "greatness" in regard to the welfare of the State).

> "He only is truly great, as he saves or serves the State."

The whole history of our Empire points to this end. The great men of Great Britain have been men of "long-enduring blood." Their ancestors, who wielded

the "saxe," gave to them this inheritance; and, with British intelligence, have, in the ages, been yoked the pluck and hardy fortitude of the Norsemen of olden time.

Over-study and Cram.—Not then in ill-advised over-cram and excessive study, in the encouragement of prurient tastes, in early launching into fashionable life, in too early marriages, in art-courses for young ladies, in sedentary occupations, must one look for the perpetuation of that stability that has made us what we are. Rather should everyone endeavour to prepare the youth of the present age for the increased pressure and facilities for work, and for the consequent increased worry of modern progress and competition.

Impositions.—A child is compelled to write so many hundred times a certain word or sentence, or so many lines of Latin verse. The good that may be achieved by this mode of punishment is doubtful; but of the injury done to the mind by such an unintellectual feat there can be *no* doubt. The same cannot be said of committing to memory so much poetry or prose. In the latter duty the memory at least is exercised, but in the former the mere mechanical repetition of an act which can scarcely be entitled to the term "mental," is decidedly injurious, as it tends to arrest the forces of conception and imagination, while the time devoted to

its performance is stolen from the necessary physical recreation of the child.

Workshops in Schools.—In those schools in which there are well-ventilated workshops (as there should be in all well-organised schools), it would be far better to send the boy and girl to learn some useful art, or to work at some trade, than to keep them confined for hours at a monotonous task, calculated rather to retard than to promote mental growth.

Selection of Teachers.—Much has to be laid at the door of the indiscriminate or careless selection of responsible teachers of youth. More is required in a teacher than the mere knowledge of the subjects he is expected to teach. He has to have very special endowments, to be capable of judging of the mental aptitude and temperament of his pupil. He should have a knowledge of elementary physiological facts, which will enable him to enforce the relative proportions of study and recreation that various constitutions may indicate. More especially in the case of young girls, the mistress of a school—and this rule applies with double force to boarding-schools—should be a woman fully alive to the influence on a girl's health of catamenial regularity, of regular hours of exercise, of sufficient rest in the horizontal position, of attention to the digestive secretions, and of the

importance of posture both at the desk when in school, and, when out of school, at the piano or at table. Remembering what was said above of the development of the skeleton, the necessity for this supervision is obvious if we wish to avoid spinal supports afterwards, and varying degrees of deformity.

Effect of Early Deformities on Parturition.—In women, this oversight assumes a special significance, in view of the effects on parturition in after-life. It is not an exaggeration to say that countless lives might be saved, were the early indications of spinal and pelvic weakness and deformity attended to in childhood and adolescence. The same remark applies with almost equal truth to deformities of the feet and lower limbs, which also tend to cause abnormalities of the pelvic bones. Those muscular troubles of childhood, such as infantile paralysis, Duchennés paralysis, and false muscular hypertrophy, which are associated with affections of the spinal cord, still leave sufficient muscular degeneration, even when recovered from, to warrant very special care on the part of parents and friends.

The presence of "flat-foot," knock-knee (genu-valgum), and the various forms of club-foot, demand close and early attention for similar reasons.

Gymnasia.—One considerable modern advance in

the general management of the youth of both sexes, applying more particularly to young girls, is the establishment, in all towns, and in many schools, of excellent gymnasia, generally conducted by managers who have made a study not only of the effects on the muscular system of ordinary gymnastic feats, but also of the special effects of particular exercises directed to the relief and cure of certain deformities. The importance of this general attention, during adolescense, to properly-regulated muscular action, through the use of various mechanical machines, such as the trapeze, dumb-bells, &c., cannot be too strongly insisted on. Here again moderation must be observed, as irreparable mischief may be done by overstrain and exhaustion in the gymnasium. The character and quantity of the exercise have to be adapted to the strength and endurance of the pupil.

Cricket and Tennis. — Our English games of cricket and tennis are well calculated to develop a healthy physique. The latter game, and also rowing, are, unless there be some special reason against either amusement, splendid sources of recreation for growing girls. It must, however, be remembered that for some female constitutions, and periodically for all, too great exertion, or exercise to the point of fatigue, is injurious. This remark applies particularly to exercise taken immediately after meals.

Attention to the Skin and Cleanliness.—At schools, there is one organ of the body within the immediate personal care and supervision of all, viz. :— the Skin. Both in schools and in home-life sufficient attention is not given to its health. While the general recognition of the importance of cleanliness as a preservative of health is manifest in the fact that, in all modern well-equipped houses, a bathroom, with hot and cold water, is looked upon as a prime essential, yet it constantly happens that parents who have been most scrupulously attentive to the bathing of their children in the nursery, take for granted that as they grow older they will attend to themselves in this particular—a supposition which will often be found erroneous. As girls approach the age of puberty, and during the earlier years of adolescence, there is no more important factor in the maintenance of health than the daily use of the bath, with subsequent proper friction of the skin. This does not mean heroic resistance to the effects of cold and the risks of chill, which some constitutions feel more acutely than others; it refers rather to properly regulated adaptation to individual temperaments of the temperature of the daily bath (which should be from 75° to 80° Fahr.). To invigorate, not to depress, is the object. There was a case where severe brain mischief, leaving per-

manent effects in after-life, followed the dipping of a child in the sea—against which cruelty she had in vain protested to her parents and the medical adviser. Routine is the Baal of medicine. Men do not stay to consider why it is that some persons cannot travel in a railway train, or in a brougham, without getting violently sick; and why others cannot look from a height of a hundred feet without becoming intensely giddy and, in some cases, being prompted to suicide.

The Teeth.—Another neglect, both on the part of parents and heads of schools, which leads to serious after-results, is want of attention to the teeth. Now that we understand the relationship of bacteria and fungi to caries of the teeth, the prevention of premature decay by cleanliness, and by the use of a harmless disinfecting powder, is a duty which is not sufficiently explained to and enforced on children. Heredity is clearly seen in the instance of the teeth. Parents, who themselves suffer from defective teeth, should pay early attention to their children's. There is no excuse in these days of advanced dentistry for the barbarous mutilation of one of the most important portions of the child's digestive apparatus, in the extraction of its teeth. All teeth possible to save should be saved. So much depends in early life on sound teeth, that every effort should be made to preserve them.

Hard brushes are not good for the delicate enamel of some teeth. It is a fact, not to be forgotten, that the most persistent headache, and some serious affections of the eye and ear, follow from the presence of carious teeth in the jaw. It is well, in any case of intractable headache, to inspect the teeth, and tap each tooth with some hard substance, separately, in order to detect any sensitiveness; or, what is infinitely safer and better, to consult a dentist twice yearly.

"So frequently are headaches dependent upon decayed teeth, that in all cases of headache the first thing I do is carefully to examine the teeth. Not unfrequently, when I have pointed to a decayed molar as the origin of the headache, the patient has said, 'But I have no pain in the tooth!' and to this I usually answer, 'It is quite natural; you get the toothache in another part of your head.' In treating any case of headache, therefore, the first thing to do is to see whether the teeth are sound and the eyes normal. If anything is found wrong with either the teeth or eyes, the defect should be at once corrected. The throat, ears and nose should be examined to see if any source of irritation is present there, and the surface of the scalp tested by pressure for rheumatic or syphilitic inflammation. Percussion should also be

tried over the head, in order to determine whether or not there is any intra-cranial tumour." *

Headache.—Headache in the young arises from a variety of causes, amongst the principal of which we may summarise constipation, indigestion, biliousness, anæmia, neuralgia, mental overstrain, sedentary occupation, defective eyesight, and carious teeth. In young girls, irregularity in the catamenia, producing reflex nerve troubles in different parts, is a common cause of headache. The disorders amenorrhœa, dysmenorrhœa, and menorrhagia, are often attended by headache.

Hysteria.—That undefinable and complex condition, with all its nerve reflexes and nerve-storms called "hysteria," is also met with as a frequent association of these uterine disorders of growing womanhood. Headaches and hysteria in the young are both warning signals to parents to seek elsewhere for the causes of the nervous irritation and pain. Too often are the symptoms treated, while the diseases producing them are neglected.

"To call these suffering women," says Dr. Allnutt of the neurotic type, "hysterical is to confuse all due acceptance of names; and, what is worse still, it is

* "Disorders of Digestion," pp. 101-111.—Lauder Brunton, M.D., F.R.S.

to confuse the real relations of things. The neurotic woman is sensitive, zealous, managing, self-forgetful, wearing herself for others; the hysteric, whether languid or impulsive, is purposeless, introspective and selfish. In the one is defect of endurance, but in the other defect of the higher gifts and dominion of mind." *

"In my later chapters I shall recall the truth which should be ever before us—that the fundamental difficulty in all neurotics not hysterics is their nutrition. More fresh air without expenditure of the slender store of strength, the permeation of their starved tissues with the fat that they themselves so often loathe in their food—these two reforms accomplished, all their organs will take on a more generous and a more vigorous life, all their tissues will brace and cleanse themselves from a purer and richer fountain of blood, and force will be stored up and energy developed wherein before were dilapidation and sterility. As a shrewd old Yorkshire doctor once said to me—'It's no use, my lad, putting the hands right upon the clock-face if you haven't cleaned the works.'" †

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* "Visceral Neuroses," p. 24.—Clifford Allnutt, M.D., F.R.S.

† "Visceral Neuroses," p. 29.—Clifford Allnutt, M.D., F.R.S.

Moral Training of the Adolescent Period.—There is another subject, not yet touched upon here, which in itself would demand many pages. It is the influence of the moral training of that period of life which extends from the fourteenth to the twentieth year. During those years of approaching manhood or womanhood, all the moral faculties take definite shape, under the influence of the altering or altered physical attributes of the sexes. Sexual desire, varying in intensity in different individuals, is developed, and sexual impulses give rise to a craving for their gratification and prompt the imagination either to self-abuse or sexual intercourse. The commingling of the young of both sexes favours this. Modern literature, in its freedom of expression, both in fiction and the daily press, helps to excite prurient curiosity and prudishness, and the whole current of modern social life tends to carry the awakening mind down the stream of impurity and pollution. The indecent publication contained in one London evening paper alone, sewn broadcast over the country, must have done incalculable mischief wherever its nauseating columns found their way into the hands of a young lad or girl. In the light literature of the bookstall, in the thinly-veiled immorality that breathes in every page of some of the most popular novelists' works, and from many other sources, the girl of the nineteenth century

finds food for morbid curiosity and dangerous reflection. Is it wise to shut one's eyes to this? Is it not much better to look it straight in the face, and, by proper physiological education in our schools, by careful supervision of the young, by lessening the sources of temptation, by healthful companionship, and by judicious training of the developing faculties, to prepare the boy or girl for the coming struggle 'twixt morality and vice which both must face? It is a fact well known to men of the world that ignorance is no safeguard against temptation; rather, on the other hand, does it tend to a more ready "falling of the bird into the net of the fowler."

Smoking.—The habit of smoking has become almost universal amongst men. The evil effects of nicotine, however, on the heart and nervous system, have been but too well established by credible medical testimony and clinical observation. While much may be said in favour of the soothing and quieting effects of tobacco, and the companionship of the pipe, the dangers of its premature and excessive use should be enforced on parents and young lads. Before now, sudden and fatal collapse has been caused by the pipe when it has been used by a youthful smoker. For some constitutions tobacco is unquestionably injurious; and those who feel faint or sick and who have a dry tongue in the morning after they have smoked on the previous day,

should avoid tobacco altogether. The longer the growing lad postpones the resort to the pipe and cigar the better; the less likely is it that he will be found in the crowded billiard room and smoking saloon, breathing in their tainted atmosphere, and the less likely also is he to cultivate a taste for alcoholic beverages, for one seldom finds the non-smoker intemperate, and frequently he is a total abstainer.

Alcohol.—The responsibility of parents and teachers in regard to Alcohol is unquestionably great. This responsibility is made the more apparent when we reflect on the power exerted on the organism through hereditary tendencies and influences which are due to excess in ancestors. The drink craving, the direct results of alcohol on the nervous system, do not end with the death of him who indulges. They are distinctly transmitted and perpetuated. To trifle with an agent so powerful for evil in the young is manifestly imprudent. To encourage its use where unnecessary is wrong. The healthy growing boy and girl do not require alcohol. From early life they should be taught that wine and, indeed, all alcoholic drinks are rather luxuries than necessities. It is as unwise to inculcate a belief in the necessity for alcoholic beverages as it is to create a blind and groundless prejudice against their use and value under varying circumstances of health

and work. In many phases of health, and in certain morbid conditions, alcohol in one shape or other is indicated, and it is foolish and detrimental to the patient to withhold it. To teach the young that wine is as the "spur in the side of the horse," calling out latent rather than creating new force, and that great physical and mental fatigue may be undergone without its help, is the proper course to adopt. They should be taught that alcoholic stimulation does not mean nutritive support, and that alcohol is only in a sense a food. In short, both by example and precept, the youth of both sexes should learn that it is the abuse rather than the use of alcohol that works harm and does permanent mischief, and that by avoiding the "hot and rebellious liquors" in the spring-time of life they will be all the more likely to see the invigorated winter of old age "frosty but kindly."

PART II.

Diseases of Adolescence.—Taking thus a general view of the period of adolescence, it appears plain that the metabolic processes of tissue-metamorphosis

and repair place unusual strain on the nervous and circulatory systems. Hereditary tendencies also are at this time of life prone to manifest themselves by various morbid conditions, and congenital defects, if not previously corrected, assume permanent shapes, rendering subsequent cure more difficult, if not impossible.

In speaking of the "Dispositions to Disease," Sir James Paget says:—"It is well to be sure of the reality of the progressive changes by which what we call a constitutional disposition or tendency becomes what we may call a constitutional disease, and that the two names, like 'boy' and 'man,' mean the same thing in different stages, for the method of life in each constitutional disposition must be at any period characteristic, though its distinctive characters may be beyond our present powers of discernment. In any two children, for example, or in any two embryos, one a product of healthy parents, the other of tuberculous parents, however like they may appear, there must be even now dissimilarity. In the same measure as they are becoming constantly more unlike each other, in becoming severally more like their parents, in personal appearance and mental character, so they are becoming constantly more unlike each other in their dispositions or tendencies towards health or disease. The future

difference is not more certain than the present, though it will be more evident. The future is potentially in the present state, in some material quality not less sure, because not yet sensible. I say 'not yet' in the full expectation that minuter study will bring the knowledge of many things characteristic of constitutional dispositions, which we at present overlook or cannot see." *

Classification.—Classifying the affections met with most frequently during adolescence under the three heads of Hereditary, Congenital, and Acquired, they may be roughly enumerated as follows :—

HEREDITARY.

Affections of the Osseous System—as, for example, Deformities, Rachitis, Rheumatic and Gouty Affections, Tubercular or Strumous Affections, Syphilitic Affections, Malignant Affections.

Affections of the Circulation.—Cardiac Diseases, various Vascular Changes, Morbid Blood States (as Leukœmia, Anæmia, &c.), Affections of the Thyroid Gland.

Affections of the Nervous System—as Insanity of various kinds (including Melancholia), various degrees of Epilepsy, Neuralgias, Muscle-nerve disorders,

* "Clinical Lectures and Essays," p. 357.

Morbid changes in the Brain and Spinal Cord, Catalepsy, Hysteria, Hypochondriasis.

Affections of the Lymphatic System—as Mesenteric Diseases, Glandular Enlargements, Lymphadenomatous States.

Affections of Special Organs.—Uterine (Disorders of Menstruation), Throat (Tonsillar Hypertrophy), Nose (Nasal Obstructions, involving Respiration, Phonation, and Hearing).

Ear.—Many Tympanic Abnormalities, leading to Deafness.

Eye.—Serious errors of Refraction requiring correction, Lenticular and Choroid changes, and many Inflammatory Affections and Degenerations, which may be traced to Hereditary influences, as, for instance, Tubercle and Syphilis.

Mammary Gland (tumours of).

Skin.—Such Diseases as Psoriasis, Lichen, Eczema, Affections of the Nails.

Teeth.—Premature Decay, due to specific causes.

CONGENITAL.

Mainly observed in the osseous and muscular systems, as Talipies and various Congenital Deformities, occasionally met with in the heart and vascular system (as nævus); sometimes in the spinal cord; also in the organs of sense.

ACQUIRED.

ZYMOTIC DISEASES AND THEIR SEQUENCES.—More especially those of Scarlatina, Diphtheria, Measles, Typhoid Fever, Pythogenic Pneumonia.

These sequences, in the case of *Scarlatina*, are principally manifest in the kidney, throat, and ear; after *Diphtheria*, in the throat and in various paralytic conditions due to enervation; after *Measles*, in the lungs and ear; after *Typhoid Fever*, in the intestinal tract, the lymphatic glands, and the lungs, and in a general debility which is a frequent consequence of this fever.

VARIOUS.

Cerebral and Meningeal Tubercle, Pulmonary Tubercle, Naso-pharyngeal Affections, various Spinal-cord Degenerations, Spinal Curvatures (Scoliosis and Pott's Caries), Morbus Coxæ, Tubercle in Glands (Struma), Chorea, Epilepsy, Hystero-epilepsy, Melancholia, other forms of Insanity, Hysteria, Neuralgia, Headache, various Paretic States, Torticollis, Goitre. Various Affections of the Organs of Digestion, as Caries of the Teeth, Æsophagœal Stricture, Gastritis and Gastric Ulcer, Acute Inflammatory States of the Bowel, Constipation, Hepatic Torpidity and Congestion, Abdominal Phthisis, Chronic Diarrhœa, Diabetes,

Nephritis (Acute and Chronic), Calculi, Splenic Enlargement, Phynosis (requiring Circumcision).

Affections of the Senses.—Those before enumerated under the head of Congenital.

Eye.—Conjunctival Inflammations, Strumous Affections of the Cornea, Iftic Affections, Tubercular Disease of Choroid, Atrophic Affections of the Optic Nerve and the Retina.

Ear.—Commencement of Progressive Deafness, Catarrhal states of Tympanum, Paresis of Tubal Muscles, Nasal and Throat Deafness, Adenoid Obstruction of Posterior Nares.

Throat.—Tonsillar Hypertrophy, and Pharyngeal Catarrhal Conditions.

Nose.—Nasal Obstructive troubles, due to Turbinate Hypertrophy, &c.

Skin.—Parasitic Skin Diseases, due to contagion. More frequently Eczema, Psoriasis, Herpes, Scabies.

UTERINE AFFECTIONS.

Leucorrhœa, Amenorrhœa, Dysmenorrhœa, Menorrhagia, Displacements, Ovarian and Tubal Diseases.

GENERAL BLOOD DISORDERS.

Anæmia, Chlorœmia, Leukœmia, Scurvy; such Hæmorrhages as Epistaxis, Hæmatemesis, Hæmoptysis.

TRAUMATIC DISEASES.

To which in sports and pastimes youth is specially liable.

The above list comprises only the disorders of adolescence more frequently met with.

Value of Fellows' Syrup of the Hypophosphites in the Affections of Adolescence.—A combination of the hypophosphites of iron, manganese, potassa, lime, strychnine, and quinine (in the proportions in which the ingredients are found in the Syr: Hypophos: Fellows, Vir.) has been proved by experience to be of the greatest value in a large number of the affections to which the growing lad or young girl is specially subject.

Its General Tonic Properties.—In it are those elements most calculated to strengthen the osseous frame-work, to innervate the nervous forces of the body, to restore the quality of the blood, to give an impulse to cell-formation and cell-growth, to promote digestion and secretion, and to excite mental energy and will power.

Justifying through its Effects the Verdict of the Profession.—Mr. Fellows, with an instinct for the therapeutic wants of his own system at a time when suffering from disease, devised this compound, of which thousands of enlightened and eminent physicians and

surgeons, all over the world, speak with approval, stamping that opinion in a practical manner by the constant administration of the remedy. And, reviewing what has been said of the period of life which we are considering, and glancing over the groups of affections incidental to it, Fellows' Hypophosphites will be acknowledged to be a preparation admirably adapted to meet the necessities of the practitioner.

General Effects on the System.—In various morbid states of the osseous system, arising during the completion of the skeleton, in spinal curvatures (as an adjunct to other treatment), in rachitic constitutions during the repair of fractures and after operations, in tuberculous degenerative changes wherever found, and notably in those subjects in whom hereditary tendencies exist, its use is specially indicated. Take as an example those degenerative changes which are apt to precede the development of tubercle in the lung, and which, at times, follow a chronic catarrhal condition of the bronchi. The resistive force of nature is increased by the use of the Syrup, the assimilation of food is promoted, blood is made more quickly, there is more nerve, energy, and the desire for exercise and the appetite are both increased. The same may be said of the convalescence from all exhaustive diseases, such as the recuperative period after either typhoid fever,

pneumonia, scarlatina, or any septicæmic disease. Typically the value of Fellows' Hypophosphites might be instanced, in this category, in the various paretic conditions arising after diphtheria, and in the debility following upon miasmatic intermittent fevers. But it is more especially in anæmic states, and in the various disorders arising out of and associated with these, that this preparation of the hypophosphites frequently acts so well. The anæmia of young girls and the disorders of menstruation (amenorrhœa and dysmenorrhœa) which are of the anæmic type, may be instanced as examples. The thin and watery blood, also, is constantly found to be a cause of the prolonged menstrual period and the exhaustive menorrhagia. Here, independently of other remedies, Fellows' Hypophosphites will be found invaluable. An anæmic and a strumous blood are frequently co-existent. The unhealthy absorbent gland is permeated by an impoverished blood, while behind this are the lymphatic temperament and tuberculous tendency. The combined hypophosphites of potass, lime, iron, manganese and quinine are most calculated to alter the morbid blood current, to act as a nutrient, while the nerve tonic is supplied by the strychnine.

Anæmic headaches, various facial neuralgias, and those attacks of migraine due to cerebral anæmia, are

benefitted in like manner. Nervous paretic affections in the chronic stages, where strychnine or iron do not happen to be contraindicated, are likely to be served by the administration of such a tonic. In melancholia and during recovery from that malady, in the various forms of hysteria, in many kindred forms of depression and brain-exhaustion, following over-work and worry, the use of this preparation is indicated, and during serious overtaxing work is much used to sustain both body and mind for business duties. Amongst other nervous disorders in which the Hypophosphites may be administered usefully, may be noted both chorea and epilepsy. In the former of these affections especially, it is much used by the profession. In affections of the organs of sense, arising as sequences to acute diseases, such as fevers, scarlatina, measles, and diphtheria, and in those various disorders which make their appearance at puberty, and which have their source in a hereditary taint, such as tubercle or syphilis, the Syrup of the Hypophosphites is indicated. It may be well to remark that Fellows' Hypophosphites may be used contemporaneously with various malt preparations, cod liver oil, and several vegetable tonics; and alternately, one before and the other after meals, with the syrup of the iodide of iron, and the iodides of potassium, sodium, and ammonia. In fact, if

judiciously administered at meals, commencing with small doses and regulating these according to the age of the patient, and at the same time sufficiently diluting it with water, it seldom disagrees. The Hypophosphites may be used as an adjunct to any treatment that the special features of the disease demand. Its use may be combined with such vascular tonics as Digitalis or Convallaria.

Dr. Lauder Brunton says of vascular tonics:—"The improved circulation produced by vascular tonics makes itself felt in the liver and intestines, as well as the stomach. The yellow tinge, indicating biliary congestion, will disappear from the eye, and hæmorrhoidal engorgement will be lessened or removed. The brain and nervous centres, under the influence of a freer current of blood, act more readily and powerfully, thought comes with less effort, and exertion—both mental and bodily—can be continued for a much longer time, without any sense of fatigue."*

Dr. Thos. More Madden, in speaking of the Disorders of Puberty, says:—"Among the many other remedies of a somewhat similar class, which are especially available in these cases, none are more generally serviceable than the officinal Syrups of Iodide

* "Disorders of Digestion," p. 217.—Lauder Brunton, M.D. F.R.S.

and Phosphates of Iron, or the many valuable combinations of this, with other Salts, such as Parish's and Squires' or Dusart's Syrups, or that which I have found specially useful in the chronic wasting disorders of tuberculous or strumous youth—namely, Fellows' Syrup of Hypophosphites."*

Finally, it may be said of this preparation that there are few of the morbid conditions of adolescence, whether those attacking the building-up materials (the mere brick and mortar of the body), or those attacking the inextricably associated and invisible forces at work in the construction and repair of the edifice (which we regard as mental or nervous), that so powerful a constructive agent as Fellows' Syrup of the Hypophosphites may not be used in combating.

* "Cyclopædia of the Diseases of Children," p. 405.—Puberty: Its Pathology and Hygene, by Thos. More Madden, M.D., F.R.C.S.