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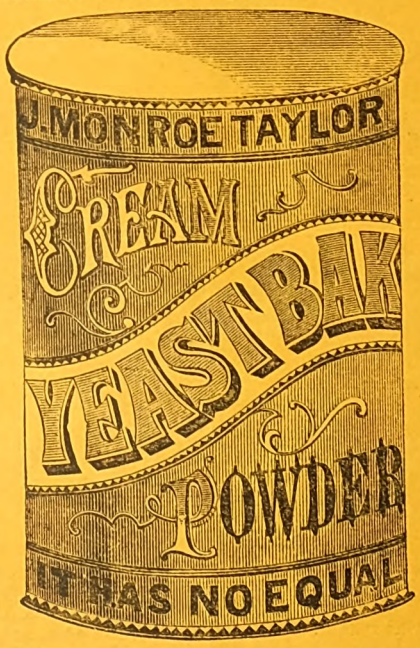
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DEVOTED TO

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ESSAYS ON SANITARY AND SOCIAL SCIENCE.

(Number 1.)

Sanitary Restrictions to Liberty of Marriage.

BY GEORGE DARWIN.*

THE greatest misfortune of mankind, and that which it appears we ought first to combat, is insanity. I confess that, until I looked into the subject, I was not aware how imminent our peril is, and, as probably many of my readers are in a like ignorance, I will give a few quotations from a work of great authority on account both of the ability of its author (Dr. Maudsley), as well as of the care with which he has collected and collated his facts. I refer to "The Physiology and Pathology of Mind." Dr. Maudsley finds from his statistics that one person in 500 in England is mad, and adds that "Theoretical considerations would lead to the expectation of an increased liability to mental disorder with an increase in the complexity of the mental organization; as there is a greater liability to disease, and the possibility of many more diseases in a complex organism like the human body, where there are many kinds of tissues and an orderly subordination of parts, than in a simple organism with less differentiation of tissue and less complexity of structure; so in the complex mental organization, with its manifold, special and complex relations with the external, which a state of civilization implies, there is plainly the favorable occasion of many derangements. The feverish activity of life, the eager interests, the numerous passions, and the great strain of mental work incident to the multiplied industries and eager competition of an active civilization, can scarcely fail, one may suppose, to augment the liability to mental disease. There seems, therefore, good reason to believe that, with the progress of mental development through the ages, there is, as is the case with other forms of organic development, a correlative degeneration going on, and that the increase of insanity is a penalty which an increase of our present civilization necessarily

* This article was published in the London *Contemporary Review* for August, 1873. The author is a son of the eminent naturalist, Charles A. Darwin.

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pays." He then, after remarking on the comparative rarity of insanity amongst savages, gives the number of insane patients in England and Wales at three recent periods; he observes, however, that only a small proportion of the enormous increase which the numbers show is due to an increase of insanity in the population, but that it principally arises from the prolongation of life in the insane—from the greater care bestowed on them, and from the diminished number of lunatics unregistered as such. "But when all due allowance has been made for these causes it must be admitted that a steady increase of about 1,000 per annum in the insane population of England and Wales for the last seventeen years does seem to point to an actual increase in the production of insanity, and even to an increase more than proportionate to an increasing sane population." It is to this conclusion (which has not, however, passed undisputed), that I wish to draw particular attention; for if it is true that insanity is heritable in a high degree—and on this point some details will be given hereafter—then it is clear that the increase of insanity proceeds in a geometrical ratio, and not by mere addition. Again, with reference to the proportion of the insane to the rest of the population, Dr. Stark has shown that in Scotland one person in 228 is insane, fatuous, deaf and dumb, or blind, and that more than half—6,785 out of 11,514—of this proportion is made up by the insane and fatuous.

Dr. Maudsley gives it as the opinion of the most competent judges that diseases undergo a transformation from generation to generation, that scrofula and phthisis in one generation lead to insanity and idiocy in the next, and that it is "sufficiently evident that disease of one part of the organism will not only affect the whole sympathetically at the time, but may lead to a more general infirmity in the next generation—to an organic infirmity which shall be determined in its special morbid manifestations according to the external conditions of life." He gives, too, a known series of such transformations, in which drunkenness in the first generation leads to a quasi-mad tendency to drink in the second, to hypochondria in the third, and to idiocy in the fourth. In his work above quoted, Dr. Prosper Lucas also gives many authorities for such transformations. Madness, hysteria, epilepsy, convulsions, digestive derangements, spasms, tic, dyspnœa, and other diseases are shown to ring the changes among themselves in the various members of a family. The tendency to commit suicide seems closely allied to insanity; and of this he gives many instances.

There appears to be considerable difficulty in attaining any precise information as to the extent to which insanity and the allied maladies are inherited, and there is consequently a great diversity of opinion on this point. The proportion is put by some authors—as Moreau, who examined fifty pedigrees—as high as nine-tenths, by others as low as one-tenth; the most careful researches agreeing to fix it not lower than one-fourth, if not so high as one-half. M. Béhic reports as the result of the examination of 1,000 insane patients in France, that out of 264 of the males 128 inherited the disease from the father, 110 from the mother, and twenty-six from both parents; and out of 266 of the females 100 inherited from the father, 130 from the mother, and thirty-six from both parents. He further says: "Children born before the outbreak of an attack are less likely to suffer than those after an attack." Dr. Lucas is of opinion that the smallness of the proportion assigned by some authors as due to inheritance arises from the difficulty of ascertaining the pedigrees of patients, and to the fact that in some cases account has only been taken of inheritance in the direct line; and he gives copious illustrations of the strongly heritable character of the various forms of mental derangement, and of the allied nervous diseases.

The general result to be deduced from these, and from other passages of a similar nature, seems to be that mental diseases are, and might *à priori* be expected to be on the increase, and that, as I before observed, such increase will proceed by a geometrical ratio (although such ratio may not greatly exceed unity), that the extent to which the disease is inherited is enormous and very alarming, and that other diseases act and react on one another in the production of insanity.

Does it not appear, then, that we are bound to consider steps for the excision of this canker, and that those races which delay making the endeavor must fall behind in the struggle for life? Let us hope for the good of the world that the Teutonic races will take the lead in the attempt.

The most obvious way to deal with the matter is by introducing new restrictions to the liberty of marriage, and these need not be, in the first instance at least, of an onerous nature; indeed, as in all other reforms, our only prospect of change within a reasonable time is, that the first step should be such as not to constitute any great disturbance of the existing

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ystem, and one which shall not too greatly hock the prejudices of opponents; it would be opeless, even if it were desirable, to expect im- iediately any fundamental change in the mar- iage relationship. Moreover, by the gradual ntroduction of change we guard against those inexpected effects which ever crop up in the vorking of any new scheme. Fortunately a tart may be made by a reform which is re- quired on the grounds of abstract justice to he individual, even more than on those of ben- fit to the race. If we bear in mind the result f M. Béhic's investigation, viz., that insanity s transmittible to a greater extent after the levelopment of the disease in the parent than vhilst it is still latent, we are led almost irre- istibly to an enactment that when a divorce is ued for, it shall not be refused merely on the ground of the insanity or idiocy of either party. In order to introduce this change the legal doc- rine, that a person *non compos mentis* is incapa- ble of defending himself, will have to be modi- ied; but it is certainly a fact that in many cases the insane person is *not* incompetent for lefense, and in others the fact of incapacity does not in reality weaken the defense; and surely in all cases our judges may be trusted to point out, in the charge to the jury, in what way the incapacity invalidates the evidence. It might also prove necessary to give the court the power of assigning competent legal advi- sers to the alleged lunatic or idiot. Such a measure as this might prevent the possibility of a catastrophe so frightful as that portrayed in such vivid colors in "Jane Eyre," or of an act of injustice such as it is not improbable has been committed in a recent *cause célebre*. More- over, the change could hardly shock the preju- dices of any one.

A next step, and one to my mind as urgently demanded on the grounds of justice as the former, is that insanity or idiocy should of it- self form a ground of divorce. The proceed- ings in the divorce court would in this case be merely formal, and consequent on the finding of a commission in lunacy; as, moreover, no slur would be cast on the character of either party, the divorce proceedings would lose much of their sting, and the patient, should he re- cover, would suffer in no other respect than does any one who is forced by ill health to re- tire from any career which has been begun; although, of course, the necessary isolation of the parent from the children would be a pe- culiarly bitter blow. My first proposed step would most likely have but little direct effect; but it would, I imagine, do much for the diffu- sion of the belief in inheritance, as being a public recognition of the truth of such doc- trines, and as drawing the attention of all to- ward the subject; the second step, however, might be expected to work a perceptible im- provement. Might we not hope, too, that its introduction would not excite so great an op- position as to be impracticable within a reas- onable time?

Further changes in the same direction may be made, by providing that proof of having never suffered from insanity should be a pre- requisite to marriage. And one may hope that in the distant future the parties may further be required to show that their parents or even remoter ancestors and collaterals are likewise untainted; this, too, is the more important, as it has been shown by Dr. Prosper Lucas that innate characters are more strongly heritable than those acquired by the individual. The possibility, however, of the introduction of such measures as these is so distant that it does not seem worth while to consider them further than by pointing them out as goals, on the ultimate attainment of which our attention should be turned.

Besides the mental qualities of man, his bod- ily frame is urgently in want of improvement, and for this end also we need a substitute to replace the weakened influence of natural se- lection. *Mens sana, in corpore sano*—so that even neglecting the consideration that by our care- lessness we are laying by a heritage of suffer- ing for unborn generations, we can only fully provide for the advancement of the human race by paying attention to physical qualities. There can be no doubt that the health of large numbers in our present highly civilized condi- tion is alarmingly feeble, and that the advance of medical science will, by the preservation of the weak, only aggravate the evil for future generations. The extent to which, in the pres- ent age, the weak are placed almost on a par with the strong in the struggle for life, has been pointed out in the "Descent of Man."

There are many diseases which seem to re- quire attention, on account of their strong he- reditary characters. The lungs, the digestive canal, the liver and organs of generation may be the origin of the most various forms of de- rangement, and give rise to convulsions, hys- teria, chorea and epilepsy; and all these dis- eases are hereditary and transformable *inter se*. Gout, scrofula, rheumatism, tuberculous, can- cerous, herpetic and syphilitic diseases are inti- mately related, and all are strongly heritable. A gouty constitution may develop itself in

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the form of asthma, dyspepsia, epilepsy, apoplexy, paralysis, madness and many other diseases. That consumption runs in families is too notorious to need any remarks on my part. We shall, to a certain extent, in combating insanity and idiocy, combat all these diseases, since, as it was before remarked, they are mostly commutable with mental incapacity; but we can only make a really successful attack by compelling the production, before marriage, of a clean bill of health in the party, and ultimately in his parents and ancestors. Syphilis would have to be included, in case, as is only too likely, medical science and other preventive legislation should fail in depriving it of its hereditary character, or in confining its ravages to small limits.

At the end of his book Dr. Lucas gives his opinion, as the result of his labors, that, in contracting marriage, union should be avoided with persons near akin, with those personally affected with epilepsy, mental incapacity, phthisis, scrofula, etc., as well as with those whose parents, grand-parents, uncles or aunts are so affected; and adds, that it is our duty not only to search for persons exempt from these diseases, but those whose personal and family constitution is good.

The ultimate restrictions, then, to liberty of marriage would be (besides those already in force, less the absurd laws against marriage with a deceased wife's sister or husband's brother). (1). Divorce on the appearance of certain diseases. (2). The passing of a medical examination for this same class of diseases. (3). The production of an untainted pedigree. The medical examination might, in some respects, be modeled on that in force in Germany for military service, where a man is not ultimately rejected until he has been refused in three successive years. Could such legislation come into force, coupled with some such scheme as that proposed by Mr. Galton, not only might "a cubit be added to our stature," but the capacity for happiness in the world might be largely augmented, by the destruction of that most potent cause of unhappiness, ill health; several years might be added to human life, our ability for work and mental power immensely increased, and the coming race might end by becoming as much superior to ourselves in mind and body as the race-horse is superior in form to a shaggy pony.

Another measure, very analogous to those of which I have spoken hitherto, would be an enactment that the felony of either party to a marriage should constitute a ground for suing for divorce. Does it not seem monstrous that a person should be bound for life against his will to one who, having committed a crime, is held apart from communication with society? The tendency to vice, too, seems almost of the nature of a disease, and is without doubt hereditary; thus, by such a measure, not only should we free an individual from a hateful union, but we should be aiding in the formation of a rising generation less tainted with vice than the last.

In his "Enigmas of Life," Mr. Greg takes the most sanguine views as to the happy future of the human race in purging itself of the ills to which I refer in this article; but I have endeavored to show that according to the opinions of the most competent judges with respect to insanity, idiocy, and certain other diseases, he is not justified in his hopes; at least if no wholly new influence comes into play, of which we are as yet unable to see any symptoms. As is not unnatural, then, Mr. Greg is of opinion that we shall not submit to any curtailment of our liberty of marriage. He says: "Obviously, no artificial prohibitions or restraints, no laws imposed from above and from without can restore the principle of 'natural selection' to its due supremacy among the human race. No people in our days would endure the necessary interference and control; and perhaps a result so acquired might not be worth the cost of acquisition. We can only trust to the slow influences of enlightenment and moral susceptibility percolating downwards, and in time permeating all ranks. We can only watch and be careful that any other influences we do set in motion shall be such as, when they work at all, may work in the right direction. At present the prospect is not reassuring. We are progressing fast in many points, no doubt; but the progress is not wholly nor always of the right sort, nor without a *per contra*." Is it not, however, pushing hopefulness to an extreme to expect morality to make so vast a stride as that to which Mr. Greg looks forward? Indeed, I can hardly think it reasonable to expect that a man should voluntarily sacrifice himself; it would be analogous to expecting a man who was bent on entering the army voluntarily restraining himself because he becomes blind of one eye. It does, however, seem to me reasonable that just as in the case of the army, the country protects itself by causing its would-be recruits to pass a medical examination; so that persons of untainted blood, being convinced of the truth of

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heredity, should protect themselves and their descendants by debarring the tainted from entering the army of married life. Even Mr. Greg appears to contemplate the necessity of coercion when he says that the means, or at least the prospect of being able to maintain children, should be regarded practically as an essential pre-requisite to producing them—probably under the control of an enlightened public opinion—possibly, as is not unknown in certain continental states, under legal pressure. Surely, then, if we are to prevent the rising generation from lacking maintenance in the future, we are, *à fortiori*, bound to prevent a rising generation from being formed which will be a curse to itself—a curse the influence of which personal efforts will be powerless to arrest.

In order to enable us to estimate the probability of mankind enduring such restrictions as those here advocated, it will be well to consider what restrictions men have already endured, and do now endure. It would, of course, be quite beyond the scope of a single article to enter into a full history of this point, even if my knowledge enabled me to do justice to the theme. I have, therefore, put together a short account of such restrictions as my reading has brought before my notice, without professing to treat the subject exhaustively.

In his work on "Primitive Marriage," Mr. McLennan has with great ingenuity reconstructed the steps by which the marriage system has developed itself from a more or less complete promiscuity; and his views are now, as I believe, accepted in the main by the most competent judges. He draws his arguments from a comparison of the various stages of marriage extant amongst barbarous or semi-barbarous nations in all parts of the world, and also from a consideration of the old customs and "survivals" still subsisting amongst civilized races. Exogamy, or the custom whereby a man is bound to search his mate out of his own tribe, is traced as the earliest restriction to promiscuity, and seems to have been directly brought about by the struggle for life. The useless mouths of the tribe were, to a great extent, suppressed by the introduction of female infanticide—a custom which still prevails over a wide area. The men were thus almost *driven* to make raids on neighboring tribes to carry off the women; the latter were generally in the earlier stages the common property of the men, and private property in a wife was forbidden. The survival of many curious customs, expiatory of the tribe's anger when a man assumed a wife to himself, affords abundant proof of the truth of this view. In early forms of partial civilization the tribe or family formed the unit, and almost all property was held communistically, so that it was almost impossible for a man, however bold or strong, to retain a wife for himself alone. It appears to me, too, that it is easy to see how the taking of a wife from within the tribe would serve as a proof that the man had not taken his share in the warlike exploits of the tribe, and would thus come to be regarded as a crime. Indeed, long after the state of perpetual warfare subsided, and when wives were no longer taken by violence, marriage within the tribe continued to be forbidden; and later the custom, whatever its origin, crystalized into a semi-religious abhorrence to internal marriages.

Existing side by side with this system, we find that of endogamy, in which marriage outside of the tribe is forbidden. This probably took its origin in pride of race; and here external marriages are considered criminal, as tending to deteriorate the breed. Our still existing marriage customs prove the Aryan race to have been originally exogamic. The transition which sometimes takes place from the exogamic to the endogamic system is one of the most curious and interesting parts of Mr. McLennan's book. I must refer the reader to the fountain-head for an account of how community of women, polyandry, and tribal organization graduated into exclusive property in the wife, polygamy, and the patriarchal system; I wish here merely to point out the great variety of the restrictions to marriage, and how at various times it has been forbidden to marry within the tribe and without it, and unlawful for a woman to have but one husband, and lawful for a man to have many wives. One restriction, so curious as to deserve mention, is given by Mr. Spencer, viz., where a woman is married during four days in the week, and free the rest of the time.

The prohibitions to consanguineous marriages form another group of restrictions, which may be observed in every known system. Mr. McLennan traces it entirely to exogamy, but Mr. Tylor thinks it due to the observed ill effects of interbreeding.

The following brief account of the restrictions obtaining in various parts of the world to marriage with kinsmen is abstracted from Mr. Tylor's "Early History of Mankind," where the various authorities will be found col-

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lected. In the civilized world the prohibition from such marriages stops at that of first cousins. Theoretically the Roman ecclesiastical law pronounces marriage unlawful to the seventh degree, and even as far as any relationship can be traced; but practically, the restriction is reduced to the ordinary limits, by means of dispensations. The Quakers do in reality forbid first-cousin marriage. In India a Brahmin is barred from marriage in the male line indefinitely. In China a man may not marry a woman of the same surname, and of such names there are but several hundreds; and two brothers may not marry two sisters. In Siam the prohibition extends to the seventh degree, although the king may marry his sister, or even his daughter. Among the Dyaks first-cousin marriages are prohibited, and a fine imposed on second-cousin marriages; the restriction to marrying a relation is strongly marked in the Malay Peninsula. Among the Ostyaks two persons of the same name may not marry; the Tungaz forbid second-cousin marriages, and the Samoeids and Lapps all degrees of consanguineous marriages. In Africa the marriage of cousins is illegal in some tribes; in Madagascar certain ranks, and persons akin to the sixth degree, are not permitted to intermarry. Throughout a large district of East Australia the restrictions follow very intricate rules, depending on the tribal names of the parties. Kinship by adoption constituted in ancient Rome a partial bar to marriage, and the same thing holds true among the Moslems with respect to foster-kinship. In the Romish church sponsorship creates a restriction which, even among co-sponsors, a dispensation is required to remove. Two members of a Circassian brotherhood, not all akin, may not marry.

I believe that amongst the Jews it is customary for uncles to marry nieces, and I have been informed by Dr. Farr that a similar custom prevails in the Isle of Wight, notwithstanding that English law does not recognize such unions.

Our present table of prohibitions (with the exception of those against marriage with a deceased wife's sister or husband's brother), seems a *juste milieu* between extreme restraint and extreme laxity. It may, perhaps, however, come about that marriages of first cousins may be ultimately prohibited, should the evil arising from such unions prove as great as is sometimes asserted.

Passing over a great lacuna in my knowledge I now come to the Teutonic communistic bodies. My information is derived from an interesting pamphlet which has lately appeared at Berlin, by Karl Siegwart. In these feudal communistic bodies the right to marry and form a household played a great part as a means of reward and advancement. During the period of "ministerial service," when each man was bound to give all the product of his labor to the commonwealth, restraint to liberty of marriage was the rule, and only those might marry who had reached a certain age or position; not a soul dared to marry without permission, and this permission was refused to soldiers, husbandmen and artisans alike, during their apprenticeship. The households, the number of which was kept almost invariable, were partitioned out amongst the marriageable classes; and the majority had to wait for the deaths of their predecessors in office. Even the arti sansin the free towns had to wait until they could buy the business of a deceased master, or marry his widow or daughter; and, in the latter case, although the business was not at first strictly heritable, only if there were no son in waiting. Even in the lowest classes no one might marry until a household was at liberty for him. A great part of these institutions seem to have remained in almost full operation down to the reformation. And even subsequently breaches of these marriage customs seem to have been punished with frightful severity. The transgressor was thrown naked into a hole full of thorns, impaled, or buried alive; assaults on women were punished with death. The mother of an illegitimate child was exposed in the pillory, and either executed or graciously condemned to imprisonment; if the child was not yet born, she either committed suicide or was drowned by her relations, and the seducer caught in the act was castrated. Prostitution was not merely tolerated, but was secretly promoted as a check to over-population, as in Japan at the present day. Liberty to marry in these communities was in fact used as the highest reward for good service, and breach of the custom punished in the harshest manner.

As far as I know, all modern restrictive legislation has been entirely directed to the prevention of pauperization. Thus in Switzerland a scheme was proposed and debated in the legislature of the Canton of Thurgau, of which (as well as of what actually obtains in the Canton of St. Gall), Mr. Laing gives the following account: "The first article of their (the Thurgovian) proposed law prohibits the

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marriage of males who live by public charity; the second requires that to obtain permission to marry a certificate from the overseers of the poor must be produced of the industry and love of labor, and of the good conduct of the parties, and that, besides clothes, they are worth 700 francs French, or about £30 sterling. The third article of this extraordinary law in a free state makes the marriage admissible without the proof of this 700 francs of value in movable property, if the parties have furniture free of debt, and pay the poor tax of one per mille upon fixed property. Their legislation had sense enough to reject this absurd proposition in 1833. The canton of St. Gall, however, actually has imposed a tax on marriages; and to make it popular the amount goes to the poor fund. It fails because, according to Sir F. d'Ivernois, it is too low, being forty-six francs—about seventy-one francs French, or £3 sterling; and because it is not graduated according to the ages of the parties, so as to prevent early marriages." Mr. Laing further states that in Germany commissaries have actually been appointed by some governments (Bavaria among others), who are vested with the power to refuse permission to marry to those whom they judge not able to support a family. They have a veto on marriages.

In Saxony an extraordinary facility of divorce exists. "A separation of a husband and wife after three, four, or six weeks' marriage is nothing rare or strange." Marriage seems almost to amount to a temporary arrangement. In a village near the Kochel, out of sixteen marriages, after one year, "only six of the contracting parties were still living together." Mutual dislike is a ground for divorce (as is also the case according to the Prussian Landrecht and in Baden), and divorces have even been granted on account of drunkenness, staying out at night, ill-smelling breath, groundless complaining, and drunkenness of the father-in-law! Sometimes, however, a fresh marriage is forbidden to the parties for four or five years. In Hungary, too, the same great facility of divorce obtains.

Marriage between Catholics and Protestants are not acknowledged in Brazil, and a priest has even been known to celebrate a marriage between parties, one of whom he knew to have been previously married to a Protestant.

The examples which I have here thrown together are, I think, sufficient to show how great a diversity of marriage customs has at various times prevailed, and still prevails, amongst civilized nations. Does not this serve as an answer to those objectors who would say: "We shall never submit to having our marriage laws more restricted?" For when one can point out so great a diversity of restrictions, many of which are no longer maintained for any good reason, it is surely absurd to say that nothing new will be endured, even though it may be founded on the best of reasons. Our state of civilization has so diminished the force of natural selection that we cannot much longer afford to neglect some process of artificial selection to replace the method which nature has been carrying on from the beginning; and that nation which has first the courage to adopt some such plan, must undoubtedly gain on others in the vigor of its members in mind and body.

To those who are inclined to regard all designs of improvement for the human being of the future as chimerical, I cannot do better than quote Mr. Spencer's words, that there are now in existence "various germs of things which will in the future develop in ways no one imagines, and take shares in profound transformations of society and of its members—transformations that are hopeless as immediate results, but certain as ultimate results." The germ in this case is the growing belief in the truth of heredity. There is no doubt that for a time such legislation as here proposed would be resisted, just as in defiance of English law marriages are now consummated with the sisters of deceased wives, and men refuse to vaccinate their children; but in course of time, as the knowledge of heredity percolates more and more from the educated to the uneducated, such legislation will probably be acknowledged as well founded, and will be universally acquiesced in.

The prospect of the institution of such schemes is certainly not immediate, and a man would be sanguine to expect to live to see them in operation; but, as is well known, the first stage in all reforms is that of discussion and diffusion of opinion; and as hitherto the possibility of improving the marriage relationship has been barely mooted, I have thought I might perhaps do some service by directing attention to the subject. I am desirous of pointing out some of the ways in which our liberty of marriage may be affected by the adoption of those methods, and not so much to indicate definite schemes of legislation, as to bring to a focus some of the considerations to be taken in initiating such schemes.

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The Golden Kiss.

BY LYDIA M. MILLARD.

MIDAS, an ancient king, we are told,
Loved better than all things else his gold;
But one thing he loved more, the little maid,
The child Marygold, that around him played.
He wanted for her, before he should die,
To save up a gold pile mountain high.
He'd say, when she brought him buttercups fine,
"Pooh, child! were they gold they'd be worth my time."
Though in early days he was fond of flowers,
In his garden passed his happiest hours—
For there the most beautiful roses grew,
That ever a mortal garden knew—
Now he could never a rose tree behold
But to wish each rose leaf a plate of gold.
A large part of every day he was found
In a small dark basement room under ground,
Counting his gold coin o'er and o'er,
And sifting his gold dust on the floor,
Where only one sunbeam, narrow and bright,
Through his dungeon window shed its light.
He could never be happy or free from gloom
Till the whole vast world were his treasure room.
Filled with gold that was all all his own,
For himself and Marygold alone.

One day when he'd locked and barred his door,
And counted his golden pile once more,
He saw a stranger with radiant face,
Stand in the sunbeam's brightest place.
When the stranger smiled, a golden light
Like "tips of flame" lit the dungeon's night
He said, as around on the walls he gazed
Till each darkest corner kindled and blazed:
"Thou'rt a happy man friend Midas, I see;
No other mortal has gold like thee."

"I've done pretty well," said Midas, and sighed.
"But I haven't gained much, all my life I've tried
To get this little—I must, it appears,
To grow rich enough live a thousand years."

"I should like to know," the stranger replied;
"Pray what would you have to be satisfied?"
"Only this," said Midas, "I would behold
Every object I touch changed into gold."

The stranger said, with a smile so bright
That it blinded Midas's dazzled sight:
"You shall have your wish, to-morrow morn
The golden touch shall be yours at dawn."
Then in a cloud's resplendent blaze
He vanished from King Midas's gaze.

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As on his bed did Midas lay,
Watching for morning's earliest gray,
He feared it was all a deceitful dream
Fading away with last night's sunbeam.
But when the first glad sunlight shone
His white bed coverlid was gone,
And in its place bright spread of gold,
Of finest texture, fold on fold.
He touched the bed, and the bedposts bright
In golden columns dazed his sight.

Most wild with joy about his room he goes,
Till everything he touches glows.
He raises the curtain, and behold!
In his hand a tassel of corded gold:
A volume from his table took,
And he held a beautiful golden book
He put on his clothes, and saw himself dressed
In magnificent cloth of gold the best;
He walks down stairs, and quick behold!
Staircase and balusters are gold;
He lifts the latch, through golden gate he goes;
He touches each lily and tulip and rose,
Till dumb with wonder and pleasure he stands
As the golden roses bloom from his hands;
And he sees with ecstacy strange and sweet,
The golden violets under his feet,
Golden morning-glories over his head,
O'er trellis and arch their radiance spread,
While round him, from every urn and bower
Like jewels gleam each dazzling flower.

He goes to breakfast, where is everything
To tempt the palate of dantiest king;
Trout, eggs, cakes, potatoes, wine sparkling clear,
And a bowl of bread and milk for Marigold near.
He hears her come crying and sobbing along;
'Tis strange, she begins most days with a song,
And hardly in all her happy years
Has she shed a "thimbleful of tears."

"Why, what's the matter, Marygold?" he cries.
She holds out a great golden rose and sighs:
"Don't you think I went for nice flowers for you,
And found the ugliest that ever grew;
I can't bring you any sweet roses more."
And she threw the hard gold rose on the floor.
"Child don't let that splendid rose make you cry;
Cheer up, and a thousand sweet roses I'll buy."
Said Midas, as lifting the goblet to his lips;
But as soon as the sparkling wine he sips
It loses the flavor and taste of old,
And turns in his mouth to liquid gold.
Then he touches the trout, and three golden fish
Lay stiff and bright on a golden dish;
He tries the cakes and the eggs, but too late,
There are gold fish, gold eggs on his golden plate.
Till at last he says, "I don't quite see

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How there's any breakfast to-day for me."
He seizes a potato in his mouth quick to hold,
Before it has time to turn into gold.
But he dances around and roars in vain,
For his mouth is full of golden pain.

"What's the matter, father?" Marygold cries,
With the tears still standing in her eyes.
"Dear child," he said, "what's to become of me?"
And he was a pitiable sight to see,
With gold food alone to keep him alive,
How many days more could he survive?
The poorest beggar with a crust of bread,
Was richer than he when hungry, he said.
He groaned aloud. Little Marygold sees
His trouble great, puts her arms round his knees.
"My precious, precious child!" said he,
"I have no treasure great as thee."
He stoops her forehead fair to kiss,
No lips meet his with answering bliss.
Oh sad, sad moment of agony wild,
He holds in his arms a golden child.
Her golden lips no words can speak,
There's a golden tear on the golden cheek,
Each lovely dimple leaves its golden trace,
Wavy golden curls vail the golden face,
Eyes once with Heaven's own blue so bright
Gaze on him still with their golden light,
Love, pity, grief are all frozen there
In golden lines on that face so fair,
The golden rose, by his touch complete,
Lies uncared for now at her golden feet.
All the wealth piled up 'tween earth and sky
That child's heart back can never buy.
He would gladly take poorest beggar's place
To bring back the rose to that dear child's face.
To gaze at it thus makes him frantic and wild,
But he can't turn away from his golden child.

In this sad tumult of despair,
He sees the stranger standing there,
His broad, bright smile shone in the room,
Strange contrast to King Midas's gloom.
"Friend Midas," said he: "How do you succeed?
Does the golden touch supply all your need?"

Most dumb with grief, Midas shook his head,
"I am most miserable," he said.
"How happens that?" the stranger replied;
"Have I not your highest wish supplied?"

"Gold is not everything," Midas said;
"All that my heart loves best hath fled."
The stranger said: "Thou'rt wiser grown I see,
Pray, what is worth the most to thee?
Or which would you rather have?" he said,
"The golden touch, or a crust of bread?
The golden touch, or a drop of water;

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The golden touch, or your darling daughter?"
King Midas sobs forth in his sorrow wild,
As still closer he clasps his golden child;
"I'd rather her smallest dimple behold
Than have the whole world in a lump of gold."

"I'm glad," said the stranger, "wisdom you've learned;
Your heart has not quite to worthless gold turned,
You still are able to understand
That life's common blessings within our hand
Are dearer than treasures of every land.
If you wish your golden touch to lose,
To return to your former state you choose,
Go plunge in the river's crystal tide
That doth by the foot of your garden glide.
And a vase of the same crystal water you hold,
And sprinkle each object you'd turn back from gold,

King Midas's tall form majestic grows,
As robed in gold through his garden he goes.
Swiftly he glides through the golden trees,
And a golden path behind him leaves,
He plunges in the river's crystal tide
That doth through his golden garden glide,
As in its cool, bright water he bathes
His golden robe fades away in the waves.
He dips in his splendid pitcher of gold,
'Tis changed to a good earthen vessel, behold!
He hastes to his palace, sprinkles Marygold's hair
Till the wind lifts a curl from her forehead fair;
Gold fades into blue in her slow-opening eyes,
She breathes once more, she trembles and sighs,
She opens her lips, says "Don't dear father, pray,
See, you've wet my nice frock I've put on to-day.'

Now rapture thrills King Midas's pain,
He clasps her to his heart again,
Takes her through golden bowers and trees,
Sprinkles each golden flower, till she sees
Vases and urns, arbors and bowers,
Bloom once again with her fair, sweet flowers.

The river sands sparkle with gold evermore,
Since Midas came up from its beautiful shore,
And the golden kiss left its shining trace
On Marygold's fair and innocent face,
Her hair always wore a golden light
Most beautiful to mortal sight.
When Midas came an old man to be,
Trotting Marygold's children on his knee,
He told them they had their golden hair
From their mother Marygold's curls so fair,
That the only gold that pleased his sight
Was the gold of their hair, wavy and bright,
And the richest wealth to be longed for here
Was the wealth of a loving child's heart dear.

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Sins of Commission.

BY ELEANOR KIRK.

MRS. HAMILTON had pickled, and preserved, and fruit-caked, and mince-pied and cleaned house. Everything was ready for New Year's. Mr. Hamilton expected his mother and two sisters, the first of whom Mrs. H. had never seen, and was consequently a little afraid of. She also had invited guests on "her side of the house," and had laid out a programme of enjoyment second to none in the history of New Year's festivities. Mrs. Hamilton had but one servant, and as there were two children to be cared for, one a little girl of five years, another a baby in arms, it is fair to suppose that Mrs. Hamilton had her hands full. One thing she was determined upon, however. Mrs. Hamilton, senior, should approve of her. The children's dresses were perfect models of taste and neatness. Monsook skirts elaborately worked, trimmed with exquisite patterns of Hamburg edging, dainty cashmere sacques, delicate vines of silk embroidery running daintily round them, were quite as unexceptionable of their kind as the garments of other babies whose parents had money to pay for such labor. Mrs. Hamilton set every stitch herself. She had been compelled to sit up nights to do these things, but what of that? Wasn't she going to have a house full of company New Year's, and weren't her babies as good as anybody's babies? Mr. Hamilton, comfortably settled in bed watching his wife bend over her lap full of snowy fixins, had a sort of a vague idea that the children would look just as well in something plain, but concluded, perhaps wisely, that if his wife didn't know her own business it was altogether probable she wouldn't allow him to teach her. At last preparations were all completed, and Mrs. Hamilton surveyed her work and pronounced it as good as anybody's. So it was. This ambitious housekeeper had proved herself possessed of fully ten talents. As a cook she was without a superior: as a seamstress she could take the lead, as a thrifty and prudent domestic manager she was equal to the best. The children had not suffered for want of care; nothing had burned; nothing had lacked seasoning, or been over-seasoned. Her fruit cake was "done clear through," (a wonderful achievement for a novice) and was as black as the chimney back. Her mince pies tasted exactly like her mother's; and this is what she had worked hard to accomplish.

Mrs. Hamilton baked a "turn over" for her husband to taste. He ate it just before retiring, with a nice bit of sage cheese, and about twelve o'clock had a rather vague impression, as he pelted his aching stomach, that perhaps it would have been just as well for *him*, at any rate, if Mrs. Hamilton had disposed of her mince pie materials in some other way. He did venture to ask if there wasn't considerable lard in the crust. "Doesn't the pie agree with you, John?" his wife inquired, sleepily. John thought not, arose and swallowed a dose of rhubarb, inwardly anathematizing pastes of all kinds, and toward morning fell asleep and dreamed his wife had chopped up the baby. Mother-in-law and sisters-in-law arrived the night before New Year's, quite unexpectedly, and great was Mrs. Hamilton's delight to note the strangers' admiring glances. Of course it was not polite to remark upon the culinary perfection thoroughly proved by the little artistic dinner: but Mrs. Hamilton, senior, did venture to ask if her daughter-in-law employed a French cook.

"Taste of the mince pies mother, and you'll make up your mind that we have a Chinaman to mix our grub," said Mr. Hamilton, remembering the previous night's colic.

Mrs. Hamilton cast a reproachful glance husbandward, and replied to the French cook question, doing her best to seem unconscious of the implied compliment.

"I have but one servant," was what she said, "and she understands nothing, or next to nothing, about cooking."

"But who has done all this?" was the next quite natural query.

"I always do all the *particular* part of the cooking!" replied the young housekeeper, blushing a little.

"It must be an immense care," cried the elder lady, with a sigh."

"I do not elaborate so much as this generally," answered Mrs. Hamilton. She had noticed the slight tone of dissatisfaction in her mother-in-law's voice, and was anxious to do away with the unpleasant impression.

"I suppose not," was the immediate reply, "but I am afraid you undertake to do too much, my dear."

"Who dressed the parlors?" inquired the visitor, as after dinner the guests and host and

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stess retired to the tastefully furnished drawg-room.

"I did it the week before Christmas;" said s. Hamilton.

"What lovely embroidery," exclaimed sister-law, while mother looked through her spec les admiringly; "who did it?"

"It is some of my work," replied the amaur seamstress.

"Why you must be a witch!" said sister, th a considerable show of enthusiasm. "I ver in all my life heard of a woman who uld accomplish so much."

This was a very sweet morsel to the hardrking woman, and she rolled it under her ague with great relish. It was partial comnsation for her untiring efforts. She felt ry much like starting immediately for the tchen and expending what little nerve force e had left in the concocting of some other sh for the delectation of her visitors. Such the effect of praise upon abnormal approbaveness! After awhile she did excuse herself prepare the turkey for the next day's dinner. would make so much less work in the morng, and she was anxious to give as much time her relatives as she could spare from the ling of their stomachs. With her sleeves nned back, and her pretty dinner dress enrely covered with an immense cooking apron, ie proceeded to her task. All these details ie had taught herself; a great credit to her, all nsible persons will admit. Every round of ie housekeeping ladder she had climbed without assistance or previous training: and no old ew England matron better understood the retive locations and merits of giblets than did is born and reared New Yorker. When Mrs. amilton lifted the mammoth fowl to singe it, ie found she was very tired; so weak in fact iat she was compelled to pass it over to Brid-t, although in mortal terror lest the incomtent servant should blister the fair white in. Her head was hot and her feet cold. ueer shivering pains crept over her, and she ondered what could be the matter. "Taken ld perhaps;" she whispered to herself, with rimming head and trembling fingers. Howver the work went bravely on. Mrs. Hamiln was not a woman to be conquered by circmstances. The savory dressing was carefully ixed. Nothing remained to be done but the vorcement of the gizzard from its life commion, the corn-bag. Mrs. Hamilton's knife as very sharp, and holding the great purple orin in her left hand she went skillfully to work, as was her wont, to separate the two without spilling the contents of the crop. The knife slipped, and poor Bridget was frightened almost out of her wits by a scream from her mistress, followed immediately by a heavy fall to the floor. Mrs. Hamilton had cut a gash in her hand, and the sight of the blood in the then disordered state of her nerves had produced this very startling effect. Down rushed husband, mother-in-law and sisters-in-law. Mrs. Hamilton was conveyed to bed, and for several weeks there was trouble enough in the home of the Hamilton's. House-cleaning, embroidery, preserving, etc., etc., had done their work, and the poor victim of overweening domestic ambition was compelled to recognize the mistakes of the past.

Such instances as these are common, though very few are so happily and satisfactorily arrested in their downward careers as was the subject of our sketch. Women are constantly overdoing; if not in one direction in another. Cares of society, of the household, of maternity, are increased ten-fold by foolish and utterly useless attempts to do more than somebody else, to dress better than somebody else, or for other equally ridiculous reasons; but what use is it to preach? Women will wear thin stockings and slippers in the house, and thin stockings and thick boots in the street, the last because thick boots are fashionable. They will wear elaborately trimmed under clothes, and will turn up their noses at canton flannel and merino. They will work when they ought to sleep, and read when they ought to walk. They will strain every nerve to entertain company, and then shut their children up because they are all tired out. *Some* women; not all thank heaven! I know a few who have studied spiritual as well as physical physiology, and knew where to begin and where to stop.

These are the women, "nobly planned, to warn, to comfort, and command," and with enough of the "angel's grace" to successfully minister to their husbands, and rear their children.

It is always pleasant to note an instance of common sense like that exhibited by Dr. Kershaw, of the St. Louis Homeopathic Medical College. He declared, in his address at the opening of the Winter course, that the age demands women physicians, and he heartily urged the students before him to advocate and earnestly encourage the education of women in medicine.

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Health Maxims.

BY DR. MARTIN LUTHER.

A NIGHT'S sleep is a sovereign remedy for most of the minor ills of life.

There is a training for the brain as well as for the body; a real physical culture, depending, like bodily training, on rules as to nourishment, method of action, and quantity of exercise.

One great difficulty in judging of the growth and development of the mind is the want of a reliable measure of mental strength. A mental dynamometer would doubtless show that some people have a hundred times as much mental caliber as others.

With old age there comes physical incapacity for original work, but little loss of power in maturing work begun in youth.

The tendency of the mind to repeat a question frequently is an indication of failing mental power.

As the railway train runs on a track, so does the human mind think in grooves; and, like the train, it is apt to be wrecked when thrown out of its grooves.

The brains of people advanced in years would be greatly strengthened by habits of study. Old people should have their lessons, their mental culture, like chidren. It would be almost a sure cure for the decay of the mind as age advances.

Temporary madness may sometimes be necessary to cleanse and renovate the mind; just as a fit of sickness rightly managed carries off the morbid humors of the body.

Bodily sins are not more easily cured than mental ones. It is more easy to cure lying and swearing than scrofula and consumption.

Some minds keep young even at eighty, others are old at thirty.

By a little management we may often evade resistance which a vast force cannot overcome.

Would it not be a great blessing to the race if some inspired prophet of dress would appear to teach women to properly make and wear their clothes.

Corsets impose on the world much needless invalidism.

The most critical period of a girl's life is from twelve to eighteen. During these years the body should have a fair chance to develop, otherwise years of ill health and suffering may result.

No organ of the body or faculty of the mind should be regarded as a source of weakness.

Mothers often mourn that their children are not as studious as they should be; but nine times out of ten the course marked out by a parent would stifle and ruin the child. Let Eve take a wise care of the temple God made for her, and Adam of the one made for him, and both will enter on a career of glory and beauty no seer has foretold or poet sung.

The old notion that our bodies are changed every seven years is not true, they change much oftener.

Whether our bodies and brains are better or worse than last year depends on how well we have used them.

While it is not necessary that parents should be physicans, it is necessary that they know how to train their children so they may have constitutions capable of resisting disease.

Faith and hope cure more diseases than medicine.

The stomach is the cauldron where multitudes of diseases are brewed.

Most of the animals in zoological gardens and menageries die of scrofula or consumption, caused by too little air and exercise.

The health of school children would be better if they were confined less, and during the frequent intermissions the rooms were thoroughly ventilated.

Exhalation from the skin never ceases.

Moderate cold is beneficial to health; but it is a mistake to sit in cold rooms lightly clad.

Mental and moral apathy are quite as injurious to health as excessive excitement.

Punishment can never be entirely banished from education; but if wisely enforced during the first ten years of life there will be little need for it afterward.

Home education carries its influence through life. It should be made such that all can look back to it from mature life with delight.

Self-possession is a most valuable mental power. It prevents our being taken by surprise.

Without property the human race would hardly be superior to animals.

There is no such thing as over-education, but there may be and is much one-sided education.

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A severe illness often produces a great nge of the temper.

Better be known by our works than by our th; the former is our own work, but a noble th is the work of parents.

If only cold water were drank, there would t be a drunkard in all this wide world.

If you make of yourself a donkey there will no end to the burdens people will place on ur back.

It is better to be a cracked diamond than a nd pebble.

Every day of our lives is a leaf of our his-y, a leaf that we can never turn back and ace what we have written.

Two friends can dwell in a very small place, e whole world is hardly large enough for o enemies.

Pleasant words ought always to be spoken a child; there must be neither snarling nor apping, nor loud contention toward him. If there be it will ruin his temper and disposi-on, and make him hard, harsh and disagree-le.

In people much isolated from light the fibrine d albumen and red corpuscles of the blood e diminished in quantity, while the watery portion is greatly augmented. Where light is not permitted to enter, the physician will have to go.

It is an excellent thing to turn the criticisms of our enemy to a good account. He knows our distempers of mind and body better than we do. He hugs our faults with an affection remarkable. He gloats over our short-comings. As the vulture hovers around decayed flesh so does he around our failings. It would save us all much trouble in our studies of ourselves to take our enemies' estimate of our worth, and try to double and quadruple it.

Intemperance and effeminacy make multitudes fly to the proverb, that "Wine is best after wine, and one debauch is the best way to drive out another."

Plato exhorts us not to employ the mind without the body, nor the body without the mind, but to keep them like a pair of horses; and when at any time when the body toils and labors with the mind, then to be more careful of it, by keeping it in its beloved health, believing that it obliges us with the best of things, when it is no impediment to us in business, discourse, or the enjoyment of virtue.

Rest.*

REST is re-creation; that is, reproduction of power, to be stored up in the tissues in reservoirs. Examples of reserved forces roughout the animal economy, and even in e vegetable world, seem to indicate a comete system of stored power, to be reproduced fast as consumed; and the supply, so long as e conditions of health are observed, to be in act ratio to the demand.

Weariness is a sensation of power lost. It ffers from simple weakness, which is a want power. Therefore weakness is an element weariness, the latter never existing without e former, while the former may exist without e latter. Common parlance recognizes this fference. We speak of weariness as a feeling being worn out. This is literally correct. a normal condition of the system, the processes of assimilation and disassimilation are perfectly antagonized, the one by the other. These processes are necessary to the vitality of the tissues. Life is a continual death, a continual wasting of material, and the supply must be maintained, otherwise life ceases as a fire ceases to burn when the fuel is exhausted. Life is action, therefore an unusual degree of activity involves an intense form of life, an extraordinary destruction of tissue. This destroys the balance between assimilation and disassimilation, and, so long as this action continues, the two operations will be disproportionate, reproduction not keeping pace with the waste. An organ in constant exercise is thus actually wearing out. It is true that the demand, in a measure, regulates the supply; that the greater the consumption the greater is the production of new material. Here we find the law of compensation illustrated. But this change requires time, and, meanwhile, destruction is going on in

* A paper read before the Berkshire District Medical ciety, by Irenæus P. Davis, M. D., Lenox, Mass.

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greater ratio than reparation; moreover, as the supply is increased, the action becomes more intense, consequently consumption is ever in advance of production; hence we experience weariness, the sensory nerves convey intelligence of the exhausted condition of organs that have been long in action, and warn us to give them time to recuperate. If we cannot, or do not, heed the intimation, the destructive process goes on till the organs are no longer capable of performing their functions, and, perhaps, till the power of assimilation is forever lost.

Were the waste and repair of tissue always equal during activity of organs, their action might be continued indefinitely; and this is indeed true of some. The operations performed by the organs concerned in circulation and respiration, and some of the organs of secretion and excretion, with the nerves controlling them, are frequently cited as instances of continual action; but the heart, perhaps the most often referred to as illustrative of this condition, does not act without intermission, and the same is doubtless true of most of the other organs mentioned. The intermission is brief, but so is the action, and the relation of waste to repair is so adjusted that the brief period of rest is just sufficient to preserve the equilibrium between the two processes. Probably the best example in life, of incessant activity, is afforded by the nerves of hearing. For them labor is the normal condition, and in them the opposing forces of assimilation and disassimilation are so perfectly balanced that in a state of health they require no rest. Even in sleep the nerves of hearing remain on the alert, taking cognizance of every sound, and discriminating one sound from another with as unerring accuracy as during waking hours. That this is a fact is beyond doubt. Although during profound sleep the mind is unconscious of sounds, yet it must be that they are appreciated by the organs of hearing, for sound is a common means of rousing persons from sleep. Now, in order to dissipate sleep it is necessary that some cause shall operate, the effect of which will be appreciated during the continuance of sleep; and as the impression of sound is received only through the medium of the auditory nerves, did they cease to exercise their power during sleep, no sound, however loud, could possibly wake a sleeper. Again, we find that persons having fallen asleep in the midst of continuous noise, always wake on the sudden cessation of the sound; showing that not only are sounds occasionally heard in sleep, but they are always observed when present. We also observe that the mother wakes at the first cry of the child, and the physician at the ringing of the office bell, while the same persons, in many instances, sleep uninterruptedly through the severest thunder-storms; and those who are acquainted with the business of telegraphing say that in offices where a dozen machines are in use, each with a separate attendant, it is common for a night operator to sleep until his own machine calls, when he instantly springs forward to receive the message; though he may be until that moment sleeping soundly and on the opposite side of the room, and though half of the machines in the room be ticking at the same time and almost constantly changing, some stopping and others commencing, while all are so nearly alike in sound that a stranger has difficulty to distinguish one from another even while awake. Therefore we know that the nerves of hearing distinguish accurately, during sleep, between different sounds. It follows, then, that persons living in the neighborhood of waterfalls or other sources of incessant sound, can have no rest for the organs of hearing. Nor is such rest necessary. As has been before remarked, the arrangement is such that the action of hearing can go on indefinitely without fatigue. The sense of hearing is beyond our control. So long as sound is present we must receive it. Even the action of the heart is less removed from the influence of volition than that of the organs of hearing, while the operations of digestion are in a much greater degree controlled by the will; and, other things being equal, just in propostion to the susceptibility of voluntary control is the amount of rest required. This law seems to be universal in its application to the human system, and its utility is at once apparent. The voluntary muscles being more under the control of the will than any other parts, require and receive a greater amount of rest than any other organs.

The manifestations of the exhausted condition consequent on neglect of rest are somewhat varied. When the exhaustion is slight a sensation of weariness, with temporarily diminished power, are the immediate results; while the law of supply and demand, before noted, provides that if action be now suspended for a time nutrition is increased and the power for subsequent action is intensified. When exhaustion is complete, loss of power and atrophy of course result. If exhaustion, being very great, is yet not entire, a disordered and convulsive action ensues, seemingly the final effort of life for mastery; for it is a universal

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w of animated nature, that as death approaches the vital energies are concentrated in e mighty effort for the continuance of life. stances of the operation of this law are seen ong vegetables. The dying tree puts forth seasonable blossoms, or gives other indicaons of that struggle without which life is not elded. The peculiar relation of one organ another, known as sympathy, and supposed depend on some sort of nervous connection, s, although its operation is not understood, rtain well marked and definite results. For ample, traumatic inflammation occurs in one e, and without contagion, without direct iry, without any known cause, the other eye comes inflamed also, and we say the extension the disease is sympathetic; or one organ being seased, sympathetic pain is felt in another orn entirely distinct, and to all appearance healy. A similar phenomenon often occurs after adue action of one part. Other parts, not conrned in the action, sympathize in the exaustion following it, and require rest. That is sympathetic exhaustion is not dependent a contiguity of parts is proved by the fact at it occurs in those that are remote from the at of action, as when a fatiguing walk is folowed by neuralgic pain in the face; and that is not due to the general drain on the sysm caused by the wearing out of a part, by e fact that a very great degree of sympaetic exhaustion follows the exercise of a very nall organ, as, for example, the eye.

Rest may be absolute or relative. Absolute st consists in a cessation from labor. Relave rest is a change of labor, the change being ot in degree, but in kind. Examples of the rmer are afforded by voluntary muscles, rves, and all organs requiring rest, whose fice is to perform a single act. Examples of the tter mode of rest are furnished by the brain, hich is capable of performing actions differg in their nature. The muscle simply conacts, the nerve conveys impressions only, hile the brain receives impressions, converts em into impulses, originates ideas, forms the ideas into thoughts, clothes the thoughts with language, and gives expression to the language. All of these are different forms of labor, the capacity for each depending on a reserve power distinct from the power which limits each of the others. Therefore, one action of the brain being suspended, the reserve power by which it is maintained may be reproduced even while another action of the same organ is going on. Thus the brain receives rest relative to one mode of labor, even while it continues to labor in another direction. But this change of labor is not sufficient to maintain the equilibrium of health, and, therefore the brain receives also a certain amount of absolute rest. The condition of sleep is to the mind what relaxation is to the muscles, simple inaction. During sleep the intelligent faculties cease to operate, though the organs of sense retain their power to receive impressions, and reflex action continues; so that, though external impressions are constantly being received, no intelligent action is taken thereon. Too little sleep produces in the brain the same results that follow excessive action in other organs, viz., exhaustion, irritability, and disordered action. On the other hand, too much sleep produces the legitimate effect of long continued inaction, inertia. Inaction ceases to be rest when it passes beyond the point necessary for recuperation. After this point is reached, if the force generated is not consumed the vascularity of the neglected organ soon becomes permanently diminished, nutrition is impaired, and atrophy ensues.

The relations of rest to disease is exceedingly interesting, and vitally important, but time forbids more than an allusion to it on the present occasion. As a curative measure, rest is of the greatest consequence in the management of all inflammatory diseases and of nearly all others. In importance and in universal application it stands far ahead of all other therapeutic agents. "If he sleep he shall do well," is a maxim which has received the sanction of all schools of medicine in all ages and in every land.

The Yellow Fever Epidemic in Memphis.

BY G. W. KIBBEE, M. D.

MEDICAL literature of the past, from the time of Hippocrates down to the middle the present century, is largely made up of eories based on symptoms attending the vitalized human organism in its struggle against whatever proves inimical to the life principle. Owing, however, to the almost infinite number of substances, visible and in isible, whose prop-

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erties are uncongenial to life, that have from time to time beset it, and been the inciting cause of excessive, diminished or irregular vital action, which occasions all the varied and multitudinous vital phenomena known as fever, inflammation and disease—different names for the same thing—namely, disturbed vital action. Medical men, from time immemorial to the present, supposing they had an *enemy* to fight in the system, unfortunately have mistaken the disturbed action of the vital principle itself for that supposed enemy; and have, to use the language of an eminent author, "wrought more misery upon the human family than war, pestilence and famine combined." In nothing have they been more at fault than in the treatment of the human body while its vital force is endeavoring to cast out the poisons known as infectious. The great scientists of our age—among whom Tyndall is eminent—have arrayed many facts which go to show that the vital disturbances known as scarlet fever, yellow fever, small pox, measles and cerebro-spinal meningitis are all caused by infusorial animalculæ, having a class individuality which induces the different results of vital action; giving a scarlet, yellow or pustular appearance. As to a remedy against these vitalized infinitessimal poisons, not a scientist of them all has even suggested one; every physician trying first one poison and then another, hoping in vain to destroy the animalculæ; until at last they seem to have hit upon a plan which was lately tried with such fatal effect in Memphis, that of *sweating* them out; and, to-day, small pox, yellow fever, scarlet fever, measles and cerebro-spinal meningitis are as much dreaded by the people of this country and Europe as they were before the microscope was invented.

Many years ago, while using cold water as a last resort in a case of typhoid fever, I was forcibly struck with the immediate change for the better of all the unfavorable symptoms from the moment that the vital heat was reduced to the normal standard; and while continuing the treatment it occurred to me that the poison in the system served as yeast or leaven, and that the impurities in the blood were converted into the poison by excessive vital heat. On this principle I treated typhoid and other common forms of fever for many years, gaining an experience which gave me an unshaken confidence in the cooling treatment for *all* vital disturbances which result in excessive heat, including scarlet fever, yellow fever, measles, small pox and cerebro-spinal meningitis. During an epidemic of scarlet fever in this place in the winter of 1871-2 I had such success as to give absolute assurance that where the vital heat is kept at the normal standard with water, in any vital disturbance caused by infectious poisons, whether vitalized or not, it is simply impossible for the exciting seed poisons taken into the lungs to reproduce themselves; and that as soon as the seed poisons are all developed and cast out of the system the patient is well. So firm was my conviction of the truth of this theory and so certain was I of the results of the use of water, that I had not the slightest hesitation, when my near neighbor came home to die of small pox last spring, in offering to take his little daughter, who had been exposed to the poison, into my own house among my own children—not one of whom had ever been vaccinated—stipulating only that should she be taken sick we might treat her as we would one of our own; which would be to keep the vital heat at the normal standard with cold water during the whole term of the fever, feeling assured that thus treating her would prevent the possibility of the poison so developing as to cause her to impart it to our children.

When the yellow fever was first announced as epidemic in Memphis, so confident was I that I had solved the whole question of the treatment of infectious poisons, whether infusorial or not, that I wrote to the Board of Health of Memphis, offering to go there, with my two young sons as nurses to administer the cooling treatment, if they would furnish me a ward in one of their hospitals, or allow me other facilities for thus treating their stricken ones. I waited in vain two weeks for an answer, when I left for Memphis by myself; finding on my arrival that the Board of Health had no use for the cooling treatment, as Dr. Luke Blackburn, *who had had much experience in infectious poisons*, had infused them with the notion that the sick of yellow fever should be kept in a constant *sweat!!* According to his own showing, however, in the wind-up, he had lost *forty-seven per cent.* of all who had been admitted into the great Walthall Infirmary.

My success there during the four weeks of my stay seemed proof positive to myself and all those witnessing the treatment that WATER, so applied as to keep the vital heat at 98° in the axilla, is a sovereign and *sure* remedy against the poison which causes the vital disturbance known as yellow fever. My first case was Miss Katie Walsh, a young woman of Irish birth, domestic in the family of Mr. Henry Frank. I was called to her at 2 P. M., on Monday, the

t of October. Her sickness commenced with hill, as is usual in yellow fever, and she had n suffering with all the symptoms attending very severe attack for twenty hours. Her se, seventy in health, was 130, and her vital it, 98° in health, stood at 105° in the axilla, armpit. She had extreme nausea at the mach and great soreness in the epigastric gion, from vomiting; excruciating pain in head the region of the kidneys and all ough the limbs, engorgement of the con- nctiva, suppression of the urine, and aggra- ting thirst. She was very much alarmed, ving sent for the priest, who arrived soon after lid. The family having all fled on the break- g out of the fever in the city, I had her sister, o was left with her in charge of the house, bring two large bed sheets, a half dozen tow- , and a pail of cold water. I folded one eet so that it was wide enough to reach from e hips to the armpits, and long enough to go ound the body. She was then raised in the d to a sitting posture, the sheet so folded as dipped in the cold water, wrung lightly d laid on the bed, when she laid down on it d it was wrapped around her. The other eet was dipped into the water, folded once, and e lower extremities from the hips wrapped it, and a jug of hot water put to the feet. towel was wet and placed over the upper rt of the chest, one around the neck and one the head; and all sheets and towels were wet and re-applied as often as the skin felt e least warm to the hand of the attendant; hich in her case was every twenty minutes or lf hour during the continuance of the fever, hich was about forty-eight hours from the mmencement of the treatment. Her pulse as reduced in one hour from 130 to 115, where remained during the time of the exalted vital tion; and she never experienced a twinge of in after the blood was cooled to the normal ndard. The kidneys performed their func- n, the thirst ceased, and not a single symp- n supervened to cause the slightest alarm to e patient or her friends. She recovered her ual strength within three or four days from e time the poison was all expelled, showing no llowness of the skin, and not a single func- n deranged in the slightest degree. Mr. Pe- Haggerty, on the police force of Memphis, o called me to the case, knows all these ts, so does the Rev. Father Quinn, her con- sor, likewise her sister and a young lady end who assisted in nursing her, the How- l Association visitors; and, best and most nclusive of all, she herself has an experimen- tal knowledge of the power of cold water to ease pain and restore health.

On Tuesday morning, October 22d, I was called to Mrs. P. C. Denison and Miss Ida Barbour, at 179 Second street, who had been taken down the previous night with all the severe symptoms attending yellow fever. Cold water was applied, as in the first case, and the fever lasted about two days and nights after the treatment commenced, when Miss Barbour had a rapid convalescence; but Mrs. Denison, from some imprudence, took a relapse, and for forty-eight hours her blood was just on the point of disintegration. Towels wet in ice-cold water were placed over her whole body from the hips to the armpits, and re-wet every few minutes for more than two days and nights; hot flannel cloths were applied to her lower extremities, and bottles of warm water were kept at her feet. She just barely escaped, but was as well as usual in two weeks from the time her fever left, being about as yellow as saffron for a few days; but her skin was clear by the time she was able to walk. This case is a fine illustration of the power of cold water to control yellow fever, as the lady is very delicate, and in her ordinary condition can scarcely touch water much cooler than the blood. Her sister, Mrs. Barbour, and Mr. E. Barbour, her brother-in-law, know all about this; so do Mr. M. M. Beach and Mr. Ross Hutchinson, inmates of the family. The wife of Mr. J. C. Johnson, cotton merchant and president of the Citizens Relief Committee, and the visitors of the Masonic fraternity (Mrs. Denison being a free-mason's widow) are personally knowing to the facts in this as here stated. All physicians and medical societies who desire testimony from the profession confirmatory of my statements of this, and all other cases of yellow fever which I treated in Memphis, are referred to Wm. Hewitt, M. D., one of the oldest and most successful practitioners of medicine and surgery in Memphis, and among the most honored members of her city council. The editors of any popular journal of medicine who desire to publish a disquisition on the treatment of this and all other fevers with water, as coming from one who is thoroughly acquainted with all the developments of modern science, an honorable graduate in the three great popular schools of medicine—allopathic, homeopathic and eclectic—and on kindly terms with them all, will do well in applying to him. I speak of this matter as if it demanded the attention of the physicians and people of the whole civilized world; for what I did in Memphis with

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cold water was not confined to a corner. The daily papers were teeming with my philosophy and practice; and I predict that never again in Memphis will the "boiling, baking and roasting process" be resorted to, as stigmatized by a medical visitor from Cincinnati, who was "among them taking notes;" a process which lost to Memphis seven of her most honored physicians; five clergymen, who went into the very jaws of death to administer spiritual consolation to the dying, a host of sisters of charity and other noble souls who risked and lost their lives for sweet charity's sake, and fifteen hundred of her citizens, taken indiscriminately from all the walks of life. Add to this the spectacle of thirty thousand of her people fleeing from their homes as from a pest-house, and there is an accumulation of horrors that the philanthropic of the whole world will strive to avoid in future, even if it compels medical men to acknowledge that they have heretofore misunderstood nature in the instinctive longings for cold water, which she has given to all sentient beings whose vital heat from any cause rises above the normal standard. I treated, in all, nine cases of yellow fever in Memphis, each one of which varied from all the others, and helps to illustrate the universal applicability of the principles and practice which I adopted. I therefore propose, in another issue of this journal, to give the symptoms and treatment, in short, of the other cases; together with a succinct statement of the philosophy of the cooling treatment for fevers of every name and type.

The Stump Fence.

BY LUCY LEE HOLBROOK.

JOHN HARNETT and Susan Day were in love with each other all the neighbors said, and you would not doubt the fact if you should see them once together. John was just home from college, and considered himself a little ahead of the rest of the young fellows of the country town. He was more stylish in the cut of his coat, wore a tall hat and gloves, and kept his boots well blacked in spite of the country mud and dust. Some of the plainer fellows, jealous of him no doubt, said that he carried a rag in his coat-tail pocket purposely to dust off his boots in the churchyard, Sundays, before walking up the church aisle in immaculate perfection of costume, just after the service had commenced.

If he did, Susan Day was partly to blame for it; for her father's pew was just opposite the Harnett pew, and though her eyes were fastened intently upon the hymn-book, the moment she was conscious of his presence, she managed somehow to gather in every point of detail, during the sermon, and showed an evident approval of his *tout-ensemble* when, the benediction pronounced, they met—accidentally of course—in the aisle, and walked out of church together.

But if Susan approved, old Farmer Day—who sat in the pew corner, and used *his* eyes as well—did not. He had no patience with these college learned young men, who might have Greek and Latin and such rubbish in their heads, but knew nothing of plain, practical farming and money-making. "It's the fools that are sent to college," he was accustomed to say; "the wise ones stay at home." If John had eyes for any one but Susan he might have seen that the old man's stern glance from underneath frowning eyebrows, boded no good to his bright hopes.

John had the vanity to consider himself an all-conquering hero among the maidens of Mentonville, and with some reason. His white hands, his curly locks, his bright eyes and tall slender form made him an Adonis in their admiring eyes; and the pretty speeches he could make, and the poetry he was accustomed to contribute to the weekly *Democrat*, helped him to slay his thousands. I speak figuratively, of course, for there were not more than a dozen or two of pretty girls in the town; but he was sure he could have any one of them for the asking, and so made love to Susan Day, the loveliest of them all, without much question of his mind of anything but smooth sailing in Susan's heart, and eventually into a part of Farmer Day's snug property.

John was an only child. His father had died while he was yet a lad, and left him

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ne little property in his mother's care; and
, a rather weak woman, doting upon the
y, had done her best to spoil him. She had,
wever, given him a good education so far as
ok knowledge goes, and had a faith equal to
own that he would become some day, if not
esident of the United States, at least some-
ing equally good. They lived upon a small
m adjoining Farmer Day's, and, as you may
ppose, the widow's land was not tilled on
ictly scientific principles. It was an especial
esore to Mr. Day; he hated anything like
iftlessness near him, and while his kindly na-
re excused the widow's want of experience,
was inclined to lay all the blame upon the
ung man.

Susan was his youngest daughter, his espe-
al pride and pet; the brightest, wholesomest,
yest girl in town. She was full of energy
id character, with a great fondness for out-
or life, and glad at any time to accompany
r father and brothers over the farm, or in the
agon to mill, or to the next town where most
the trading was done. She could drive the
am herself, too, and thought nothing of go-
ig out into the pasture, catching the colt,
rowing the saddle upon its back, and away for
wild race over the hills.

And yet she was not in the least unwomanly.
ou would be sure of that, looking into her
oft dark eyes and at the tempting curves of her
weet mouth. She only filled herself so full of
ealth, and happiness, and magnetism by this
ind of life, that many another young man
eside John found her dangerously attractive,
id would have enjoyed a good knock-down
ght with him because she gave his jaunty
ays the preference. It was a wonder that she
d—on the principle of contrast I suppose. I
ink she saw his faults and generously covered
em with the large mantle of her love; and
e knew better than any one else in the town
e latent capacities of the man.

But even he could reach only a certain point
her affections. To all his pleading she would
ake answer: "I fear my father is not will-
g I should marry you, and until you gain
s consent I cannot be your wife."

"But what has your father against me?
here isn't another man in town that would
eat me so, nor girl either," he added, rue-
lly.

"Well then I wouldn't be treated so," an-
rering the last part of his speech to avoid the
st; "there are plenty of other girls who like
u and will marry you."

But it was this very treatment that held him to her, according to the perverse spirit that dwells in man and makes him follow that most eagerly which he is least likely to obtain; and after drawing from her a sufficient number of assurances of her undying affection to satisfy his vanity and his heart, he left her, promising to seek an interview with the old gentleman in the morning.

Farmer Day was in his potato field next morning when he saw young Harnett climbing the fence and coming toward him. Now, as I said before, the old gentleman had eyes and knew pretty well what was going on, although Susan was very reticent upon the subject, and he suspected what John was coming for.

He quickly made up his mind. I will not say *no* to him, he thought; but I will give him a job to do, that will either send him off or prove him of better stuff than I think.

He was hoeing dilligently when John said "Good morning," and stopped only long enough to answer the greeting. John kept by his side down one row and up another, remarking upon the weather, the crops, and even last Sunday's sermon, although in his desperation he could not remember one word of it, and still the old man hoed on.

At last the piece was finished, and the farmer stopped to wipe the perspiration from his face. John seized the opportunity, and with a very red face and stammering tongue made known his errand. If the farmer had any recollection of his own experience of this kind, he should have had pity upon the poor fellow, but no feeling showed itself in his face as he slowly drew on his coat, and quietly proposed a walk across the fields. Full of wonderment John walked with him, glad the ice was broken, but with a certain foreboding as to what the answer would be. The farmer said nothing upon the subject at issue, but pointed out with commendable pride his corn and grain and stock, all in prime order, and conversed on the best methods of farming and the experiments he had tried, until they came at last to a large meadow, level and smooth, enclosed upon its four sides by a magnificent stump fence.

"Do you see that fence young man?" he said. "Well, I did all that myself. It is the best thing of its kind in the country, and can't be beat. When you make one equally good around the same amount of land you shall marry my daughter, but not before. Good morning, sir!" and the old man trudged back to his work, leaving the young man alone in the sunshine, with a wrath in his heart that for

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a while completely shut out the ache that was coming there.

"The old fool! that is his way of getting rid of me," he exclaimed at last; "but he won't succeed, though, for I'm made of better stuff than he thinks for."

He walked excitedly along the field, closely examining the work of the fence. The stumps were all of oak, cut of the same size and length, and laid upon their sides, and the roots so closely interwoven that hardly a squirrel could crawl through. It required a giant's strength, it seemed to him, to do it at all; but he did not doubt the farmer's word that it was the work of his hands.

He looked at his own hands, white and delicate, with a broad ring upon the little finger. He felt of the muscles of his arm, soft and flabby as a woman's, almost. He breathed a full inspiration of his chest, but it would not measure more than thirty-two inches. What could he do at such a work as that? I must confess it, he sat down upon one of the stumps of the fence and cried. Do not think him too babyish, nobody saw him, and this was the first great trouble of his life; and he had never been disciplined and cultured in the direction of bearing hardships.

I think mothers are too apt to forget the fact that their sons must some day *bear the burdens* of life, and that it is better to train them to bear it, not by putting unnecessary burdens upon their young childhood—God forgive us for doing that—but by teaching them to meet bravely the troubles that *must* be met.

A great disappointment had come upon him, and the ache had begun with such strength that it completely shut out the possibility that still lay open before him of gaining his love.

But by-and-bye he saw a white sun bonnet and a pink dress coming over the field toward him, and he had barely time to dry his eyes and stow away his pocket handkerchief before Susan was by his side. Of course she had espied the two men together in the potato field, and had watched every movement with love's anxiety; and when her father returned alone and John stayed away from her, she guessed the result. Taking her sun bonnet she stole away by the back door and found him here. She sat down by his side and listened to John's statement of matters. After he had finished she said, quietly, "Well, you can do it, John, if you will."

"I thought so, too, at first, Susie; but you don't realize how hard a thing it is to do."

"Yes I do; many and many a day I have watched him at this very work, and helped him too; and if *he* can do it you can."

"But he is strong and muscular, and used to such work."

"I think there is just where the trouble lies with you, dear John; a man is respected for his strength physically, as well as intellectually and morally, and this is something more than a careless way of dismissing you on my father's part. He gives you a chance still."

John did not answer, but arose and walked a little way off and stood leaning against a tree, with folded arms. Susan's words had struck home, and for the first time in his life he saw clearly wherein he was lacking, not all the details that came up to him in legions it seemed to him afterward, in his work of reconstructing himself, but as Farmer Day saw him, a man not worthy yet to take upon himself the sweet burden of a wife and family, to carry it and his duties to society as became a man to do. He saw his weakness, and then a strong inspiration came down upon him of what he was yet capable of doing, and he felt his strength. It was like a new birth.

He came back with swift strides to Susan, who had sat sorrowfully watching him, for she had the heartache, too, and, seizing her two hands in his, bent over her with flushed face and eager eyes and asked, "Will you wait for me Susie until I do this thing?"

"Yes, John, ten years if you wish."

"Not so long as that, my darling; but God helping me I will be worthy of you yet."

He gathered her in his arms, kissed her again and again, on lip and cheek and brow, whispered "Good-bye," and went away.

The next Sabbath the good people of Mentonville missed their accustomed sensation at the commencement of service, and on inquiry as to where John Harnett was, learned that he had gone west.

But three years thereafter a stranger walked up the aisle; a not very powerfully built man, but with frame well knit, sinewy and strong; a broad, full chest, brown hands that had evidently been accustomed to labor, and a fine intelligent, manly face, that made you feel at once that there was strength and purpose there. He took the seat that John Harnett used to occupy, and glanced across the aisle to Farmer Day's pew. Susan was there, more mature and womanly, but none the less lovely, and as their eyes met he saw that her quick love had recognized him.

Old Farmer Day seemed much disturbed during the sermon; he put on his spectacles twice

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nd peered sharply at him before he made up is mind that this man was indeed John Harett.

There was more respect than he was accusomed to show even strangers, as he shook hands with him after church. John said quietly:

"I have a stump fence around my farm in Ohio, that I shall be proud to show you, Mr. Day."

"I do not doubt it. I do not doubt it, Mr. Harnett," said the old man, warmly; "I am too old to go and see, but I take your word for it, and there is my daughter if you still wish to marry her."

If you wish to see that fence you can do so by getting off the train at Harnettsville, Ohio. The place is not down in geographies as noted for its stump fences, but it has one very nice one belonging to Judge Harnett, the hero of this story, after whom the town was named.

Thoughts on Toothpicks.

BY S. PHILLIPS DAY.

THE other day that public censor, *Punch*, laid his hand rather heavily upon those "Savages in Clubs" who, dead to all feelings of delicacy, adopt the revolting and brutal practice of picking their teeth with sharp instruments while at table, and even in the presence of ladies. One can scarcely conceive a habit more ungentlemanly, offensive, and abominable. Albeit not followed so generally as it used to be, still the objectionable act is sufficiently in vogue to justify private animadversion and public reprobation. We quite agree with our facetious contemporary that fashionable persons who persist in this odious practice should be ostracised from Club dining-rooms, and special chambers set apart for them, so that they may no longer inflict suffering upon others whose delicate organizations they cannot understand, and whose sense of decorum they fail to appreciate. This summary proceeding may readily be justified on the humanitarian principle inculcated by Oliver Wendell Holmes, in his charming "Autocrat of the Breakfast-Table." Referring to the influence induced by the presence and demeanor of certain people, the sagacious philosopher observes: "One who is born with such congenital incapacity that nothing can make a gentleman of him is entitled, not to our wrath, but to our profoundest sympathy. But as we cannot help hating the sight of those people, just as we do that of physical deformities, we gradually eliminate them from our society—we love them, but open the window and let them go."

The toothpick—or pick-tooth—is derived, it appears, from the *stecco* of the Italians and likewise formed the crude idea from which the two-pronged fork was drawn. The instrument was unknown in England before Queen Elizabeth's reign. A few of the early dramatists make reference to it. Thus in Ben Johnson's "Every Man out of his Humor" (act iv., sc. i), Fallace, the Citizen's wife, cries:—

"O, sweet Fastidius! O fine courtier! How cleanly he wipes his spoon at every spoonful of white meat he eats, and what a neat case of pick-tooths he carries about him still."

From this passage critics consider that although Fastidius carried a bundle of wooden skewers sharply pointed about his person, nevertheless he did not use them to pick his teeth, but simply for the purpose of conveying solid food to his mouth, just as the Chinese make use of chop-sticks for the like purpose; that is, to serve in lieu of a fork. Court gallants also employed spoons to eat white meat. The toothpicks were carried in neat cases and were regarded as gewgaws. Hence they were used ostentatiously at meals, and on other occasions by way of distraction. Thus Overbury, in his "Characters," observes of an Affectate Traveler that "his toothpick is a main part of his behavior," clearly intimating that the shocking habit of picking the teeth had not then been in vogue.

Sandys observes, "If toothpicks of the lentise be wanting, of a quill then make a toothpick." Lentise, according to an old writer on Husbandry, is a beautiful evergreen, and made the best toothpicks.

Few but will remember the humorous inciden in "Sam Slick, the Clock-maker," illustrative of the use of toothpicks. A shabby-genteel

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ellow, with not a cent in his pocket, is represented lounging or "loafing" in the evening at the portal of a fashionable hotel, holding a toothpick in his mouth meanwhile, to give persons the false impression that he had just been dining there.

Some persons in America are particularly addicted to the foul practice of using toothpicks. In fact, not satisfied with the vigorous employment of such weapons during meals, they are said to carry them in their mouth out of the dining-room, and too keep digging at their eeth, or else twirling them between their lips for an indefinite period. This is an amusement equal to "whittling;" and a certain Yankee," as has been incisively observed, "can 'whittle' a toothpick out of a pine log."

Nothing can well be more revolting to sensitive, cleanly persons than the habit of picking the teeth either at meals or afterward. The material of which the nasty instrument of torture is made, whether of wood or quill, does not render the practice less reprehensible. I lately observed in a shop window in Holborn, a box of pretty-looking "diaphanous" toothpicks imported from France; and it sorely grieved me too think that so much ornamentation should be bestowed upon such injurious articles. The use of toothpicks should not be tolerated in civilized society, especially in what is termed "good society." Negroes do not need such things; then why should the white man? Savages can get on very well without such skewers; then why should the Christians patronize them? Beside they are highly injurious to the human teeth, creating apertures between them, destroying the delicate enamel which protects them, thus inducing premature decay. Therefore, both on the grounds of decency and health, the toothpick should be universally eschewed.

CHATS WITH THE CHILDREN.

BY THE EDITOR.

I purpose telling you a short story, after which we will have a little chat, and you can ask me just as many questions as you like. Story-telling is a very old-fashioned way of teaching. In the early history of the world, when there were no books, and no pens and ink, people told stories, in which they told all they knew. In the East this was a famous method of instruction. In Persia, Arabia and Egypt story-telling was an art, and the best story-maker was the greatest man—next, perhaps to the greatest fighter. The stories of the Bible are, to children, its most attractive feature The fables of the Greeks and the Romans will live longer than their statuary, or their literature. But my stories will not be so nteresting as theirs. They will be plain and homely, I fear; and the first one will be about —well, myself, if you please; at least it will be a story that might have been true about me and almost everybody else. You see, when I was a very little boy I disliked to go to school very much. I wanted to be like the lambs and the birds, free. Why should I go to school more than they; why could I not hunt bird's nests, chase butterflies, and ramble n the woods after nuts and fruit and flowers all the day long? What fun was there sitting on a bench hour after hour reading over dull, stupid lessons, breathing bad air, and keeping so still that my back ached for want of exercise. The teacher wouldn't let me whisper and talk without permission, while in the field I could halloo to my heart's content. Many a time did I urge my parents to let me stay at home, but no. Many a time have I tried to find a hiding place, where I could stay till school was over; but there was no hiding place for a little boy, so I went to school and studied as hard as I could, and learned what I could; not because I wanted to, but because I must. As years passed on I became more rebellious, and so I proposed one fine summer morning, instead of going to school to go somewhere else. Off I started along a pleasant road. The birds and bees were very happy. The flowers gave out a sweet perfume. The sun shone brightly on all the world. Soon I came to where men were building a house. I stopped to see them work. One was driving a plane, cutting long, thick shavings from a board, and making it smooth, at the same singing a merry song; another was using the saw, another the chisel. "Sure enough," said I, "this is fun.

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ese fellows are happy. I wish I could learn build houses," said I. "Do you?" said the rpenter. "It is very hard work." "Not so rd as going to school," said I. He laughed, d said: "If you want to work at my trade, will teach you." So I agreed to work at his ade. He gave me a hammer and some nails, d said: "There, drive all of those nails into is board—mind, don't break any, drive them straight, and look out for your fingers." ith glee I commenced my task. Nail after il went into the board pretty straight. Now d then I made a miss, and once my thumb as slightly bruised; but after I had worked it four hours and driven at least two hun-ed nails, I began to think there wasn't so uch fun in it after all. I believe it took me ve minutes to drive the last one. I was sure one thing, however, that I should not work t the trade any longer, I would try something lse. As I left the house I was startled to find at the carpenter was none other than my old chool-teacher disguised in a strange dress, a ct I had not before observed, and one that uzzled me exceedingly, and I ran to get out f his way; sure enough, I was discovered in ay efforts to evade the school.

As I went home I assed a place where nen were building a brick house. "Ah!" said to myself, "this is where I will work." So he next day I appeared at the office and offered ay services. I was soon installed at work to ait on a mason, to carry brick and mortar, to limb ladders, run along walls, do errands, and nake myself useful. "Sure enough," said I, this is fun, indeed; but long before night I vas tired, my hands were red with the chafing f brick, and mortar was all over my clothes. was glad enough to say good night to the uilder, and as he raised his hat to me and aid I must be on hand early next day, I no-iced a twinkle in his eye. It was the teacher gain, in a different dress.

I should have gone back to school next day ontent, but on my way home I noticed how olly the farmers were, going home with hay rom the meadow, and I thought: "Why not vork in the fields with them, and be jolly, oo?" I did work there next day. I stirred he swath after the scythe, I carried water to he thirsty men, I raked after the cart, I trod he hay down on the back of the mow—the ardest work I ever did—and I finished my ask only to be again surprised to find that my eacher was a farmer, too. It was the same ne whom I met everywhere. I could not, if I would, get away from him. I went back to school next day a wiser lad. I had learned this lesson, that labor is our great teacher, and that I could not avoid it if I would. I have not forgotten the lesson, and I never shall forget it. Now for your questions!

Q.—I should like to know how anybody ever first learned to build houses before there was a house anywhere.

A.—I suppose the first houses built were very rude, poor ones. Indeed, it is believed that they might have been holes in the ground, and caves; then after that made of bark, as the Indians make theirs. It would not be very hard to find out how to make such a house. Afterward people made them a little better and better by thinking more about it. Even now very few people know how to make perfect houses. In every city and town there are men who study how to build them. It was a long time, no doubt, after the first poorhut was made until a good house was built, with windows to light it, and doors to go in and out, and chances for fresh air.

Q.—I want to know how the teacher knew where to find you every day?

A.—You have asked a puzzling question. If I tell you my father told him you will wonder how *he* knew. If I say the teacher watched me, because he had heard me talk about it to the other boys, you will say I might have got out of his way. If I say the other boys told him, you will think they were bad boys. So I will tell the truth. The teacher I spoke of, and meant, was not the real school-teacher, but labor. That is everybody's teacher, and goes everywhere.

Q.—What makes boys sometimes hate to go to school?

A.—Sometimes for one reason and sometimes for another; sometimes it is because the teachers are not good ones, sometimes it is because they like to be moving about, and if they go to school they must study and keep still. Now and then it is because they are lazy, and do not like to take the trouble to study.

I think real good schools, that do not keep the children confined too much, are very pleasant places, and most children like to go to them.

Q.—Why does a boy have to go to school, and a bird and a colt not?

A.—Boys and girls go to school to learn something. Birds haven't much to learn, so it does not take long, and their mothers can teach them. I suppose a young robin can learn all about flying in a half a day. And then they learn quickly how to catch worms. I never

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could find out how a bird learns to fly south as cold weather comes on, and it is a greater mystery how they know how to build nests. People call it instinct. Which of you can tell who taught him to see or hear, or taste or smell? You do it because you can't help it. Colts have to be educated to work, to be saddled and bridled and driven; but their teachers are on the farm, and not in school-houses. A few days and the lesson is learned. Boys have much to learn, and some of it can be taught at school better than at home; still you learn the best of all you know at home—as how to behave, and love father and mother; and also how to work, which all should know.

EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

DEATH OF JAMES FISK.

I. Who killed James Fisk, Stokes or the doctors?

ANSWER.—Probably both, at least a majority of the doctors who testified in the case think he was poisoned by opium, and that the wound was not necessarily a fatal one. Fisk was attended by seven doctors and surgeons, all prominent men in this community. Dr. Tripler began operations by deeply probing the distressing wound, an injudicious proceeding according to some of the medical experts. Subsequently Dr. Fisher, Dr. Wood and Dr. White each used the probe. Several glasses of brandy and water were administered, also chloroform and morphine. The latter was administered by the mouth, and by subcutaneous injection, six times within four hours.

Dr. Wood testified that he told Drs. Fisher and Tripler, who were the choice of Mr Fisk's attendants, that they had two lives on their hands, Fisk's and Stokes's, and must administer the opium with their fingers on the pulse, and watch carefully the condition of Fisk's pupil and of his intelligence. He ascribed Fisk's death to shock, but admitted that the later symptoms, such as stertorous breathing, were symptoms of opium poisoning. He had heard of many cases of recovery from serious wounds in the intestines; he had seen, in cases of hernia, a portion of the intestines slough away and the patient recover; he did not, in the light of authenticated cases, consider Fisk's wound necessarily fatal.

Dr. John M. Carnochan reached Fisk's bedside some seven or eight hours after the shooting. He did not think, when he saw Mr. Fisk, that he exhibited the symptoms of shock; he had reacted; he thought the giving of two and a half grains of morphia by hypodermic injection was an extremely dangerous way of using opium; it was, he believed, at least the cause of his premature death; that is, it hastened his death. He thought Fisk could not intelligently have made his will if he was laboring under shock. He related cases that he had known of penetration of the bowels which had not proved fatal. On cross-examination, Dr. Carnochan said that he found Fisk, when he reached him, in an unnaturally somnolent condition; the wound did not kill him, the morphia did; there was a possibility that the wound had something to do with it, but he had none of the usual symptoms immediately following injury from a gunshot wound; there was nothing to indicate that he was suffering in any manner from the wound; it was a very dangerous wound, but not necessarily a fatal one.

Dr. Thompson, professor at the university, explained that death from shock arose from enfeeblement of the heart, while death from narcotism arose from coma, or from the head. Probing in abdominal wounds while the shock lasted, he thought should rarely be resorted to. Chloroform was contra-indicated by shock. It should not be used while the shock lasted. He thought he had seen death result from the administering of twenty drops of chloroform. He described at length the symptoms of opium-poisoning, which ends in coma, and declared that in death by shock, though there might be insensibility, that was different from coma. Snoring was utterly inconsistent with shock. Deep breathing was the clear mark of recovery from shock. He declared that the symptoms described indicated that Mr. Fisk had recovered from the shock. He thought the

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ength of time excluded entirely the idea of leath from peritonitis, and the only conclusion was that he died from an over dose of morphia.

Dr. Macready was examined as an expert on the effect of the wound, and the effect of the morphia administered. He was inclined to think, from their describing the doses by drops, that one-half more had been given than was supposed, as ten drops would be fifteen minims. The administering of morphia hypodermically nearly doubled its power. He was strongly of opinion, from the description of the case, that Fisk did not die from shock or peritonitis. There was not enough peritonitis to produce death, and the development of the symptoms were not those of shock. The symptoms were those of inflammation of the brain or uremic or narcotic poisoning. There being no disease of the brain or kidneys, he ascribed death to an excess of narcotics.

THE PANIC.

II. Has not the panic done much to cause ill health?

ANS.—Quite the reverse. It has given people something to think about who were lazy and idle before. It has made rich men's families temporarily economical in their habits. It has stopped some excesses. A friend said to Delmonico: "I suppose the panic don't affect you, people must eat all the same." "True," said Mr. D., "people must eat as before, but they do not dine." It is true, however, that there will be great suffering among the poor, especially among those who drink, and among the wives and children of those who have not been provident. If the panic should drive the latter to temperance and frugality, it would be well to have it hang over their heads a long time; but except in a few cases it will not. A little thrift, such as the Germans manifest, would place the poorest classes where a panic would not seriously disturb them. We do not believe in senseless panics; but, as we have them, the best we can do is to show a reasonable amount of manliness in tiding over them and putting our business on a safe footing for those that may come at another time.

OPIUM IN BURNS.

III. Is it safe to give a child opium in case of a burn?

ANS.—We think it always dangerous to give children opium sufficient to stop pain. Where this cannot be done by means of cloths dipped in cool water, poultices of scraped potato, carrot or turnip, it may generally and safely be relieved by cloths wet in alcohol and applied for a short time. Except in severe cases, however, this is not necessary, and in very young children care should be taken in its application. Very young ones are not often burned, however. Another simple remedy is Dr. Buck's burn mixture, in use at Bellevue Hospital, N. Y. It is made by disssolving two ounces gum tragacanth and four ounces gum Arabic in a pint of water, and adding a pint of molasses. Spread on with a brush, and repeat when needed.

CHOLERA—PALMERSTON.

IV. Is it true that Lord Palmerston ever had the cholera?

ANS.—Yes; and, remarkable to state, his cure was attributed, not to the drugs he took, but to the application of a hot smoothing-iron along his spine—not to burn, but to produce as high a degree of heat as could be borne. The treatment is philosophical, and might be useful in many other diseases where the external circulation is defective.

ICE IN NEURALGIA.

V. Is ice ever useful in neuralgia?

ANS.—Sometimes. Of course it must be used with care. M. Wenteritz reports a mode of very intense facial neuralgia which resisted every mode of treatment, that finally yielded to the application of ice along the affected side of the face, laid on at periods of five minutes. The pain disappeared in twelve hours, and after an interval of ten months has not returned.

HOW TO DISINFECT A ROOM.

VI. How should a room with foul air in it be disinfected?

ANS.—The best way to get foul air out of a room and fresh air in is to open the windows and doors, to let in the external air. This is the best possible purifier. If the room contain germs they will probably find surfaces to rest upon, and it is by cleansing all surfaces that the room is to be purified, and not by futile attempts to disinfect an ever changing atmospheric current. As germs of disease must be looked upon as dangerous enemies, they must be treated as an invading army and deprived of every possible feeding and resting place. As they are fostered in filth and putridity, all filth and decaying matter should be carefully removed, and decomposition should be arrested in sewers, on road surfaces, and in all holes and corners where putrefying matter of any kind is deposited. For the purpose of arresting decomposition, chemical substances should be used which do not by their nature defile the air, and are not dangerous, destructive or offensive; for

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it is of the utmost importance to make disinfection popular, and it is contrary to human nature to delight in substances which are irritating and obnoxious to the senses and which have a tendency to cause a positive evil in the attempt to prevent a possible one. For this reason the vapor of carbolic acid is obnoxious to disinfect a room with, useful as it may be in some places. Sunlight, perfect cleanliness and good ventilation are the best means of securing pure air in a room.

CURE FOR HARD TIMES.

VII. I want to know if there is any cure for hard times? If you hygienists can give a remedy you will be great benefactors.

ANS.—With the hope of being benefactors, we hereby give at least a hint that may be useful. Many people believe the times are hard, not because they have a hard time, but because they have been deluded into the belief by hearing so much said about it. This constant talk of hard times on everybody's lip spreads like an infection all over the country. The best thing to do, then, is to stop talking about it. It is only a passing cloud that will soon disappear. A lady was talking with us the other day about hard times. She could not afford to subscribe to THE HERALD OF HEALTH till money was plentier. We found on inquiry that her husband's salary was the same it was before; they were earning just the same and getting everything they bought for less. There was no hard time for her; she had only been deluded by hearing so much said about it. The next best thing to do is to keep on working, making up in industry and economy what is lost in other ways. Above all things, maintain your health. Sound health will carry you safely over a hundred panics, if you live so long as to experience them.

SOAP AND CRACKED HANDS.

VIII. Why does soap so often cause the hands to crack?

ANS.—Because there is in strong soap an excess of alkali, which acts as a caustic on the skin and makes it rough and inclined to crack. Such soaps should never be used on the body.

TRIALS OF WOMEN DOCTORS.

IX. Do women physicians find it easy to succeed?

ANS.—They have of course many trials. Here, for instance, is a case: "Dr. Eliza Walker has resigned the post of house surgeon to the Bristol (England) Hospital for women and children. In consequence of her appointment all the medical officers resigned. In her letter to the committee she says she is convinced that her resignation alone can relieve the management of the hospital from serious embarassment, and enable them to obtain the services of sufficient honorary medical officers. She regrets that she is compelled to take this step, not so much for herself as for the cause she represents."

Isn't it a wonder that the Queen of England don't have to resign in order to get men to serve as prime ministers or members of parliament?

SEDLITZ POWDERS.

X. What are Sedlitz powders made of, and are they harmless?

ANS.—Tartrate of potassa and soda, bicarbonate of soda and tartaric acid. Regarding their harmlessness, a little common sense should answer. Any one who visits Chilwald, England, can read in the cemetery the following epitaph

"Here lies me and my three daughters,
Brought here by using Sedlitz waters.
If we had stuck to Epsom salts
We wouldn't have been in these here vaults."

FROST AND YELLOW FEVER.

XI. Why does frost destroy the germs that produce yellow fever?

ANS.—They require a high temperature to propagate, continuously as high as 80°. Why does frost in October destroy any tender plant?

SANITARY CONDITION OF MEMPHIS.

XII. Was the sanitary condition of Memphis such as to invite yellow fever?

ANS.—Yes. A writer of that city says: "We have no system of sewerage in Memphis, and the necessary consequence is that the filth of the city is left to take care of itself. Our sanitary police consists for the most part of some half dozen of the chain-gang, who occasionally do little more than emancipate the confined odors of the kennels of Main street, and give wings to imprisoned effluvia. Our alleys and obscure streets are left to the rag-pickers, to porcine and canine scavengers to cleanse them of their superfluous foulness; and were it not for the rains of pitying heaven, would of themselves give abundant employment to our undertakers and gravediggers. And yet these are the least of the objectionable features touching the violation of the laws of hygiene in Memphis. Nearly every family in the city is dependent upon a cistern for its supply of water; nearly every cistern is

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n the same yard, in close proximity to, and enerally in a direct geographical line with the rivy. No intelligent man need be told of the ercolative and absorbent qualities of the earth, nd no Memphian need be reminded of the lifficulty of finding cistern water in the city ree from the impurities of animalculæ induced y decomposition."

One word here to our readers: The privy is a fruitful source of disease, especially of typhoid ever. It ought to be so perfectly and thoroughly disinfected by dry earth as to be free from all poisonous effluvia; and in no case located in proximity to wells or springs of water.

OLD MEN.

XIII. Have there ever been men living to the age of 100 and over in America?

Ans.—Yes. Robert Sexbury died on October 23d, in the town of Leary, Jefferson county, New York, aged one hundred and ten years and seven months. He had acquired great reputation as a hunter on John Brown's tract, in northern New York, where he had killed over 2,200 deer. When past eighty years of age he met with an accident which necessitated the amputation of one of his legs, and he assisted a country doctor to perform the operation without flinching. His funeral was attended by several of his children, aged between eighty and ninety years. There are many others on record; we mention this case because it is recent. We believe there ought to be a great many persons who should live to the age of one hundred, and that there will be when the laws of health are more generally observed.

DIFFERENCE IN BLOOD.

XIV. Does the blood differ in different persons?

Ans.—Healthy blood is full of corpuscles; these corpuscles have a tendency to cling together and form "roleaux," as anatomists call them. In some kinds of disease the quantity of of the red corpuscles and of these roleaux is greatly diminished. Dr. Sutherland, lecturer on insanity at Westminster Hospital, has examined the blood of more than a hundred lunatics, and he shows that an increase of the white corpuscles, or an absence of roleaux-forming power, indicates a low degree of vitality and advanced disease of the brain. He remarks, further, that in general paralysis and in epileptic insanity the blood is more deteriorated, and the vitality more lowered in males than in females; on the other hand, that in mania, melancholia and dementia the blood is more deteriorated, and the vitality more lowered in females than in males.

We have ourselves often examined the blood of persons in health and disease, and the difference in blood, as shown under the microscope, in healthy and sickly persons is very great.

BRAIN FUNCTION.

XV. What are the new discoveries recently made concerning the function of the brain?

Ans.—For some years past physiologists have known that certain parts of the brain have certain special functions, that they govern or affect certain parts of the body and no other. This knowledge was arrived at by investigations, chemical or electrical, of the living brain, or by observations of the brain in a state of disease. There was some truth in phrenology after all, only modern research has shown that phrenologists were wrong in their mapping out of the brain. Foremost among the newly discovered facts is that the left side of the body is governed by the right side of the brain, and *vice versa;* and this discovery was made by observing that palsy of either side of the body is accompanied by disease of the opposide side of the brain. One part of the brain governs motion, another sensation, another the operations of the intellect. The function of the cerebellum has long been an obscure question in physiology; that part of the brain is now found to be the great center for the movements of the muscles of the eyeball. In the disease described as asphasia the person affected loses the power of expressing his thoughts in words, either spoken or written. He remains intelligent, can comprehend what is going on, has no paralysis of the organs of speech; but is utterly at a loss to find words, and in some cases to tell his name. In such cases, as now ascertained, there is always palsy of the front part of the left side of the brain.

This is perhaps a brief synopsis of what our querist wants to know. It is very doubtful if all these discoveries are yet verified.

A SICK DAUGHTER.

XVI. To the Editor of The Herald of Health.—My daughter has just graduated at the well known Packer Institute for Girls, in Brooklyn, N. Y., but she has returned home thin, pale, very stoop-shouldered, weak in body, anything but the hearty girl she was when she entered there. What can I do for her to restore her to strength and health?

Ans.—Set her at house-work, garden-work, and give her a chance to eat, sleep and grow. By these means she may out-grow the evils she has had brought on her by this unwise method of education, which ignores, so far as it

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can, the body. The institution spoken of by our correspondent has no adequate system of physical culture for its pupils. If it had, such results could not occur.

VALUE OF DIFFERENT PARTS OF MEAT.

XVII. Why is there so much difference in the nutritive value of the flesh of animals in different parts of the body?

Ans.—Flesh is composed of numerous bundles of minute tubes adhering together in a mass. These tubes are filled with the juices of the flesh. Now the quality of the flesh depends much on the juices, while the tenderness or toughness depends largely on these tubes, and these vary with the age and condition of the animal. In old or ill-fed animals the tubes are more than the juices, and the meat is tough. In young animals it is the reverse. There is more nutriment in flesh of animals not too young or too old, and neither too fat or too lean.

SALTED VS. FRESH MEAT.

XVIII. Why is not salted meat as wholesome as fresh?

Ans.—1. Salt extracts a considerable portion of the juices of flesh. It also hardens the flesh.

2. The flavor is far inferior.

3. It carries far too much salt into the system. Much of the impaired health farmers have in spring comes from this source. This excess of salt with the meat begets thirst, loss of appetite, impaired digestion and skin disease. It would be far better for them to eat no meat in winter, but substitute oatmeal, molasses, cream and fruit for salted flesh, than to eat so much of the latter. By this diet they would rarely have the debility in spring now so common.

EXTRACT OF MEAT.

XIX. Is Liebig's extract of meat as good as is claimed by the manufacturers?

Ans.—No, not half or a quarter as good. To make, for instance, one pound of this extract requires thirty pounds of flesh, but is all the nutriment of the flesh condensed to this amount? By no means, but only the juices of the flesh and those parts soluble and the least nutritious. For very feeble persons, who can take but little food, it may be useful; but as a staff for the sick generally, who need good nourishment, it is a broken reed.

BUTTER.

XX. Is butter a food—that is, does it nourish and strengthen the body?

Ans.—Butter is, strictly speaking, a food quite as much as meat. Indeed, there is more strength stored up in an ounce of butter than two ounces of the best lean meat; but butter will not furnish material to build up the tissues of the body as bread and meat do. A man would starve on a butter diet in a very short time. Butter, strictly speaking, is a fat useful in the body to support animal heat and generate force, as coal and wood do under the boiler, but of no use in building muscular and bone tissues.

GAS STOVES.

XXI. Are gas stoves as economical as cook stoves?

Ans.—If rightly made they are said to be the cheapest, cleanest and most economical for cooking of any in use. We think the best gas stoves are made in England, where the need of economy of fuel is felt more than here. Much time and thought have been spent there on the best way to save all the heat, and use it so it will do the most work.

STRENGTH OF TEA.

XXII. Should those who drink tea use the same amount of different kinds in making it?

Ans.—Some varieties of tea contain two or three times as much strength to a teaspoonful as others. Those who drink tea should always do so in great moderation, and it should never be taken between meals on an empty stomach; but only during the latter part, or after a meal. Much harm is done by tea-topers by swilling it down at all hours and in all quantities. Nervous people are more apt to abuse tea, and are more hurt by it than others.

INORDINATE PLEASURES.

XXIII. What harm can come from indulging in inordinate pleasures?

Ans.—The man who at great risk captures a wild beast may lose his life in the strife. It is so with excessive pleasures, the more in number they are and the greater they are the more are we a slave to them; and we pay our liberty for our brief delights if we purchase them.

MANY DISHES.

XXIV. Do you advise many dishes at one meal?

Ans.—Many dishes make many diseases.

VOLUPTUOUS MEN.

XXV. Are voluptuous men capable of being good citizens?

Ans.—A voluptuous person can neither be a good man, a good citizen or a good friend; at least so says Seneca in his essay on a happy life.

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MORNING EXERCISE.

XXVI. To the Editor.—Be kind enough to me of some gymnastic exercises that may used by sedentary persons in their rooms er they rise in the morning?

Ans.—Get one of Dr. Lewis's wands, a aight, round stick, three-fourths of an inch diameter and three and a half feet long, and rn a few of the exercises with this simple ce of apparatus and you will have the means thorough physical culture in your own room, small expense.

WINE FOR CHILDREN.

XXVII. Do you think a weakly child would injured by a glass or two of wine after din- r?

Ans.—The child's blood must not be in- med by such means. If ardent spirits are ed by any it should be by the aged, and not the young.

ADULTERATED MILK.

XXVIII. Do you think it morally wrong to lulterate milk; nearly every milkman does it, nd an honest one can hardly live?

Ans.—We should like to see every dishonest ilkman nailed by the ears to his pump till he ould promise to do better. Adulterated milk ills children by inches.

EATING PORK.

XXIX. A country friend writes: "It is now bout hog-killing time; everybody round here, ien, women and children, will almost live n pork for weeks to come—pork soups, pork ince pies, pork cake, and pork everything.)o you think pork is a nutritious article of ood, and ever suitable as an article of diet for hildren? Many here think it ridiculous to ay that pork is not healthy. Will you please ive us your ideas on this question?

Ans.—Our opinion about pork has been ex- ressed so often that it seems strange it is gain asked for. We will state briefly, the ob- ections to pork:

1. It is the source of nearly all the tape- orms found in the human body. Now and nen one comes from eating beef or mutton; ut this is a very rare occurrence.

2. It is the source of all the trichina, that o dreadfully affects human beings at times, hese never coming from other meat.

3. Hogs are almost always fattened so as to e actually diseased before killing.

4. It is generally believed that pork-eating s a common source of scrofula.

5 For sedentary people and for women it furnishes far too much of the fats for the best nutrition of the body.

6. And the swine, though he divide the hoof and be cloven-footed, yet he cheweth not the cud; he is unclean to you. Of their flesh shall ye not eat, and their carcass shall ye not touch."—*Leviticus* 11, vii and viii.

"And the swine, because it divideth the hoof yet cheweth not the cud, it is unclean unto you. Ye shall not eat of their flesh, nor touch their dead carcass."—*Deut.* 14, viii.

"I have spread out my hands all the day to a rebellious people which worketh in a way that is not good, after their own thoughts, which remain among the graves and lodge in the mountains, which eat swine's flesh and broth of abominable things is in their vessels." —*Isaiah* 65, ii and iv.

"They that sanctify themselves, etc., eating swine's flesh, and the abomination, and the mouse, shall be consumed together, saith the Lord."—*Isaiah* 66, xvii.

EGGS SOFT OR HARD BOILED.

XXX. Another lady writes: "I have two friends who sit near me at table, and they often dispute about eggs, one says soft boiled eggs are most wholesome and the other says hard boiled eggs are the healthiest. Please tell us if hard boiled eggs are ever healthy.

Ans.—Hard boiled eggs have always been considered more difficult of digestion than soft boiled ones. The reason is this: the white of an egg is almost pure albumen. Now albumen coagulates with heat, and is not so readily acted on by the gastric juice; so that much of it passes from the stomach undigested. Persons with vigorous digestion may manage a hard boiled egg so as to extract most of the nourishment from it, if it be well masticated and mixed with other food. The yelk of the egg, however, is not rendered worse by hard boiling. Eggs boiled just four minutes leave the white part in a partly floculent condition, more easily digested, and not so soft as to be offensive to any one. An egg may be cooked in water at a temperature of about 165° F. for fifteen minutes and leave the yelk well cooked, but the white will not be rendered tough and hard to digest. Though more troublesome, it is a good way to cook an egg to render it easy of digestion as well as palatable. Persons whose palates will not tolerate a soft boiled egg should have them poached and dropped on toast.

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

THE KING'S PICTURE.

There is in every human being, however ignoble, some hint of perfection; some one place, where (as we may fancy) the vail is thin which hides the divinity behind it.—*Confucian Classics.*

I.

The king from his council chamber
Came weary and sore of heart;
He called for Iliff the painter,
And spake to him thus apart:
"I am sickened of faces ignoble,
Hypocrites, cowards and knaves!
I shall shrink to their shrunken measure,
Chief slave in a realm of slaves!

II.

"Paint me a true man's picture,
Gracious, and wise and good,
Dowered with the strength of heroes,
And the beauty of womanhood.
It shall hang in my inmost chamber,
That, thither when I retire,
It may fill my soul with its grandeur,
And warm it with sacred fire."

III.

So the artist painted the picture,
And it hung in the palace hall;
Never a thing so goodly
Had garnished the stately wall.
The king with head uncovered
Gazed on it with wrapt delight,
Till it suddenly bore strange meaning
And baffled his questioning sight.

IV.

For the form was his supplest courtier's,
Perfect in every limb;
But the bearing was that of the henchmen,
Who filled the flagons for him.
The brow was a priest's who pondered
His parchments early and late,
The eye was a wandering minstrel's
Who sang at the palace gate.

V.

The lips, half sad and half mirthful,
With a flitting, tremulous grace,
Were the very lips of a woman
He had kissed in the market place;
But the smile that their curves transfigured,
As a rose with a shimmer of dew,
Was the smile of the wife who loved him,
Queen Ethelyn, good and true.

VI.

Then "Learn, O king!" said the artist,
"This truth that the picture tells,
How in every form of the human
Some hint of the Highest dwells;
How, scanning each living temple
For the place where the vail is thin,
We may gather, by beautiful glimpses,
The form of the god within."

Helen Barron Bostwick.

TRUE BLESSEDNESS.

It is not blessedness to know that thou thyself art blessed,
True joy was never yet by one, nor yet by two, possessed.

Nor to the many is it given, but only to the all;
The joy that leaves one heart unblessed would be for mine too small.

For when my spirit once was blessed, to know another grieved
Would take away the joy from all that I myself received.

Nor would I seek to blunt that pain, forgetting others' woe;
From knowledge, not from want of thought, true blessedness must grow.

For blessedness I find this earth of ours is then no place,
Where still the happiest man must meet his brother's grieving face.

And only in one thought I find the joy I never miss,
In faith to know all grief below will grow to final bliss.

And he who holds this faith will strive with firm and ardent soul,
And work out his own proper good in working for the whole.

God only sees this perfect good, the way to it is dim;
God only, then, is truly blest, man only blest in him.

Ruckert's Wisdom of the Brahmins.

THE LILY.

I had a little lily
That some one gave to me,
I put it in a goblet
And kept it tenderly.
For her who gave it me.

I cried, "this thing is perfect!"
It leaves were soft and fine,
So beautiful its color,
Its fragrance so divine,
So dainty every line.

When on the purest petal
I found one little spot:
"Alas, is nothing faultless!"
I washed it, I could not,
I could not cleanse the blot.

"But one thing shall be perfect!"
I whispered to my grief,
And took a little paint brush
And labored o'er that leaf
For hours, dumb and deaf.

At last the work was ended,
I waited while it dried,
When lo! as it was perfect
"Good-bye, good-bye!" it cried,
It wilted and it died.

George Houghton.

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EDITORIAL DEPARTMENT.

Herald of Health AND Journal of Physical Culture
Advocates A Higher Type of Manhood. Physical, Intellectual and Moral

NEW YORK, JANUARY, 1874.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

☞ THE PUBLISHERS *do not hold themselves as indorsers of every article which may appear in* THE HERALD. *They will allow the largest liberty of expression, believing that by so doing this magazine will prove to be more useful and acceptable to its patrons.*

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TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

THE NEW YEAR.—Bright with hope and fear again dawns the light of New Year's morn. We say bright with hope and cheer, though we know full well that these words may not be for all. There are those borne down with sorrow and grief, to whom no words would bring much brightness. There are those whose cares and burdens weigh upon them like a nightmare, who cannot be relieved by New Year's festivities. There are those steeped in vice, in sin and iniquity, whom nothing but regeneration will ever avail. There are, again, others to whom the birth of a new year is no more than the beginning of a day or a week. They take no note of time. What is it to them whether it is New Year's or July. They never stop to take life's bearings, and alter their course if it is not in the right direction. Still, to most of us the New Year means something. It means a new beginning of life. It means retrospect and prospect. As the old year dies, all that is bad ought to die with it; and with the birth of the new should come new thoughts, new desires, new ambitions, new resolutions.

But the time-honored salutation, "Wish you a happy New Year," does not make it so without effort on our part. And it seems to us one of the most needful things for all, in order to make the year a happy one, that we should come into the full possession of ourselves. When one is his own master it is quite a different thing from being a slave. Self-possession makes us do as well as talk. Let, then, every one on the first of the year possess himself. Let no wicked thought or deed mar the opening of the bright day. Let intemperance, that terrible vice, often born in New Year's festivities, be put away. Let a broad and loving religion spread over the land and dwell in the hearts of every one. Let good health habits be formed, and let none forget that he who would be truly happy must think his own lot the best, and so live with men as considering that God sees him, and so to speak to God as if men heard him.

THE ODD MINUTES.—The odd minutes of every day, if they could be put together, would sometimes make a half, often a full hour, and used to advantage in acquiring knowledge, would give time to greatly enrich the mind. Before newspapers, books and magazines were as plenty and as cheap as now, the waste of odd minutes must have been fearful. These have greatly aided in saving them; still there are lost in every day more moments than there need be. We suggest to the numerous readers

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of The Herald of Health that, for the year 1874, they try and put each odd moment to use, and further suggest that they be devoted to the study of physiology. One of the best books for use is Huxley's, especially the English edition. Such of our readers as have not got it can have one sent from our office for $1.50. It is compact in size, and might be carried in the pocket. The illustrations are new, and the text the best of any work we know for a cheap book.

The Value of Oatmeal. — *La France Médicale* informs us that M. Dujardin-Beaumetz, having obtained a large quantity of meal from Scotland, has been experimenting with it; young children being the subjects of the experiments. He observes that without speaking of the *bouillies* (porridge) and cakes which the Scotch prepare from the meal, it is employed by them as food for young children; although the form in which it is said to be so used appears somewhat novel to those who have been a good many years absent from "the land o' cakes," namely, a jelly, prepared by macerating a tablespoonful of the meal in a glass of water for twelve hours, then straining through a sieve, boiling till the whole assumes the consistence of jelly, and adding sugar or salt according to taste. According to analysis, 100 grammes of the meal contain, gr. 8.7 of water, 8.5 of fatty matters, 64 of starch, 12.2 of nitrogenous matters, 1.5 of mineral substances, and 7.6 of cellulose, dextrine and loss. Its nutritious value, therefore, as food for children, in regard to azotic or plastic elements, and such as are "respiratory," is analogous to human milk, or that of the cow. Besides these, it contains more iron than do most of the ordinary articles of food.

M. Beaumetz had fed four newly-born infants on the preparation just described, and in all of these with satisfactory results. He considers that in addition to its use as food, it acts efficiently against cholic and diarrhea. It enters into the composition of the syrup of Luther, which is said to be much used in Germany. M. Gillette, surgeon of the hospital Melun, has also given oatmeal "combined with cow's milk," to six children, and his experiments have proved how that food may be valuable in cases where the natural supply of milk is deficient. He adds that the nearer the infant approaches its first year the more does alimentation by oatmeal appear to be profitable.

Health of Students in Vassar College.—T. W. Higginson says: "Touching the question of health, just now so much agitated, I can only testify that the look of health among Vassar students seemed to my eye decidedly superior to that of city schools—as these again are apt to impress one as surpassing country schools in this respect. The opinion generally expressed by those girls whom I asked was that they were better in health there than at home. Yet there are certainly some distinct drawbacks to health at Vassar College, especially the sunless rooms in which many are obliged, by the structure of the building, to sleep. These seemed inevitable to the architect, I suppose, as a means of securing other things which are certainly very desirable—sunny and airy corridors, for instance, and a common parlor for every three bed-rooms. This last arrangement is most admirable, though the price thus paid for it is too high. If a high standard of health is preserved at Vassar College, it is in spite of very serious drawbacks in the structure of the buildings.

"Vassar College did nothing to convert me to the separation of sexes in education, nor to the system of aggregation in large buildings. I should think it would be a great strain upon the nervous system to live continuously under the same roof with such large numbers. But these are organic defects, if the are defects at all; and but few administrative defects met my eye. Yet—for one thing—it seems a pity to make attendance on daily prayers compulsory, especially for an institution which has had (as I am informed since my visit) both Roman Catholic and Jewish students. And in regard to the method of instruction, it seemed to me that too much stress was laid on recitations, and

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little on written examinations. This is, however, a common defect of our higher institutions for either sex. That written examinations are as available for girls as for boys is general experience of high schools, I should ; and perhaps girls, as a class, have more ency in writing, and hence adapt themselves this test more easily. I remember that Professor Mitchell spoke with surprise of the Harrd examination papers in astronomy (in the xaminations for women,") saying that they re such as she should put to her beginners, d that they would be an insult to trained pus. And Professor Backus told me that he had t to his juniors the Harvard junior examinan papers in Logic, without previous notice, d that all but one had been answered with- t difficulty. From what I saw of him and pupils I can easily believe this. I close th again expressing hearty respect for the ncerity and fidelity which seem to mark ery department of Vassar College."

BOARDING ONE'S SELF.—*To the Editor.*

ar Sir.—On page 275 of the December No. THE HERALD OF HEALTH appears an article the advantages of "boarding one's self," in e course of which the writer thereof mentions an objection, the escape of the smell of burnt ease in cooking. Writing, as I do, in the interest of hygienic as well as cheap living, allow to refer to a mode of cooking which I find be possessed of both these advantages, with- t the objection mentioned. This method, as does not contemplate the use of a higher deee of heat than that of boiling water (212°), es not include the process of frying, and nce avoids burnt grease, as well as every her unwholesome and unsavory attendant.

The utensil made use of is that known as Warren's Patent Cooker," (sold by Norton & ., No. 8 Astor Place, N. Y.) It is composed three sections of tin plate, the lower one of hich contains the water to be boiled, the mid- one being a receptacle for meat, and the p one a steamer for vegetables. A pipe conys the steam from the lower into the top section, leaving the meat chamber to be acted on by a dry heat of about 210° F. The smallest size of gas stove, to set upon a table, may be used. Steam is produced in twenty minutes; a beefsteak is cooked in thirty, and potatoes in thirty-five or forty minutes. It cooks equally well both fish and fowl, which it serves in the best possible condition for mastication and digestion, and is suitable also for soup. There is no odor, as the cooker condenses its own steam. Nine months' trial of this utensil, during which time I have acted as my own *chef de cuisine*, has fully convinced me of its hygienic and economic value. The principle of cooking which it illustrates I believe to be the correct one, whether its application be by Warren or any one else; and I have been led to mention the matter solely for the information of those who desire wholesome and cheap living. Of course, it does not bake "gems," or "johnny cakes;" but good Graham bread and crackers can be obtained fresh from any city bakery.

I reside in the heart of a busy and growing city; my breakfast consists of grains and fruits, costs about fifty cents per week; my dinner of mixed food (with the best in season) costing from two dollars to $2.50 weekly. I have been much improved in health and spirits by the adoption of these simple measures. G. W.

A LETTER.—The following is from the principal of a large and flourishing business college in Iowa: "After drinking tea and coffee for thirty years, I gave it up two years since, by advice of THE HERALD OF HEALTH, and have experienced a marked improvement in my feelings, digestion and general health ever since.

"What is your opinion of honey for colds? Nothing appears to give our children so much relief, when coughing and having sore throat, as several teaspoonfuls of nice strained honey; and it is very palatable to them.

W. H. MILLER."

HONEY is good. See article regarding its use for this purpose in THE HERALD for Feb. 1873.

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Bread Receipt.—Susan Everett, M. D., sends the following from a lady who attended one of her courses of lectures. The author states that twenty-five years ago she attended a course of lectures on hygiene, and the lessons she learned has enabled her to keep in good health ever since. She sent this receipt with a loaf of delicious brown bread to Mrs. Everett during her course of lectures at Perth Amboy, N. J. We regret that we are not permitted to give the lady's name:

"We make our own yeast, from hops of our own raising. The vine makes a delightful shade for the south end of our back porch, and from that vine we gather, the last of August, hops enough for our own use during the year, and also for some of our friends.

"To three pints of water put a handful of hops, and boil them half an hour; put into your yeast pot or jar six tablespoonfuls of flour and one teaspoonful of salt, set your jar near the kettle and dip the hop tea into the jar through a sieve, or colander. When you have strained enough to wet all the flour, stir it well, and then strain upon it the rest of the hop water. The mixture should be about the consistency of batter for griddle cakes. When it is *cool*, not *cold*, stir in a gill of good yeast, set it in a warm place; do not cover it close. When fermented, put it in a cool place and cover close.

"This is the yeast from which we set our white bread at evening. The next morning we take a good handful of the dough, put it in a large yellow bowl and add a teaspoonful of salt, a half cup of molasses, a pint of lukewarm water and enough Graham flour, making a dough softer than for white bread; set it to rise and bake. We do not *knead* this bread. This makes two loaves. Brown bread is not improved by sugar."

What to Do when a Child Swallows a Bullet.—An Aberdeen lad, with a very good appetite, swallowed a small leaden bullet. His friends were very much alarmed about it. The doctor was found, heard the dismal tale, and with as much unconcern as he would manifest in a case of common headache, wrote the following laconic note to the lad's father: "Don't alarm yourself. If after three weeks the bullet is not removed, give the boy a charge of powder. P. S.—Don't shoot the boy at anybody."

Sex in Education.—Dr. Clarke's new book, entitled "Sex in Education," has been sent us for notice. The little work has certainly proved a success in this, that it has excited a great deal of thought, more by far, we presume, than Dr. Clarke expected when he wrote it. The Woman's Journal for the past month has been full and running over with objections to it. It seems as if the work had stung all the women who read that paper to reply. Mr. T. W. Higginson also replies to it, in two articles of great fairness. We may as well state here that the work is an argument against the co-education of the sexes; and its reasons are that the author believes the experience of the past proves that women cannot endure the strain upon their bodies that young men can, and the consequence is that they break down in health, and thus the country is being filled with invalid women. We think the book is full of valuable suggestions that the advocates of the co-education of the sexes cannot afford to ignore, even if they do come from an opponent. The facts are, that the present system of education is a false one—not even well adapted to boys, and still less to girls; therefore it will have to be modified. Education in most of our colleges ignores the true nature of man. It shuts out of sight that those to be educated have bodies, and are of both sexes. Dr. Clarke seems to understand this fact, that colleges as now conducted are ill adapted to girls. It seems to us a pity he does not see that they can, and will, eventually, be changed, so that they will be adapted to both sexes; and that it will be perfectly safe to send girls to them as well as boys. Nay, it will be even safe to send feeble youth to them, with the certainty that health will be improved. We for one are glad the book has been written. It need not discourage the friends of women's right to

education with men. It will certainly nerve em to remove such obstacles as exist, and in e end we shall have a new system of educa-n, adapted, not to a male civilization or a fe-ale civilization, but to human wants and eds.

A VENTILATOR IN THE CHIMNEY.—Will HE HERALD. OF HEALTH please inform me hat it thinks of having a ventilator in the himney of a sleeping-room? I sleep always ith door open into a hall; but I have two ttle children in my room, which I heat with stove. Would it not conduce to our health have the ventilator?

Again, is inhaling tar of benefit to the lungs, they are weak? or rather, if one has a seated ough?

ANSWER.—Put in the ventilator by all means. egarding tar, it may be stated that it has no alue to those with weak lungs; indeed pure ir is much better.

OATMEAL MUSH.—To three quarts of oiling water add one level teaspoonful of salt nd one quart of *good* oatmeal, stirring while he latter is poured in slowly. Let it stand here it will boil gently, and stir it occasion-lly for ten minutes, or until the meal is evenly iffused through the water. Then cover close, nd place where it will barely simmer for one our. Do not stir it during that time. Serve arm, messing it as little as possible.

JULIA COLMAN.

IS THERE A HEALTHY WOMAN AMONG US?—The following letter is by a lady, and is ddressed to T. W. Higginson:

"All the time I was at Antioch College I ever heard of a young lady in the college re-uiring a physician's advice. Of the seven irls in my class I never remember an instance f one's being sick; they were always at reci-ations, and always had their lessons. I spent our years at Antioch—two at the theological chool, and I have been over ten years a settled astor, and I never yet was absent from an engagement, or suspended labor on account of sickness. When in Kansas I spoke every day from the 1st of July to the 5th of November, besides traveling to my appointments each day, some days giving two lectures and preaching Sundays, making in all two hundred and five speeches, averaging more than an hour in length, and came home just as well as I went; and this moment I am as well as ever, and could walk ten miles in a day with ease. To me such statements as Dr. Clarke's seem absurd, and contrary to everybody's experience.

"The ill health of the women of our time is not due to study, or regularity in study, it is due to the want of regularity, and want of aim and purpose, and want of discipline. If you should take the whole number of women in this country who have graduated from a regular college with men, and place them side by side with the same number of women who have not had that course of study, select them where you will, and the college graduates will be stronger in mind and body, able to endure more and work harder than the others. This I am sure of, as I am acquainted with most of the somewhat small number of women graduates, and I know something of other women, having belonged to various female seminaries at different times."

This is certainly a very remarkable case; but we believe there are more healthy women in the country than have reported. Our columns are open to them, and they may rest assured that if they do not wish their names to appear, they shall not; though we should think they would take an honest pride in letting the world know who they are, and where they live.

A MAN advertises for a competent person to undertake the sale of a new medicine, and adds that "it will prove highly lucrative to the undertaker."

THE pleasing and instructive poem entitled "The Golden Kiss," by Lydia M. Millard, which we publish in this number, was suggested by one of Hawthorne's stories.

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BEGGARS.—To the publishers of THE HERALD OF HEALTH.—A number of the friends of literature in this place have recently formed a literary and library club, over which I have the honor to preside. One of the objects of the club is to form a large library solely from contributions from the friends of literature, the club having no funds with which to purchase a library. The great poet, Longfellow, has presented the club with the last volume of his poems, and should you feel inclined to contribute a copy of your valuable journal of health, the club would most thankfully receive and appreciate it. Very respectfully, J. L. S.

REPLY.—We may be wrong, but we decline to contribute to the proposed library. It seems to us a very dishonorable way of getting books. They will not be prized half so much as if earned; besides, why should we give THE HERALD to a club formed of many members when we would not give it to a single individual? It costs much money to print it, and is worth all it costs. Not long ago we had a strong appeal from a woman in Michigan for a contribution of books for her library. She agreed to pay for them in advertising. We sent a few dollars' worth, and soon found out she was a swindler, getting books under false pretences, and selling them for what she could get. We do not know the writer of this letter, but we are sure his club had better earn money and buy a library rather than to beg it.

THE DANGER OF SEDATIVES.—The Popular Science Monthly gives this warning on the important matter of using sedatives for the little ones: "One of the great dangers attending the use of the various sedatives employed in the nursery, is that they tend to produce the opium habit. These quack medicines owe their soothing and quieting effects to the action of opium, and the infant is by them given a morbid appetite for narcotic stimulants. The offering for sale of such nostrums should be prohibited, as tending to the physical and moral deterioration of the race. In India mothers give to their infants sugar-pills containing opium, and the result is a languid, sensual race of hopeless debauchees. In the United States the poisonous dose is administered under another name; but the consequences will probably be the same."

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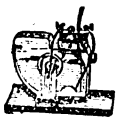
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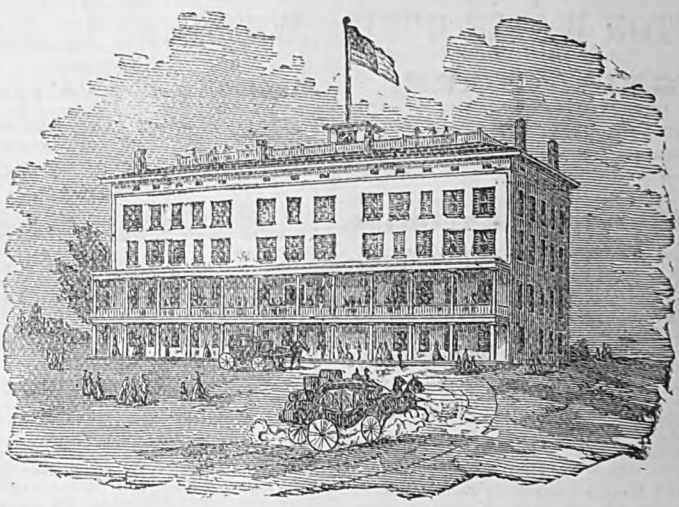
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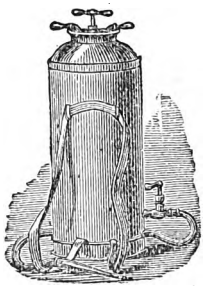
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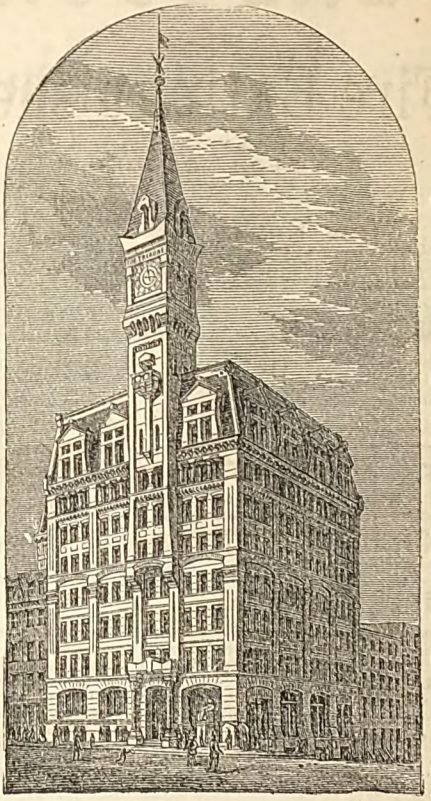
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THE HERALD OF HEALTH,

DEVOTED TO

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ESSAYS ON SANITARY AND SOCIAL SCIENCE.

(Number 3.)

Healing by Prayer.

BY REV. JOHN KELLY.

NOT very long ago a man of eminence in the scientific world stood sponsor to an anonymous challenge that the Christian pulpit should prove the power of prayer by the following test: It was suggested that a ward in some hospital should be set apart, that Christians might concentrate their prayers on the patients in it for a certain time, and that at the end of that time the death-rate in the ward should be compared with the death-rate in other wards not made the subjects of prayer. We must suppose that the author of this proposal deemed his test a fair and sufficient one, and believed that the result would prove or disprove the efficacy of prayer. The ignorance of the nature and conditions of real prayer displayed by such a challenge has often been exposed. It clearly proceeded from the spirit which the Jews in our Savior's time displayed, when they demanded a special sign—a demand which He alike refused and condemned. The learned professor, who in this nineteenth century has called on Christians to co-operate in producing this sign in order to satisfy his doubts, and the doubts of like-minded persons, might find reason to doubt his doubts as to the efficacy of prayer by reading the "Life of Dorothea Trüdel; or, The Prayer of Faith;" or visiting the Swiss village of Männedorf, on the Lake of Zurich, where Dorothea lived and died, and where the work she commenced is carried on to this hour. Were he to do either the one or the other he would discover, not a ward of a hospital only, but a whole hospital, where the only means used for healing the sick, who resort thither in crowds, are the Word of God and prayer, and where these are found sufficient in multitudes of cases; where, too, the imposition of hands enjoined by the Savior (Mark xvi. 18), and the anointing with oil, enjoined in the Epistle of James (v. 14, 15), are only used, when used, from a principle of obedience to the written word of God. Evidence enough, we think, is furnished by that institution that God does still hear prayer for the healing of the sick. The epi-

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leptic, the insane, the scrofulous, the consumptive, persons suffering from cancer and various other incurable diseases, have been and are continually being cured there.

Two years ago (in 1871) Miss Stapfer visited Männedorf, and has embodied the results of her investigations into the working of the institution, and her observations of the cures witnessed by herself, in a most interesting narrative. From her we get a complete insight into the inner life and mode of procedure in the institution. After a simple breakfast at seven in the morning, a bell summons every one to a chapel adjoining the Home, whither patients who are too weak to walk are carried. A hymn is sung. Letters from different places are read, requesting prayer or recording cures. Prayer is then offered for special cases at home and abroad. Appropriate portions of Scripture are read, expounded and applied in a most faithful and searching manner, and with the most blessed results. The service closes with singing. The lunatic patients who cannot attend the chapel, can benefit from the soothing influence of the music, even if disinclined to listen to the prayer and reading, as there are open gratings in the floors of their rooms over the ceiling of the chapel. The patients are also visited in their rooms, and dealt with individually according to necessity. The insane often offer great resistance; but prayer, patience and love overcome, and they listen to the Gospel. At one o'clock the patients, without distinction of class, assemble at dinner. "You find here," we are told, "side by side, refined ladies and gentlemen, artizans, farmers, silk weavers, scholars and clergymen, who live together in great harmony, acknowledging by this fact that worldly distinctions are out of place in a house where the Lord's presence is desired and powerfully manifested." The afternoon is employed by the inmates in rambling about the woods and hills to enjoy the lovely view of the lake, the snow-capped Alps and clear blue sky. At five there is a daily prayer meeting, at which the prayers offered, we are told, are truly heartrending; reminding one of apostolic times, when Christians pleaded for each other under like circumstances. A substantial meal is served before seven. The company breaks up into groups, free conversation follows, and the evening service, from nine to ten, which is frequented by many of the villagers, closes the day.

Such is the daily life of this wonderful hospital. In answer to prayer, health and vigor of body and soundness of mind are restored to many sufferers, and souls obtain peace. The head of the institution is of course incessantly engaged in his arduous duties. He has not only to attend to the numerous patients under his care, but he receives visits from many travelers who want advice and consolation, and at certain seasons he can find hardly a moment for meals, and very few hours for rest. His only breathing time is after the evening meal. There is one of the cases of cure which fell under Miss Stapfer's observation which we shall refer to, as it so happens that the present writer possesses further private information about it from a friend who met and had intercourse with the gentleman who was the subject of it, and as his account further illustrates the mode of dealing with patients at Männedorf. Miss Stapfer's account of the case is in the following words: "A young man from Neuchâtel, son of a highly esteemed family, had suffered from scrofulous disease, and could not walk in consequence of an abscess in his knee. He not only recovered perfect health at Männedorf, but his family have adopted the same blessed method of healing by prayer." The writer's friend met this young man at a German University, where he was studying at the time. He writes: "Mr. B. came to Erlangen at the close of the session from Tübingen. He was a tall, slender young man, apparently from two-and-twenty to four-and-twenty years of age, a competent theologian, but childlike in the simplicity of his faith. He walked with a slight halt, but was quite equal to three miles an hour. He had previously been afflicted with a scrofulous disease, and had an abscess above the knee. He was then unable to move from the spot. His parents being possessed of ample means, he was sent into different countries to consult the best medical men; but remained unaffected. At last they sent him to Männedorf, to Miss Trüdel's institution. He remained there three months, passed through the great spiritual change, I believe through means of Mr. Zeller's preaching chiefly, and was sent away healed in body, with the exception of the halt, which practically did not even impede his walking to any great extent. I asked him what treatment Miss Trüdel employed. He replied that she had visited him nearly every day during the three months, when she prayed with and for him on the basis of the promise, and sometimes she would lay her hand on the part above the knee. There was no other treatment employed. Mr. B. was a man of sound sense, and of high intelligence and culture. He belonged to Neuchâtel, and was a licentiate of

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the Church of that Canton when I met him."

In order better to understand the work, and do justice to the workers, we must know more fully the ground which they take up and the precise principles on which they act, and what claims they advance with respect to their work. They do not take up a position of hostility to the medical profession. Medical science and skill are not despised nor attacked, or actively discountenanced. Patients are free to employ these if they please. The simple principle is maintained, that the prayer of faith is sufficient. No other means are employed by the conductors. They employ prayer instead of medicine, "as a direct and simpler way." Cures are not guaranteed. Prayer may fail. There is no attempt to introduce the human will into the province of the Divine. Immediate cure is not expected—a year may sometimes elapse before the insane are cured. No special gift is claimed. "It is faith and trust in the Lord's power. He works according to His good pleasure; we are but redeemed sinners, who try to follow His precept, Love thy neighbor as thyself,' say those who carry on the work. No monopoly is claimed. "People need not come to Männedorf," say they, "in order to get well in body and mind. Let them unreservedly believe God's holy promises, and they will experience the same blessed results in any part of the world." It is a purely benevolent and charitable institution. None are excluded because they are poor. Those who are unable to pay are freely received. The poor are accommodated in the establishment; the rich find accommodation for themselves in the village. All get their meals together. Those who can pay a little toward their maintenance do so; but many remain for months and give nothing. The finances are often low, but help always comes in the right time. Publicity is neither desired nor courted. Such publicity as the work has gained has resulted from the impossibility of hiding it—it has been forced upon it. The spiritual cure of the patients is the chief aim of those engaged in the work. Their first and great concern is the salvation of the soul, the deliverance of the patients from their besetting sins, from the power of Satan and the manifold spiritual diseases by which they are afflicted. The cure of the body is a secondary consideration. Patients go away sometimes cured in body without having derived spiritual benefit; but the bodily one is often retarded or promoted by the spiritual condition of the patients—concealment of sin, deception, impenitence, unbelief, often retard the bodily or mental cure which takes place when these are removed. The contrast between the spirit and aims, the claims and principles of this work and those of persons who pretend to have discovered and possess sovereign remedies for all diseases, or infallible and speedy remedies for particular complaints which are generally regarded as incurable, must strike the most superficial reader. The two have been compared to the disparagement of the Männedorf work, but with great injustice.

A brief sketch of the origin and progress of the institution will show that Miss Trudel was led to devote herself to this work by no enthusiasm or seeking of her own, but by the leadings of Providence, which left no other course open to her. She was a humble woman, of singular simplicity and beauty of Christian character, whose one book was the Bible. She was a worker in flowers, in which business she seems to have assisted her sister's son. Four of the workpeople employed by them once fell ill, and they sent for the doctors:

"It was remarked," she herself wrote, "that they got worse after taking the medicine, until at last the necessity became so pressing that I went as a worm to the Lord and laid our distress before Him. I told Him how willingly I would send for an elder, as commanded in James v.; but as there was not one, I must go to my sick ones in the faith of the Canaanitish woman, and without trusting to any virtue of my hand I would lay it upon them. I did so, and by the Lord's blessing all four recovered."

From another account we learn that she had been a diligent and unselfish nurse, and that her anxiety for her people led her to earnest prayer and careful consideration of the Scriptures. The passage from James v. flashed upon her like a sudden light:

"If medical skill was unavailing, was there not prayer? And could not the same Lord who chose to heal through medicines also heal without them? Was He necessarily restricted to one means? There was a time when His healing power went forth directly; might it not be put forth still? The doctors were at fault; but was not faith in God, perhaps, more at fault? Agitated by these questions, she sought help in prayer; and then, kneeling by the bedsides of these sick people she prayed for them. They recovered; and the thought that had first startled her became the settled conviction of her life."

When her prayer was answered "most powerfully," she says, "did the sin of disobeying God's word then strike me, and most vividly

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did the simple life of faith, the carrying out just what God orders, stand before me!" This event happened in the year 1851, when she was over forty years of age. The fundamental principle of her life-work she then embraced, and in visiting the sick, during the prevalence of an epidemic in the village, she acted upon it with success; but until necessitated by the number and urgency of the cases in which her help was sought, she followed her trade as a flower-maker, believing that this was her proper calling, and what God had provided for her. Humanity to the houseless sick who were brought to her constrained her to receive them into her house; and to the one house another and yet another had to be added. Patients came to her from France, Germany, and England as well. Thus there came to be a hospital at last. The work continued comparatively unnoticed till 1856, when the opposition which was raised against it brought it in the most prominent manner before the public. A medical man in Zurich began to entertain scruples about the propriety of a hospital without a physician. An agitation was commenced against it. The government ordered its suppression. This order was obeyed; but no sooner was the house emptied than it filled again. When, after due consideration, the order was at length disobeyed, Dorothea was fined. An appeal was taken from court to court, until at last the adverse decisions in the lower courts were reversed, in the month of November, 1861, and the work permitted to proceed. Hundreds of testimonials were produced in her favor from the most eminent men in Switzerland and Germany. Among the rest, Professor Tholuck and Prelate Kapff sifted her work, and bore testimony to her character. Authenticated cases of cure were brought forward to the number of hundreds during the trial. Her counsel, in what has been described as "a splendid and powerful speech," showed the groundlessness of the case of her opponents, and the perfect legality of her proceedings. The medical laws were designed to prevent quackery, and not to prevent the physical benefits which flow from prayer. Her establishment, her counsel showed, had never been examined by her prosecutors. Thus in the eyes of the world, and in the most signal manner possible, Miss Trüdel was vindicated. Before her death, which took place in September 1862, she transferred her establishment to Samuel Zeller, the son of the famous founder of the Reformatory at Beuggen, and brother-in-law of Bishop Gobat, of Jerusalem, who had been her coadjutor in it for some time previously, and who carries on the work successfully at the present time.

A similar work has been, and still is, carried on in Germany, quite independently, by a Lutheran clergyman, Pastor Blumhardt, formerly of Möttlingen, in the heart of the Black Forest. Like Dorothea Trüdel he was led to take up the work by providential circumstances, which left him no choice. Like her, too, he encountered bitter opposition from a Christian physician. The ecclesiastical authorities, to whom the appeal was taken in the case, were fully acquainted with his work beforehand, and had not interfered.

It now only remains to glance briefly at a few of the explanations of the facts which have been offered by those who hesitate to accept, or who altogether deny, their supernatural character. The facts of the cures are, as far as we know, admitted by all who are competently acquainted with the evidence. They are received without question by many of the most distinguished men in the German universities; but the connection between the cures and prayers, in the way in which the heads of these institutions believe them to be connected, is not so universally admitted. Various natural explanations are suggested. The cures are by some ascribed to the effect of climate, and to the soothing, restful, heavenly atmosphere of the institution. No one will deny the beneficial effect of such causes on persons affected by incurable maladies, mental or bodily. But if these causes are sufficient to produce cures such as take place at Männedorf and Bad Boll, why do not the same conditions, which undoubtedly exist elsewhere, produce the same results in equally bad cases, without special prayer for cure, and without any belief in the power of prayer to heal the sick? The key to the explanation has also been sought in the class of diseases that have been cured. It has been said that they are chronic cases. We should think that this was rather an argument for than against the explanation controverted As a matter of fact, however, the method has been as successful in acute as in chronic diseases. Fever has been cured, as well as scrofula, cancer, and insanity. Mesmerism, again, has been alleged to be the cause of the cures. This charge caused Miss Trüdel much disturbance of mind. But cures were effected in cases where she had no opportunity of placing herself in mesmeric relation to the patients, simply in answer to prayer; and in one case especially, where she expressly abstained from visiting the

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patient, while she prayed that the blessing might be withheld if mesmeric influence were at work. By others it has been suggested that the explanation may be found in the as yet comparatively unexplored region of the connection between mind and body. Doubtless discoveries may yet be made in that direction; but it may fairly be doubted whether any adequate natural explanation of the facts with which we are dealing will be found in that direction. Deception and delusion are out of the question, and cannot be entertained by the candid investigator as a true explanation. The conclusion seems to us to be irresistible, that the cures are effected by the power of God, in answer to the prayer of faith offered in obedience to apostolic precept, and in accordance with primitive Christian practice.

An attempt is made to invalidate this conclusion by the assertion that the age of miracles is past. This is begging the question. There is no ground from Scripture to limit the faith of miracles to the apostolic or immediately succeeding ages. As strong a case as ever, we think, could be made out for the necessity of them from the state of the heathen world, and even of Christendom itself, arguing on *à priori* grounds. But granting, for the sake of argument, that miracles for evidential purposes were designed to cease soon after the planting of the Christian Church by the apostles, the healing of the sick by the elders of the church by means of prayer and anointing with oil, was not for evidential purposes. It was manifestly intended, in the first instance, for the benefit of the church. Whether miracles have ever ceased in the church, whether they occur in our own day, are questions purely of evidence. Bushnell, in his "Nature and the Supernatural," maintains that they have never ceased, and adduces several cases to show that the faith of healing is still possessed by many, and is much more common than is supposed even by those who do not totally reject the possibility of the occurrence of such things in modern times. But it has been said that such things existed only as long as apostolic power lasted in the church, and it is assumed that apostolic power no longer exists. If by apostolic power be meant power received immediately from the hands of the apostles, of course such power cannot exist, since there are no apostles now, and the nature of their office did not admit of their having successors in it. But if by "apostolic power" be meant the plentitude of spiritual gifts, which existed in the primitive church in the apostles' days, which were bestowed by the Spirit who distributes to every man severally as He will, but which the apostles undoubtedly possessed in a special degree and could communicate to others, it is an unwarranted assumption to suppose that such power was designed to cease in the church; we believe it to be contrary to fact to say that all traces of such power in what we commonly understand as supernatural manifestations has ceased, and the fact that it survived here and there in particular forms, only proves that much of the primitive glory has passed away, and that fragmentary traces of it alone survive to show us in present experience what it was at the beginning.

Again, it has been alleged as an objection against the Männedorf and other cures being healed by prayer, that such gifts would prove the section of the church with which the workers are connected to be the true church, tacitly assuming that such a visible token of the true church is not to be expected. But why should such manifestations of the power of prayer be viewed in this light, any more than answers to prayer for the revival of God's work, or for the supply of temporal need, of which very signal instances might be adduced in the cases of persons connected with the different branches of the Church of Christ? As a matter of fact, Miss Trüdel does not seem to have been connected with any section of the church, so far as can be gathered from her memoir. Pastor Blumhardt was a Lutheran; and the persons referred to by Dr. Bushnell were probably connected with different churches.

It has been objected that Miss Trüdel's work is not what is described in James v. 14, 15; it was not done by elders. It will be remembered that she showed her willingness to comply to the very letter with the injunction in question, in this as in other respects, but there were no elders to send for. Are we to suppose that the blessing is so tied to an order of men that God will withhold it when the faith in Himself is present, and when non-compliance with the prescribed method is simply impossible, because the order does not exist in the place? Faith in the power and promise of God and the spirit of obedience are surely the essential things, and to regard an office as the exclusive channel of the blessing seems to savor of sacerdotalism. But the oil, it is said, was designed to stand for medical means, and cures are not to be expected without the use of medical skill. On this supposition oil must have been regarded as a sovereign remedy for all kinds of sickness, for there is no restriction for any particular

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kind in the passage; and the sacred writer must be held to have countenanced the idea either that the elders should be all medical men, or that the doctor and elders should visit the sick together. Whatever medicinal properties oil may possess, whatever beneficial effects it may produce when applied to the ailing part of the body, the use enjoined by St. James is clearly symbolical. It is presumption, however, we are told, to dispense with medical skill and experience. It would be so if we were as certain that given medicines would cure given diseases, as that bread and meat will nourish a healthy person. The fact is that there are exceedingly few certain remedies for any disease whatever. None are more ready to admit how little medical skill can do in most cases than the best qualified practitioners. They will tell you that they often get credit where none is due to them, and discredit where credit is due. So long as men of the highest eminence in the medical profession speak of the healing art and of those who practice it as they do, simple-minded Christians like Miss Trudel and Blumhardt must be acquitted of presumption in giving them the go-by, and others of credulity in believing that their cures are wrought by the prayer of faith in accordance with the express injunction and promise of God's word. In an article on the "Revolutions of Medicines," contained in his "Discussions on Philosophy," Sir William Hamilton gives some valuable information and quotations bearing on this matter. He says:

"In Hoffman's Dissertation 'On the Seven Rules of Health,' the last and most important of these is, 'Fly the doctors and the doctors' drugs as you wish to be well;' and this precept of that great physician is inculcated by the most successful practitioners (or non-practitioners) of ancient and modern times. Celsus well expresses it: '*Optima medicina est non uti medicina;*' and I have heard a most eminent physician candidly confess, 'That the best practice was that which did nothing; the next best that which did little.' In truth medicine, in the hands by which it is vulgarly dispensed, is a curse to humanity rather than a blessing; and the most intelligent authorities of the profession, from Hippocrates downwards, agree that on an average their science is in its practice a nuisance, and 'throw physic to the dogs.' The Solidists, indeed, practically admit that the Humorists were homicides by wholesale for above fifteen centuries; while homœopathy and the Water Cure are recoils against the murderous Polypharmacy of the Solidists themselves. Priesnitz, I see, declares the most and the worst afflictions which flesh is not heir to, but which water has to remedy, are the doctor and the drugs.' . . . Has the practice of medicine made a single step since Hippocrates?"

Again, he says:

"The highest authorities in medical science before, but especially since, the time of Hoffman (confessedly the most illustrious of modern physicians), have been the greatest sceptics in regard to the remedial efficacy of medicines; and the most successful physicians have always been those who guarded the most efficiently against the 'heroic practice,' against the lethal confidence of their brethren. The world, however, is now beginning to awake; and systems of medicine, which all virtually eschew drugs, are now everywhere established, or establishing. Even a consultation of physicians, though here we might expect that the rashness and ignorance of individuals would be checked, has often proved signally, as it has long been proverbially, fatal."

Such being the testimony of the greatest luminaries of the profession, we may fairly retort the charge of presumption on those who laugh at such persons as Dorothea Trudel and Pastor Blumhardt for dispensing with medical skill altogether in the treatment of disease, and relying exclusively on the word and power of the living God for its cure.

The Wastes of Life.

BY W. T. CLARKE.

ONE effect of a panic is to pinch maxims of prudence into the public conscience. It compels a large class of people to curtail their expenditures, and obliges all to think of the economies they slight at other times. It gives penurious people a coveted excuse for stinginess, and leads even spendthrifts to discountenance waste. It is hard for people to see that if there is any time when those who have should generously spend, it is when trade is paralyzed

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and public confidence is shaken, and laborers have nothing to do, and the poor are suffering for bread.

At a time when every one feels something of the pinch in financial affairs, it may be well to reflect on the Wastes of Human Life. Condemnations of extravagance are the order of the day. Everybody admits the enormity of the sin in general, but nobody pleads guilty to any specific accusation. Who shall draw the line between economy and extravagance? Where exactly does prudence end and waste begin? There are no people in the world who spend so much money as Americans; but no other people have so much to spend; no other earn so much, and take so much pride and pleasure in earning it. The average of intelligence and morality is higher here than anywhere else on the globe. The more civilized a people are the more they want and the more they spend. There are, doubtless, numerous instances of extravagance and wastefulness in in all our cities. It were easy to find scores of individuals living in reckless and ruinous ways, throwing away money for objects that make them neither wiser, healthier, or happier. Hundreds of our people get money easily, and spend it with thoughtless prodigality on things and pleasures that neither increase their comfort, culture, or joy. All such expenditure is waste, and ought to be condemned in times of plenty, as well as in times of poverty and depression. But this is because such expenditure profits nothing; not because it exceeds a given amount. A man who spends five hundred dollars a year may be more extravagant than he who spends five thousand. The waste is not in the sum expended but in the manner of the expenditure, and the inadequate return it brings. It is amusing to read of the small sums upon which people have managed to exist. One man reports that he lived three months on food that cost eight cents a day. Another finds fifteen cents ample for healthy physical support. Another demonstrates that a family of six can live in this city on five hundred dollars a year, exclusive of rent, and spend a month in the country if they choose. A Parisian family lives in elegance on two-thirds of the sum a New York family spends for showy discomfort and shabby gentility. Hindoos thrive on little else than rice. A Chinese village would feast for a week on what would suffice for an American family entertainment. Very likely. And all the clothes of one of the negro tribes described by Sir Samuel Baker, were not worth so much as those worn by a single New York belle to a reception. A Fejee family would subsist on food we would not throw to a civilized dog. Shall we, therefore, hold to the superiority of the Fantails and emulate the virtues of New Zelanders?

The question is not how cheaply we can manage to keep soul and body together, but how we can bring both body and soul to the highest condition of vitality and power. To live is something more than to exist. How can we live most and best? How can we feed intellect and affection, conscience, sympathy, imagination, reverence, as well as the physical system? All pinching and restricting of diet is injurious in the long run. The bean man, the bran bread man, the one-meal-a-day man, the man who goes mousing about the world intent only on cheapness, never makes the scale of power kick the beam. He wastes more than he saves. He checks an income instead of stopping an outgo. The men who make the most ado over the petty prudences of life, and perpetually obtrude their parsimonious practices on public notice, never amount to anything, or do anything of account. Man wants all he can use, assimilate, organize, reproduce. The things that strengthen and beautify his essential manhood, that enrich his sentiments and refine his sensibilities, that ennoble his intellect and enlarge the scope of his being and the horizon of his possibilities, belong to him of right, as the crown and purple belong to royalty. Every man ought to aspire and labor to live generously, and have a comfortable and tasteful home, and surround himself and his family with everything that tends to increase health and happiness, and create an atmosphere of intelligence and refinement. Beauty, elegance, art, society, music are our birthright. It is not waste to spend what one has for things that foster a noble pride, heighten self-respect, beautify the body and cultivate the mind. It is a true economy that spends something for books and pictures, for occasional glimpses of nature and the entertainment of the stage. The charities and humanities are not luxuries, that the poorest man on earth should deny himself of them. The loving, trustful, adoring sympathy that forgets its own wants and meager resources, and breaks the costliest thing it has on the head of the one beloved, is not a recklessness to be censured, but a devotion to be commended for its divine nobility. Saving may be ant-like and beaver-like, but sacrifice is God-like. True prudence consists in letting nothing slip through the fingers without contributing something to comfort, culture, or the

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public benefit. It buys only what really helps. It stops all mere leakages. It refuses to throw away on trinkets what might be husbanded to buy things really beautiful and enriching. There is no use of a man picking his own pocket or turning defaulter in his own bank. The wise man saves at the bottom in order to spend at the top. He saves on the table to spend on art and literature. He pinches the tailor and vintor that he may patronize the painter and the public conveyance. He spends upward, on things that enrich and beautify, that expand the heart and dignify human nature, and lift the soul heavenward on a wave of sympathy, or in an outreach of adoration; never downward on toys and toggery and dissipation. The money that goes into culture and character, friendship, benificence and worship is not wasted, but invested where it will yield a hundred per cent. of power and joy. It is waste to squander on the less what would procure the greater. It is worse than extravagance to pamper the animal and starve the angel.

TRUE ECONOMY OF LIFE.

The true economy of human life looks at ends rather than incidents, and adjusts expenditures to a moral scale of values. The real wastes of life are not those men prate about most volubly and condemn in censorious tones. De Quincy pictures a woman sailing over the water, but awaking out of sleep to find her necklace untied and one end hanging in the stream, while pearl after pearl drops from the string beyond her reach; while she clutches at one just falling another drops beyond recovery. Our days drop one after another from our too careless holding, like pearls from a string, as we sail the sea of life. Prudence requires a wise husbanding of time to see that none of these golden coins struck in the mint of God's own eternity are spent for nothing. The waste of time is a more serious loss than the extravagances against which there is such loud acclaim. Here are thousands who do nothing but lounge and carouse from morning till midnight—the drones in the human hive, who consume and waste the honey honest workers wear themselves out in making, and insult the day by their dissipation and debauch. Here are ten thousand idle, frivolous creatures, who do nothing but consume and wear and waste what honest hands accumulate, and entice others to lives as useless and worthless as their own. Were every man and woman honest toilers, all would have an abundance of everything and half of every day for recreation and culture. The expenditure of a few dollars for articles of taste and vertu is a small matter in comparison with the waste of months and years by thousands who have had every advantage society could offer, and exact every privilege it affords as a right.

REAL AND APPARENT WASTE.

But all is not waste that seems such. The time spent in the pastimes of childhood and youth is funded in health and strength, and a whole exchecquer of delightful memories, on which the man or woman can draw at will. The time spent in school and for cultivation, is a splendid investment for all after years. The time taken out of business for needful rest and recreation is not wasted, but saved. The danger is not that we shall rust out, but that we shall wear out and break down before our time. The men who live on the jump, in a perpetual rush and whirl, as though an instant were an eternity and their fate depended on its use, are more wasteful of time than those who move to a slower measure and in more leisurely ways. The man who bolts his dinner as though he had a set of mill-stones in his stomach to grind the food he does not stop to chew, may save five minutes in a day; but he may lose hours of sleep and months in debility, and carry a shattered constitution to a premature grave. A distinguished physician has said it would be a wise economy for every business man to spend one year in ten in travel, or comparative leisure; for what he would lose in that way would be more than added, with interest, to the length of life. Every literary man knows that the half days wasted on the beach or in the woods, in lounging about the shops, or out in the golden sunlight that covers the hills, often prove the most profitable periods of his life. The bankrupt millionaire touched a great truth when he said "what he had was swept away, and what he saved was lost; but what he had given away was saved." The days wisely wasted in recreation and beautiful fellowship and helpful charities, are most grandly kept.

WASTE LABOR.

Life is quite as often wasted in doing as in not doing. There is a great deal of laborious loafing in this world. Idleness often wears the mask of industry. The spending of time, strength and talents on objects which, when completed, make no one wiser or happier or better, nor contribute to human progress or welfare, are more popular and consuming modes of waste than any other.

One day, when I was a clerk, I spent several

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ours in putting things in order, and making
ie old store look neat and respectable. Then
sat down, expecting to be commended by my
nployer when he came in. When he came,
e took in the situation at a glance, and ex-
aimed, "What are you sitting there for?
ill them beans and pick them up! Anything
at looks like business!" It sometimes seems
at one-third of the work of the world is merely
illing beans and picking them up, because it
oks like business. A successful physician,
hen asked how he managed to get so large a
actice in so short a time, replied, "By kill-
g a horse. I had a half dozen patients in as
any towns, and drove from one to the other
fast as possible. It gave the idea of an im-
ense practice, and in three months I had all
e patients I could attend." However such
ever artifices may serve the purposes of indi-
duals, there is something paltry and con-
mptible in spending a third or a half of a
fetime in doing what is of no use to anybody.
Salem pauper wanted Billy Gray, the rich
an of Massachusetts in his time, to tell him
hy he did not get rich, too. "Because you
e lazy," said the millionaire. "I am not,"
id the pauper. "Throw yonder pile of stones
ver the fence, and I will give you a dollar,"
id Mr. Gray. The work was done before night,
nd when the pauper took his pay he asked
hat he should do next. "Throw those stones
ck again," said Mr. Gray, and I will give
ou another dollar." Back flew the stones fast-
than before, and the pauper asked the mill-
naire what next. "Throw those stones over
ie fence," replied the merchant. "Do you
ink me a fool?" exclaimed the pauper; "you
aven't money enough to hire me to handle
em stones again." His self-respect was hurt,
s manhood was insulted, by being made to
el that he was merely an automaton, run for
ie sake of proving that it would run. But
ow much of the work we are expected, if not
quired, to do, is as idle as throwing stones
ck and forth over a fence! How much of
ir industry is idleness under false pretences?
ow much of what we call business is mere
zz-iness? Much of what is called ornament
waste, because it does not adorn anything.
he real objection to most of the fashions that
nsume so much of woman's life, is that they
e expensive without being elegant; they ab-
rb time, money and thought without yielding
i equivalent in comfort or beauty. A really
egant dress is a thing to admire, and be proud
; but it is a sheer waste of time and money to
it them into clothes that are not needed, orna-
ments that are not beautiful, and articles that encumber and embarrass the possessor, merely to advertise the fact that she has the money to spend and is foolish enough to spend it in such ways.

We should gain in the long run by confronting every industry or enterprise we are asked to engage in with the question: "What good?" Louis XVI. was said to know more useless things than other man in Europe in his day. The world has never wanted for learned weaklings. One reason that so many cultivated men make no mark in the world and have no influence in its affairs, is that they have spent themselves in picking up information of no more real value than the shells and bits of crockery children amuse themselves by gathering. A great deal of what enters into college education is elegant rubbish, which every student who amounts to anything hastens to forget. The acquisition of even impracticable knowledge may be an intellectual gymnastic that makes the mind vigorous and acute. But would not the same amount of discipline be acquired in learning what is of use? Three hundred years ago there was nothing of account to study but the classics; and to master the literature of Greece and Rome was to rise to the high-water mark of civilization and culture. But the discoveries of modern science and art, and the complicate needs of modern life, have given another answer to the question: "What knowledge is of most worth?" A true education consists in the acquisition of vital and practical knowledge, and in comparison with this a vast deal of the costly scholarship of Christendom is but chaff to wheat. Much of our popular reading is a sheer waste of time on what neither refreshes nor instructs. It is not a narrow standard of utilitarianism that we should apply to intellectual processes and works, but an estimate of values broad as human life and the needs and possibilities of man. What will most increase happiness and power? What will best enrich the mind, discipline the judgment, deepen and refine the sentiments, or train imagination to its great and holy office? Take the widest possible view of human needs, and how much of the intellectual life of the world runs to waste in the study of subjects of no human use, if not forever beyond solution? How many of the questions learned men have spent years in investigating and discussing with voice and pen, are utterly empty of practical significance? How much of the thought and scholarship spent on theological dogmas and opinions are thrown away, so far as any prac-

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tical results are concerned, as completely as water poured through a sieve upon the ground? Think what our world would become in a single generation were all the interest and intellectual force now drained off for useless objects or suffered to run to waste, wisely directed to the culture and happiness and advancement of mankind! It is no impossible or even painful concentration of powers on moral objects that is proposed. Because Grote mastered Aristotle while waiting in committee-rooms for the other members to come in, it does not follow that every man should go armed with a book like a pocket pistol, and thrust it in the face of his companions on all occasions. The great thing is to stop the leakages. It is the main chance that must be looked after always, and for which all incidents must be sacrificed. The stream carries the drops. It is the central purpose and direction of energy that tell in the long run. The locks of hay that escape the rake fertilize the ground for another crop, and the wheat that falls in the stubble feeds the birds that protect the next year's harvest from the worms.

MAN A RESERVOIR OF POWER.

Man is a reservoir of power, fed from visible and invisible sources. He has a certain quantity of force to expend, in whatever way he chooses; and though he may increase the amount a third or a half by wise care, still, at the best, his power is limited, and his success depends less on expedients to increase energy than on its wise expenditure. The science of economy consists in knowing how to make a dollar buy a dollar's worth. To keep down friction is to increase power. The tactics of Napoleon was merely an economizing of force, by bringing it to bear on a point where it would tell. Artemus Ward's saying of Washington, that he never "slopped over," hints at the secret of ten thousand failures. All fussing and fretting spill the costly spirits life is made of. Every bad habit drains off so much force. Every mean indulgence is a spigot letting the wine of life run to waste. A cherished dislike, a settled hatred, a spirit of anger or revenge, draw continually from the interior cisterns of our being, leaving only dregs for nobler ends. Pope wrote so little because he quarreled so much. The example of Coleridge shows that nursing may absorb more power than is acquired for noble achievements. An imagination that turns toward the darkness, and conjures up images of evil and shapes of despair, drinks the very life-blood of the heart and conscience. All the small vices are leakages of force, and every large one is a waste-gate draining the fountain head. The waste of affection on things frivolous and foolish, in a world full of beauty and goodness that solicit admiration and love, is far more criminal than the expenditure of money for what does not profit. To magnify trifles and dignify technicalities by dwelling on them to the neglect of truth, and make a crotchet a matter of conscience, are a wicked squandering of the moral power. A spendthrift intellect is a thousand times more to be deplored and guarded against than the flinging away of gold. The trying to worship what is not worshipful, pouring out the costliest and most vital properties of the soul to the idols of tradition and superstition, while the divine ideals of truth and beauty entreat in vain and are waved away, makes all other waste seem pitiable. The true economy looks in as well as up, and saves the spirit at whatever sacrifice of other things.

Foul Air.

BY REV. CHARLES H. BRIGHAM.

THE seer of the Apocalypse saw in his vision the seventh angel, the last and the strongest, pouring out upon the *air* his vial of plague and wrath. And the same angel, if we may trust the seers of to-day, is pouring plagues into the air of the halls and homes of civilized nations. In spite of all the demonstrations of disease and wretchedness from this cause, in spite of all the remedies suggested, the complaint abides, and everywhere a wail is heard that men draw in poison with their vital breath. The wise and the wealthy, who can get the best things, feel that this bad air is the curse of all their convenience and contrivance. In fact, they cannot go from this spirit, or flee from this presence. Money will not buy exemption, journeying will not lift off the burden. It is the plague at home and the plague abroad, in

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field as well as at the fireside. That hange of air" which the medical men com- nd, is only a choice of evils and no posi- e gain. If the Pacific breezes soothe the igs which the Atlantic gales have tired and n, they stir the dust of the long drought, to ge and fester in the wound. If the dry rgen of Colorado heals, it irritates, too. eet Florida, with its orange perfumes, is nd to be insidiously damp; its balm is the m of the swamp, which is a harbinger of tilence. Minnesota may arrest the growth the ulcer, but can the air be called whole- ne where men freeze to death in the month April? Where shall we go to find the air Paradise, the air in which there is no dan- lurking, which is clean and sweet, and ckening and invigorating, lodging no seed malady in those who breathe it; which is ther too damp nor too dry, too close nor too acing, too sluggish nor too electric; which ther invites to slumber nor impels to mad- ss; which bears the chemical tests, and im- ves with the experience of breathing it; the in which atmospheric changes, from cold hot, from the west wind to the east, from ht to darkness, bring no discomfort; the air ich is as good in the night as it is in the y, as good in the winter as in the summer, good in the storm as it is in the sunshine; air, in a word, which makes of earth a aven?

Despair of finding the air which is up to emist's proof, even under the open sky, and th the breezes blowing, leads not a few to a lid and cynic resignation, which accepts bad everywhere as an inevitable fate, that can- t be changed by skill or effort. The failure so many schemes of ventilation, or their lf success, which is not much better than lure, has left in many souls absolute skep- ism as to the possibility of improving the air ich we are compelled to breathe. If men are lly poisoned who live in the open air, is it ch worse to be poisoned more speedily and roughly in the bad air of close houses? If patent methods only bring bad air in to re the place of bad air driven out, is it worth ile to scar the walls of houses and churches th all these holes and gratings? If we can- t get relief from pneumatical invention, why t drop the futile attempt to manipulate this rit of the air, and trust to good food and rp exercise to offset the plague of the breath? all the architects spoil their lines of beauty experiments which only half remedy the evil? Shall we accommodate the rats in our doubtful provision for more abundant air?

Foul air is at present the evil genius of our civilization, the *bête noire*, which pursues us wherever we go. We find it in every house of God and in all the houses of men. Eminent in this offence are the sanctuaries, even with all their luxurious appliances for easy prayer. The soft stool of kneeling, and the rest for the elbow, do not save the brain from the drowsy influence of superfluous carbon. The tabernacles of the Lord are not amiable in compelling the listeners in their heaviness of head to lose so much of the solid argument or the fervent appeal of the Rabbi, whose head, too, aches as he exhorts. It is better, indeed, to be a doorkeeper in the house of the Lord than a listener in the pew, for the doorkeeper can get some reviving whiffs of the free breath of life which the worshippers lose. Not all the warblings and trills of the well-paid choirs can shake the heavy air into freshness. It seems mockery to call the gospel of this carbonized air "a taste of the everlasting feast," or to sing that this breath of the sanctuary is to conquer sinners and comfort saints, and make the fruits of grace abound. How dreadful heaven will be if it only supplies to all eternity such a dull elixir as this church air, which is in all the churches, beautiful and ugly, fashionable and unfashionable. In the winter, at any rate, when the roaring furnace is sending up its column of fiery gas, a waiting soul in the place of prayer may well believe that it is not only wretched and wicked, but that its punishment has begun. The air is an argument for depravity and a prophecy of woe. In the sense of this suffocation the saint of our time may envy the outside sinner, and may exclaim with the Apostle: "Wretched that I am! who shall deliver me from the body of this death?"

But the sinners, after all, are not better off than the saints. They go to the lecture halls to hear the laws of health and science expounded, to learn how the physical frame is made and supported. The chances are ten to one that the air which they are breathing negatives that teaching and neutralizes the influence of the proofs and appeals. How shall hygiene persuade men where a thousand of them are packed in a close room, to breathe over for some hours a fluid which is a drug in the blood? Where is the assembly-room, in which after a time the lights do not burn dimly because the oxygen runs low? There seems to be fatality attending all the schemes of venti-

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lating public halls, whether of legislation, or lecture, or music, or spectacle. The evil becomes worse in the effort to remove it. It is the same in large as in small halls, in halls with high ceiling as in halls with low ceiling, in halls that have many doors as in halls that have few doors. Even in the Boston Music Hall, one of the best ventilated in the land, there is the complaint at times that the air is not fit to breathe. Many of our halls and theatres are so placed that if the outer air is forced in, it comes in poisoned from some factory or nuisance in the neighborhood. The theatres are wedged in between shops, or are set above groceries and storehouses, with their "odious savors," as the song of Pyramus to Thisbe has it. Can the air in an academy of music be refreshing, when it comes charged with the ammonia of an adjacent stable or slaughter-house? Emphatically there the offence is rank, and smells to heaven.

Still more is the problem of schoolhouse ventilation a trouble and a vexation. Examination of the newest schoolhouses by experts proves that the air in them is no better than in the older buildings, which were without special provision, and not nearly as good as in the rude schoolhouses of the last generation, with their rattling windows, their cracked floors and their half-shingled roofs. If the old district schoolhouse was lacking in many things, it had this merit at any rate, of a supply of fresh air in its narrow space. Now they find that the air near the floor is impure, that the air near the ceiling is impure, that the air which comes in at the registers is not much better than the air which goes out at the flues. The "model" schoolhouses are sinners here above all the others. They have maps and blackboards and nice desks, and chairs fitted to the curves of the limbs, and closets and sinks, and are perhaps fireproof; but for all that they want one thing, the one thing that is most needful, an air that is fit to breathe. There is every aid for grammar and arithmetic, but no stimulant to the weak lung or the pallid cheek. That is what the doctors say, who have made the air of school-rooms a special study. That is what State Boards of Health say, who make it (the ventilation of school-rooms) the subject of elaborate reports. That is what experienced teachers know from their own daily suffering. The American massacre of the Innocents is going on all the time in our improved schoolhouses, on a scale that would amaze the Idumean satrap in Jerusalem. Moloch has his altars in these palaces of education, which are so proud in the cities and on the high places of the land. And if anywhere the torment of pestilent air is intense and agonizing, it is in the contrivances of travel which are called railway cars. Wonderfully fitted are those $20,000 Pullman cars, which roll so majestically on most of our large railways, with ample returns to the owners of the toys, but with shameful robbery of the stockholders of the road, who pay for the privilege of hauling what brings to them no revenue. A beautiful structure is a Pullman car, with its double windows, and its solid seats, and its closets hidden in the ceiling, and its silver ornaments, and its "state-rooms," and curtains, and lamps in the panels, and so many nice things—possibly a piano, and it may be, a kitchen at the end! But a Pullman car at two o'clock in the morning! One thinks of the Mamertine Prison, and the Piombi of Venice, and the Black Hole of Calcutta. Grateful souls, who have "passes" from the company, may sound the praises of these splendid sardine boxes, and vow that "the ventilation is perfect;" bnt less favored nostrils detect the lie, and know that a night here is only a variety of the "middle passage" in an emigrant ship or a slaver. One who respects his lungs and brain will keep clear of these sleeping vans, in which men and women are packed, even if the blankets are clean and the springs of the van are well adjusted. No sleeping car has yet been invented in which the foul breath of the sleepers can be scattered from concentration. The hangings and the upholsteries, the doors and bulkheads, all the showy toggery, are just a combination for keeping bad air in and good air out. And when we see the victims of a night in one of these boxes come groping and scrambling to the morning wash-basin we naturally recall that woe which Micah the Prophet tells, that "they shall come out from their holes like a creeping worm." Indeed, we might almost derive the word "car," applied to these structures, from the Hebrew chor, the literal meaning of which is "hole," or pestilent hole, in which men are "snared," as we read it in Isaiah's prophecy. The Greek equivalent for this chor is *Κύαρ*, identical with the affected pronunciation "kyar." Perhaps the Hebrew seers had premonition of the punishment for sin which we suffer in the Pullman and other sleeping cars.

But bad air has also lodging and tenacious hold in the cars which are not for sleep. Has any apparatus been produced that will drive it

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? Where shall one find, in the winter
s, a railway carriage in which there are
ıy travelers, who can breathe an air that is
r than stifling? Is it not the experience of
elers that the smoking car, with all its nar-
c fragrance, is yet better ventilated than
cars where women and infants are provided
h cushioned seats and carpets on the floor.
a rule, the poorest air is found in the most
ıfortable car. For real fresh air, the shrewd
veler will go to the baggage car, or the "lug-
e van," as the English have it; here his
d can be kept clean, if he must use a trunk
a seat, like the elephant driver of Burmah.
But why need we seek more illustrations of
l ventilation when the complaint is so uni-
sal, and no place seems to be exempt? What
elling-house has a perfectly satisfactory air,
n where no nuisances can be detected on the
mises, and no expense has been spared in
ticing into it the breezes of heaven. Where
the workshop in which the pleasure of easy
eathing moves the artizan to perpetual song
his toil? Where is the office in which the
wyer finds that the air makes dry briefs spir-
d, and turns to a pastime the search for au-
orities; or in which the doctor does not in-
le a draught which is only less bitter than
s powders and his pills? Where are the
d-chambers in which the dreams are natu-
lly of Araby the Blest, or in which the tired
ain is left by the air to sleep in Elysium?

Perhaps this complaint about foul air is ex-
avagant, and more ado is made about it than
e facts will warrant. Our fathers were not
sensitive, and they kept health in houses
here no direct provision was made for venti-
tion. Have we not grown morbid about a
latter which is really of minor importance?
s it not really a misfortune that air is so
eadily analyzed, and that there is so much
rying into its quality, to detect a few grains
ore or less of intrusive plague? Are we any
appier or sounder in body because we know
xactly the proportion of oxygen and nitrogen
nd carbon and water that ought to be in the
ormal air, and can test it and weigh it? Were
ot ignorance bliss, rather than this perpet-
al fret about what seems beyond help? Not a
ew impatient souls have come to hate this per-
istent alarm about an evil which seems to have
become an excuse for greater evils, and to un-
settle the foundations of morality. Are we not
told that the sins of men come from the bad
air which they breathe, and that crimes are
the product of atmospheric impurities? Is not
the carbon of the cellars and the attics made
responsible for the larcenies and murders upon
the highway? "For heaven's sake," they say,
"stop this tirade about ventilation and bad air;
submit to the inevitable, and let us have peace!"

But science is inexorable. We have discov-
ered the mischief, and in spite of this plea of
passive submission science will not be silent un-
til the evil is corrected and the remedy is shown.
We shall fight it out on this line, if it takes all
the rest of the century to finish the fight. We
shall agitate and agitate, until the foul vapors
are shaken out and away from the abodes of
Christian women and men. We shall try ex-
periments, even if a hundred more shall fail,
until "achieved is the glorious work." We
shall work on, hoping against hope, it may
be, until man becomes a successful ruler of the
earth because he has fairly dethroned Satan,
and become "Prince of the powers of the air."
We shall expose the causes of bad air, and
plead and threaten until they are set aside.
We shall not let the world live in its delusion,
or die in its sin; but shall cry aloud and spare
not. There is no discharge in this war for
any one who has sworn to protect the public
health, and to watch in its behalf.

The name of ways in which the air we breathe
is poisoned is "legion." But for convenience
in enumerating the sources of impurity, we
may take the mystic number of *nine*, to finish
the picture.

1. The first source of impurity in the air is
the *carbon given out in the process of breathing*.
Each breath that we draw helps to spoil the
next breath that we shall draw, if we are held
in a room where the air is confined. Of course
this cause is more efficient as the number of
those who breathe is greater. The air is ruined
more rapidly in a room where a dozen are
pouring out carbon from their lungs than where
only a single pair of lungs are at work; more
rapidly in a room where a thousand are crowded
together than where there are only fifty or a
hundred. The poison there is speedy in its
working, and we feel it in nerve and vein. But
it is not less real in the chamber where we
sleep or the library where we read, because its
influence is so silent and we take no heed of it.
While we draw in the breath of life we are all
the time throwing out the breath of death.

2. *Exhalations from bodies* are a second source
from which poison comes into the air. The
healthiest body, full of bounding life, sends
continually into the atmosphere around it the
seeds of disease. The emanations from any
organized animal frame put into the air some-
thing foreign to its purity. Plants, indeed,

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purify the air by what they absorb and by what they give out; but no one pretends that animals purify the air by their bodies, whether they are men or swine. Caliban in his den, rolled in his unwashed rug, does not vitiate the air more surely than Brummel in his boudoir, annointed and perfumed. Perspiration assists respiration in the distribution of carbon, and the result of a perspiring crowd in a ball-room or a church is not radically different from the result in a ginshop, or a hovel, where animal heat infuses the air with its microscopic deadly germs. Even the harmless, necessary cat, cleanest of all household pets, does evil to the air which can be appreciated. And the dear love of a spaniel or a poodle, washed and combed, and ringed with a pink ribbon, vitiates the air of the room while he lies upon his cushion.

3. Next to these two causes of impurity in the air, from which we never can get away, we may place the *decomposition of waste and refuse*, from the influence of which very few homes of men are free. From the store-room and the pantry, from the kitchen and the back yard, from vegetables and fruits in decay, from meats hung up economically, from garments rotting in dampness, from mold upon the walls, from the husks and the parings and the ash-heaps, what foul aroma rises before they melt and crumble into common dust! The utmost diligence cannot quite remove this source of pollution. No scavenger comes so often, or does his work so thoroughly, that he carries off every kind of decaying fibre. Some fungus will stay in the most jealously cleansed habitation. Where there is life and moisture, the rock will have always its moss and its lichens. Is there not paste upon the plaster? Does not the steam of the roasting and broiling come charged with effluvia, which may be grateful to the nostrils yet baneful in the residue of corruption? Friendship may live while the pot boils, according to the Latin proverb: "*Fervet olla vivit amicitia;*" but when the pot has done boiling, the latter emanations are unfriendly to health and comfort.

4. Of course, *dust* has a large share in loading the air with foreign substance—dust in many kinds, room dust, street dust and field dust, dust which hides in carpets and curtains, dust which is on the hearth and the window-sill and the cornice, dust which is palpable and vexes the nostrils, and dust which we only detect as it floats in the rays of sunlight. We have not to wait for death in order to return to dust; we never get away from it, even if we dwell by the lake and remote from the highway. Very few of the human race breathe an air in which there is no dust. It can only be in the region of ice-fields and polar snows. Even in mid-ocean dust flies in the air. Most of us live in an atmosphere thick with dust, rising from the pavement, rolling from the roadway, sifting through all crevices of the house, and borne in the garments wherever we go. Dust accompanies our pleasures; it is raised by the flying feet, and on the race-course we can call to mind the wail of Ezekiel, "By reason of the abundance of his horses their dust shall cover thee."

5. *Sewers and stagnant pools* are another fruitful source of pollution in the air. The best system of sewerage, carefully carried under the ground, with pipes impervious and cemented, cannot keep in all the pestilent vapors. Foul water, in its flow and its evaporation, inevitably dissolves into foul air. The convenience within the house becomes its plague. How shall the air of a city be quite pure when running rivers of filth are drawn under all its streets, to poison the water of the natural river into which they flow? Shall all the odors of Farina, genuine and spurious, clean the air of Cologne, while the river Rhine catches a flow not strained, but in no other respect like the quality of mercy?

6. *Miasma* from decaying vegetation, from marshes and alluvial soil, is another curse from which, in many localities, the air cannot escape. The deadly blight goes beyond the spot of its origin and spreads far, in spite of all effort to keep it back. It comes from the meadow up to the lawn, and from the lawn into the house. We breathe it in the mists of the evening and the mists of the morning, and the August air, which seems so refreshing and cool, is only malaria, which mortals ought to dread.

7. *Combustion*, too, in the methods which men employ it, destroys the air by the gases which it generates. Through the cast iron furnace and red hot stove, carbonic oxide finds its way into the current, and fills the house with a stupefying influence. Factory chimneys and house chimneys in the cities belch forth their smoke and send it through the air in sooty rain. Shall we expect pure air where the curling fumes of a copper mill or a chemical factory fleck the sky?

8. And then how many necessary nuisances disperse their odors in the haunts of civilized men! Glue factories, bone boiling works, soap works, tripe works, slaughter houses, breweries, tanneries, petroleum refineries, fish spread upon the land, charcoal pits, "herring pack-

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s," as the Dutch call them; how many of se are perpetually supplying the air which breathe with their stench and their tor- e! In every large city they abound, and they ow the fugitive as he flies from them.

. We close the list of sources of poison in air with the mention of the Indian weed, ich, alike in barbarous and civilized lands, ites the sweetness of the air into which it its. There are those to whom the smoke of cco is more fragrant than incense, and who e the scent as they love the sight of the ex- ding rings. But chemistry refuses to re- nize in tobacco a purifying element, or to commend it for sanitary qualities. The air of a room which holds the dead smoke of the narcotic plant will not be invigorating air. Perhaps there is no deliberate and constant method of fouling the air so effectual and so universal as this. If tobacco smoke poisons the air, so much the worse for the air. We must take the penalty of such a luxury.

In future essays we shall have something to say about methods of ventilation, and remedies for bad air which have been tried and have been proposed; disobeying the old Greek motto: "*Μὴ κίνει Καμαρνίαν*—Don't stir up the morass."

Oatmeal.

WE propose to devote a short article to oatmeal and its uses. Perhaps this may the more suitable, as the present price of eadstuffs is so very high that many who can- t easily afford to purchase wheaten bread in e quantity and of the quality which they ve been accustomed to use, may be glad to ar of a substance at once good and compar- ively cheap, by which it may be partially placed. To a very great number of the people England the value of oatmeal is little known; hough the prejudice against it, long enter- ned, as an article of food rather fit for the wer animals than for human beings, has of e, in some measure, given place to a more st opinion, especially amongst the educated sses, who are capable of appreciating the lue of the favorable verdict of chemists and ysiologists. It is now well known that no her kind of grain is so nutritious as oats; d the facility with which it is grown on soils t rich enough, and in situations not warm ough for wheat, recommends it very strongly, fitted to yield a very considerable part of r food supply. Oatmeal is a principal arti- e of food of the peasantry of Scotland, and til nearly the end of last century amongst ose of the north of England. It is on record at about the middle of last century a wheaten af could with difficulty be procured in Car- sle; the ordinary bread of all classes, except rhaps the very highest, being oatcakes— ere called *haver-cakes*, from a name of oats ill in use in the German language, and evi- dently connected with the Latin *avena*. In more ancient times oats formed the principal corn crop of most parts of England; but as agriculture improved and the cultivation extended wheaten bread was naturally preferred by those who could afford it, the use of oatmeal became more and more limited to the poorer classes; and on this very account was as much as possible avoided by those who, in respect of wealth, birth, or profession, made pretensions of superiority. Another circumstance which greatly tended to restrict the use of oatmeal where it was formerly general, was the convenience with which wheaten bread could be procured from the baker's shop, a matter of especial importance when almost all the members of a family were employed in manufactories. The revived popularity of oat-cake has recently led to the exposure of different kinds of it for sale in bakers' and other shops, particularly in Scotland.

The grain of oats intended for human food is generally prepared by being ground into meal; although it is also used in the form of *groats*, that is, of grain denuded of its husk, and merely broken into fragments. Oatmeal is of two kinds—both common in all shops in which it is sold—fine meal, and coarse or round meal. For various purposes some prefer the one and some the other. There is no difference in quality, but merely in the degree in which the grain has been triturated in the mill.

Oatmeal is principally used in two ways, for the making of porridge and of oat-cakes. Por-

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ridge is a principal article of food of the Scottish peasantry, generally accompanied with milk, when milk can be obtained; although when milk is scarce butter is sometimes used, sometimes sugar, and sometimes treacle beer. For most people, in a sound condition of health, there is no more wholesome article of food than porridge and milk, none that contains a larger proportion both of flesh-forming and heat-producing substances; whilst to almost all who have ever been accustomed to its use, it is extremely palatable. Generally speaking, there is no better article of food for the nursery, none more likely to maintain a healthy condition of the stomach, or to give vigor to the frame; although there are exceptional cases, both among the young and among adults, in which the use of porridge is unsuitable, producing painful distension of the stomach and indigestion. Whilst the caprices of children ought not to be heeded in such a matter, the actual conditions of their constitution ought to be carefully observed and regarded. Porridge is in general made by simply boiling oatmeal in water, stirring all the while to prevent singeing, and to secure the thorough mixture of the meal and water into a homogeneous mass, without knots. The quality of porridge very much depends on the amount of boiling which it receives. It cannot be too thoroughly boiled. Imperfectly boiled oatmeal porridge is a very coarse article of food; and, unfortunately, much of the porridge used by the poorer classes in Scotland and elsewhere is of this character; and the porridge prepared for the nursery is often no better, through the carelessness of the servants who wish to get through their work with as little trouble as possible. It is not nearly so digestible, and therefore not so nutritious as porridge really well made. A common mistake in the making of porridge must also here be noticed, as tending much to the deterioration of its quality, the adding of meal by degrees whilst the boiling goes on, until the proper thickness is acquired; the result being that part of the meal is imperfectly boiled. The cook ought to know the proper proportions of meal and water—knowledge not very difficult to acquire—and mix them at once, so that all the meal may be equally well boiled. But it is to be observed that the water must be boiling before the meal is put in, which is not to be introduced in a mass, but, as it were, strained through the fingers, handful by handful, as quickly as possible.

Whey is sometimes used, instead of water, for the making of oatmeal porridge, and affords a very agreeable variety to those in the habit of using porridge every day. Milk porridge is another variety esteemed as an especial luxury by the Scottish peasantry, and is certainly both a very agreeable and a very nutritious article of food.

Whether *fine* oatmeal or *coarse* oatmeal should be used for the making of porridge is merely a matter of taste.

The most hastily prepared and imperfectly boiled porridge is very superior to *brose*, yet *brose* is a form in which oatmeal has long been very generally used, at least in Scotland, and is still used by many of the agricultural laborers. It is made by merely pouring boiling water upon oatmeal and stirring it about. The result is a coarse, pasty mass, with numerous knots imbedded in it, of oatmeal almost raw; a very coarse kind of food, on which, however, with the addition of milk, many farm laborers mainly subsist, often using it as their only article of diet three times a day.

It seems to have been the custom in Scotland in former times, although the custom has long passed away, to boil *kale* (the coarsest kind of colewort) with oatmeal, or in some way to mix these ingredients so as to make what was called *kale brose*. There is an old Scotch song, called "Kail Brose of Old Scotland," of which the refrain is

"And O the kail brose of Old Scotland,
And O the old Scottish kail brose,"

in which are extolled the virtues of kail brose, and the vigor and exploits of the warriors who were nourished by that food. The combination of kale or greens with oatmeal seems not a bad one; it is somewhat like the Irish *colcannon*; but we cannot speak of it from experience, never having seen kail brose, nor have we ever seen the oatmeal porridge made with admixture of leeks, which is said to have been, in past times, a favorite dish in Wales. The word porridge is, indeed, supposed to be derived from the Latin *porrum*, a leek. The mixture of oatmeal and leeks may probably be a very wholesome, and not unpalatable dish. The two articles seem not by any means uncongenial.

It is hardly necessary here to allude to *Athol brose*, so called from the district of Athol, in Perthshire, which gives a title to a ducal family. Athol brose is a mixture of oatmeal, honey and whisky; the last named ingredient in no small quantity. It is said to be good for colds and sore throats, but is probably rather esteemed for its stimulating qualities; although in days when it was more in use than it is now,

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no excuse was thought necessary for taking whisky pure and simple.

Oatmeal is made into bread by being merely mixed with water, kneaded, and *rolled* out, by a wooden roller, into thin cakes, which are baked on an iron plate (*Scottice*, a *girdle*), suspended over a fire. Sometimes oat-cakes are made with hot water and sometimes with cold water; but those made with hot water are tougher than those made with cold water; which, if otherwise well made, are preferable. Much, however, depends on the kneading, and the question: "Is she a good baker?"—meaning a good baker of oatmeal—used to be a common one before the engagement of a domestic servant in some parts of Scotland.

Oat-cake can hardly be made too thin; the thinnest oat-cake is almost certainly the best. Oat cake soon loses its agreeable character by imbibing water from the atmosphere; but if placed before the fire till dried, and cooled, it becomes almost as good as when newly made. With butter, or with cheese, it is a most agreeable article of food.—*Food Journal.*

The Yellow Fever Epidemic in Memphis.

BY G. W. KIBBEE, M. D.

IN the January number of THE HERALD OF HEALTH I gave something of the philosophy of the treatment of yellow fever with cold water, as I practiced it in the epidemic at Memphis; mentioning three cases, and giving my method of applying the water. It is my purpose here to give only a short account of the other cases which I treated, and some remarks on fevers in general. On Tuesday night, October 22d, I commenced treating Miss Mary Hemple, who had been sick for two or three days with the premonitory symptoms of yellow fever, her mother having died a few days previous, and her father being then very low of the same disease. She had taken calomel and quinine to stave off the disease, but to no effect. The cold wet sheets and towels were applied to her the same as Miss Katie Walsh, and for forty-eight hours she was comfortable, and appeared to be doing well; but her nurse fell asleep for three hours, from exhaustion, and during that time the heat in her system did the fatal mischief. When the nurse awoke she was in a profuse perspiration, but in great pain all over, with severe sickness at the stomach, and immediately commenced vomiting and purging decomposed blood, and continued doing so until the vital force was spent. In this case though the immediate cause of her getting worse was plainly the neglect to keep up the application of cold water, yet it is by no means sure that the young lady would have lived had the treatment been thorough and constant, as the calomel she had taken must have had a very disintegrating effect upon her blood. I was called to a young man on Main street, who was in the very article of death, being unconscious, and wholly unable to swallow. His friends desired that I should apply cold water to him, which I did, assuring them at the same time that he could live only a little while. He was soon able to swallow, was apparently much more comfortable, and lived for six hours. I also treated a Mrs. Connelly, on Main street, who had been sick for six days, had passed through all the stages of the disease until death seemed just about to claim her, she being then without reason and pulseless. Within an hour from the time I commenced using cold water upon her she recovered her reason, her pulse became quite full and soft, the kidneys, whose action was wholly suppressed, soon acted freely, and for several hours her friends thought her chances of recovery favorable; but I warned them that her vitality was too far spent, which warning proved true, for her pulse, after holding up quite well for thirty hours, suddenly sank to a thread, and in six hours more she was dead.

On Saturday night, November 8th, I was called to see Mr. T. W. Johnson, whose physician had just said he could not live an hour. He was dying very hard. His brother requested me to use cold water on him, if I thought it would make his last moments more comfortable. I commenced a thorough course of treatment, which was to keep his blood cool to the normal standard, and to equalize the heat through his system. His improvement was so marked that it actually inspired in his

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friends some hope of recovery, but after twenty-two hours balancing between life and death, his vitality gradually sank for four hours, when he died. On Poplar street, at the residence of Mr. T. A. Hamilton, I treated Mr. Charles Geier for relapse in yellow fever. His recovery was slow, but he was well within two weeks from the beginning of the treatment. At 179 Second street, the residence of Mrs. Barbour, I treated a mulatto man, dining-room servant in the family, whose case was very critical from the commencement of the treatment. He had been very sick, with all the worst symptoms for thirty hours when I began using the cold water on him. His sickness at the stomach was immediately relieved, but for seventy-two hours he was almost constantly spitting out disintegrated blood from his gums and fauces, amounting, probably, to two or three quarts. His fever continued about four days, when it left him, and he was well and able to attend to his work within a week afterwards. Now, readers of THE HERALD OF HEALTH, I have given you an exact and true account of my work in the great epidemic of yellow fever at Memphis. I did not reach there until just as the tide of destruction was on the turn, but my experience with those cases that died as well as those that lived, must prove very instructive to a reflective mind. It was the belief of the physicians of Memphis, and, so far as I know, of physicians of the great popular School of Medicine all over the world, that the use of cold water to any considerable extent on the surface in yellow fever would prove dangerous, by preventing the elimination of poisonous matters through the skin, the main depurating organ of the body. The more recent experiences of Water Cure physicians and the occasional experiments of the most bold and progressive in their own ranks, have enabled quite a respectable minority of the popular school of practice to see that cold water applied to cases of scarlet fever, is not only safe, but often of great benefit, and this too, when it has been observed that where cold water is so thoroughly applied as to keep the heat of the scarlet fever patient at the normal standard, 98°, there does not occur the least eruption above the skin, or peeling off of the cuticle. This important fact ought to be enough to banish all fear about the suppression of poisonous matters by the use of cold water in all eruptive diseases. It was a thorough knowledge of this fact that gave me the assurance, some might call it courage, to go to Memphis to treat yellow fever, which, like scarlet fever and reubola, or red fever, always terminates in the skin when the blood does not become so putrid or decomposed that the vital force is unable to cast the poison particles to the surface. Such also is the case with the spotted fever or cerebro-spinal-meningitis. Where this latter disease is treated thoroughly with water, on the principle of keeping the heat equalized and at the normal standard, there appears a scarlet eruption *under the skin*, nearly as distinct as that of scarlet fever or measles, when treated in the same way. In yellow fever, when the treatment is begun before the disintegration of the blood commences or has advanced very far, there occurs very little, if any yellowness of the skin, and none of that long lingering convalescence which attends those cases who live through the sweating plan of treatment. From my conversation with physicians of all schools of practice, and with intelligent people generally, I find the prevalent impression is that in all fevers, whether the inciting poisons have an eruptive tendency or not, the poisonous matter must either be neutralized in the system, or driven through the depurating organs by whipping up the vital force with poisonous drugs, or with abnormal heat. That these ideas are wholly erroneous, I trust I shall be able to prove in few words. Take, for instance, the inciting cause of small-pox. Just one breath of air, containing an infinitessimal something that is inimical to the life force, is sufficient to induce small-pox in its most malignant and fatal form. What a vast change in the human system in the short term of fourteen days, from vigorous health, to the loathsome confluent small pox victim; and yet its cause is too minute to be distinguished by the aid of the most powerful microscope. Whence comes all the poison in a confluent small-pox case, for certainly, the poison has increased a million fold since its first inception. Evidently it is manufactured from the impurities in the blood, and that too, after the seed poison has been long enough fostered in the blood to induce vital resistance, which causes *excessive heat*. Now no matter *what* the nature of the inciting poison, this excessive heat turns the impurities in the blood into poison, like in its nature to the peculiar yeast poison that first excites the vital disturbance. Is proof asked? Take the universal observation of mankind from time immemorial and you will gain indubitable evidence that drinking cold water, and applying it to the skin in sufficient quantity to cool off the fevered body to the normal standard of vital heat, invariably mitigates the symptoms of fever, no

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matter what the name, or what the inciting cause. Again, when a person is subjected to the direct rays of the sun for a length of time in a temperature above that of the healthy blood, the heat of the blood suddenly rises; poison is developed, and the person drops with sunstroke. If cold water is immediately applied so as to reduce the heat to the normal standard, the patient is likely to recover, if not, in a few minutes or hours he dies. But, it is asked; is it not just as natural and essential that the heat of the body should rise when the vital force is expelling whatever is obnoxious to it, as that the heart and lungs should sometimes double their normal action, as in scarlet fever, small-pox fever, or yellow fever? undoubtedly it is, for it is nature's method of eliminating poison; but let it not be overlooked that in all sentient beings, from the lowest worm up to man, when the heat of the body becomes excessive, nature gives the instinctive desire for cool water to drink and to bathe in. On the evening of my arrival in Memphis I repaired at once to the office of Dr. R. S. Freeman, Secretary of the Board of Health. He treated me with kindly consideration, but said my plan of using cold water for yellow fever would meet with no approval by the physicians of Memphis, and that he himself would be afraid to apply cold water externally, though he had always allowed his yellow fever patients ice. The next night he was taken sick with the disease, and I visited him every day during the five days that he lived. The heat of his room averaged about 90°, and he drank hot orange leaf tea in great quantities, which kept him in a profuse perspiration most of the time. On the night but one before he died, while I was sitting beside him, he said, "nurse, bring me some ice," and after a moment, looking upward, "I thank God that I never denied one of my yellow fever patients ice," proving that he had the heart to listen to and regard the pleadings of his yellow fever patients for something to cool their burning heat, and that all the prejudices of a false medical philosophy were broken down in his extremity by nature's instinctive cravings.

My object in going to Memphis was not so much to give to the world a new philosophy and treatment for yellow fever, as to prove to all persons who are disposed to do their own thinking on this ever pressing subject of life and death, the FEVERS of our people, that keeping the heat of the blood at the normal standard with cool water, administered internally and externally, will prevent any dangerous development of poison in the system from impurities in the blood, no matter whether the seed poisons be malarious, infectious, animacular or vegetative. Water, water, cold water! has been the cry of fevered patients from time immemorial; but their cries have been unheeded by doctors so blinded in their theories that, when the scarlet fever, comes they allow their own darlings to perish for the want of nature's remedy; and when the yellow fever sweeps a devoted city, as in Memphis, they lay themselves down and die in the very pits that their cupidity and false learning have dug for the people.

It is my purpose in another number of this Journal to give a plan of treatment with water which will be safe and efficacious in all fevers, no matter what the nature of the poison that incites them.

"A Country Home, My Dear."

BY LYDIA M. MILLARD.

A LADY noble, gentle, kind,
With manners polished, taste refined;
Looked through her broidered curtains gay,
And softly to herself did say:

"Here is my happy, destined post,
Where great humanity beats most,
Here may my tranquil life be passed,
Here be my grave, with friends at last."

Breaking in on her reverie sweet,

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Comes the quick tread of welcome feet,
And a manly voice, indulgent,
Says, with smiling face refulgent:

"I've bought you country home, my dear;
'Tis only thirty miles from here,
Good for children, healthy for you,
It was the best thing I could do."

Next week they moved to farm-house small,
With hundred acres, swamp and all.
He stayed behind, helps on to send,
The stock and barn and house to tend.

On the helps came, to queer old farm,
String as long as from house to barn;
Blonde and brown, and yellow and black,
Came up at night, at morn went back.

At last one morn tall girl stood there,
Big white feather crowned her red hair;
She'd a note, in which husband said:
"This girl keep, till married or dead."

She stayed that day, she stayed that night—
Hat and feather on early and bright,
Down stairs she came, to give them warnin',
"I'm after lavin ye this mornin.

"Th' office man me big story told,
That ye'd convanyuns hot and cold,
Ye aint no gas, ye aint no streets,
Ye've plinty mud for body's feets.

"'Tis out the world intirely ye be,
Ye brart me, shure, to be killin' me."
And hat and feather went up the road,
To find illigint, convanyunt abode.

In comes a tall woman, with eyes full of fire:
"Your cow's in my orchard," she screams with great ire.
"My men folks are gone, my darter's sicker bed,
Sich ridikilis neighbors I ne'er saw," she said;
"Your cows allays bother us, in pound go they shill."
Then she flies out the door her threat to fulfill.

"Mother! Mother!" the children shout,
"Mulley's in the swamp, the pig's got out,
The colt's gone up the road—don't you think,
The soap's in the well and we can't drink.

"The black cat's killed three chickens more,
The wind's blown down the granary door,
The rooster's hoppin' on the parlor chairs,
And Willie's fallen clear way down stairs.

She bathes Willie's bumps, makes rooster decamp,
When he's upset inkstand, broken best lamp;
Then off for the colt she runs such a rig,
His coltship safe back, she starts for the pig.

"As for that cow in the swamp," said she,
"Stay there she will, I guess, for all me."

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Stove smokes, the wood is green and wet,
She must bake and churn and dinner get.

Bread raw in the middle, burned black all round,
Her sevenfold tribulations crowned,
Mrs. Job would have scolded poor Job till he died,
If she had with wet wood his bread to provide.

Husband writes: "No intelligent, common sense soul,
With a woods full of wood, will ever burn coal."
His logic is perfect and sound, I dare say,
But the wood's in the woods, and there it does stay.

And another letter from husband says,
He'll be absent in Boston a few days.
He sends her his love and sympathy true;
But what can his love and sympathy do?

Hans and Jacob have gone, "cos" they both say,
"Witches their horses' manes braid every day"
Mike couldn't eat "sheep," but nice linen he'd like,
He's taken ten shirts, and made a quick strike.

With all her fresh air, fresh cream and fresh pork,
What can a woman do fresh from New York,
With four children, four horses, six cows, fifty hens,
On a big farm alone, "without any mens?"

In his letter to-day, husband did write:
"Use system my dear, and all will come right'
Advise him so, in a like emergence—
"Your system be hanged," he'd say with a vengeance.

Had she oceans of system, a world full of brains,
And unbounded neatness, order and pains,
If in the farm balance her soul must be weighed,
She'll forever be wanting, she's mighty afraid.

She'd let Latin and French and Music all go
To Guinea a year, could she cut wood and hoe,
Follow wandering cows, horses water and feed,
Belligerent colts well conquer and lead.

Mightier than Hercules, bring pig back to pen,
Heal everlasting sore throat of delicate hen,
Make rooster brother rooster love and protect,
Their fraternal "cut-tah-cut" hear and respect.

He dreams of delightful and dear country home,
Where wife and fair children in pure air can roam;
Hat brushed, and coat brushed, well shaven and shorn,
He rideth to Boston that beautiful morn.

They've quite a social time on the cars,
But talk not of politics, fashions or wars;
He tells them of farms that glorious rise,
Under the distant Jersey skies,
Where rent costs nothing, you raise all you eat,
Rich golden harvests eternally reap.

Where four thousand hens, give the year round, they say,
Exactly three thousand good eggs every day,
Twenty thousand cabbages, a shilling a head,

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And one thousand bushels of potatoes, he said,
This well invested more acres would buy,
To twelve-fold its value increase by-and-by.

Bank stock might dwindle, clients grow less,
Mechanic and merchant come to distress,
But potatoes and eggs, and cabbages stand,
A fortune enduring, in eternal demand.

His eloquent finger, persuasive doth shake,
Till they all say, "that's so, I wish you could make
Our wives think as you do, but women will jump
At hasty conclusions, they'll whip round the stump;
They have'nt well balanced mathematical bump.
Shut up in close cities, where folly abides,
They can never see fairly and squarely both sides,
Jersey farms may bring 300,000 some day—
We'll make a few sacrifices now, it will pay."
And their eloquent lips Flor del Fuma adorn
As they ride into Boston, that beautiful morn.

There's one little woman most worried to death,
She can't find a moment for one quiet breath,
The weather has taken a sudden cold turn,
And she hasn't one stick of wood cut to burn,
The colt's fallen down through the old stable floor,
And the new minister knocks at the door,
She's maid, man, cook, lady, and farmer forlorn,
While he rides to Boston, that beautiful morn.

A mischievous maid at my elbow doth say,
"He'll trade off that farm at no distant day,
For house in Fifth avenue, stately and grand,
New wig on his head, gold cane in his hand,
With diamonds and pearls wife the second adorn,
And they'll ride to Boston, some beautiful morn."

Phthisis Pulmonalis, or Pulmonary Consumption.

BY W. G. BARKER, M. B., LONDON. (*First Paper.*)

IF any confidence is to be placed in the statement that in England alone more than fifty thousand die annually of this disease, or if it be even an approach to the truth, and there is reason to believe that there is; likewise that in every region of the globe this dire disease afflicts our race; the careful investigation of its causes, by which alone it is possible materially to reduce the number of its victims, or the application of the mind to relieve the suffering which this disease entails, must always be regarded as deserving of the highest consideration.

Before the introduction of the stethescope, by which we are enabled to define with almost absolute certainty the existence of this disease, phthisis was considered altogether incurable; and when restoration to health took place from any pulmonary complaint, however positively the general signs might have indicated consumption, the disorder was invariably considered to be some other; and he who was so bold as to assert that this disease was even within the pale of hope, was considered either a charlatan or a visionist.

We owe to Laennec, the illustrious discoverer

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of this simple instrument, the exposure of the fallacy of this opinion; and, grounded upon the revelations arising from its use, there is now scarcely a physician of repute who does not admit that this, the most prevalent of all diseases, will in many instances admit of cure; and that there are none in which life may not be prolonged, and suffering greatly alleviated; and even in those cases which have reached the most advanced stage, and the chances of restoration are very slight, so much may be done to assuage pain, and render existence comparatively tranquil and happy, as to make the duties of the physician one of the most satisfactory that can fall to the lot of any man.

Nor do I think, avoiding all cant, which I utterly detest, and without any desire to encroach upon the duties of the ministers of religion, that legitimate spiritual consolation from the medical man is in any way misplaced; for of all the professions that serve to give exalted views of the power, the wisdom and goodness of God, and to inspire us with the belief that our existence does not end here, but rather, in accordance with the words of Elihu in the book of Job: "But there is a spirit in man, and the inspiration of the Almighty giveth them understanding," that of medicine and collateral sciences seem the first; for he who has cultivated his profession with assiduity, and examined the mysterious processes by which our existence is begun and perpetuated, will cease to doubt the power of the Deity either to recreate or continue it, after we have yielded to the earth the perishable materials which compose our frames. With these convictions constantly present in his mind, he is often enabled materially to aid in their generous efforts the physicians of the soul, without any regard to the particular sect to which the sick person may belong, feeling well assured that the good will be accepted by the Father of all.

We shall best arrive at a knowledge of the origin or causes of this disease by a careful consideration, first, of

ITS NATURE OR PATHOLOGY.

Its Anatomical Characters. — Phthisis pulmonalis essentially consists of a solidified albuminous or fibrinous exudate from the blood-vessels, which, as it transudes, becomes blended with and deposited in the surrounding tissues. It is usually found in the upper lobes of the lungs, in a scattered, aggregated, or stellate form, and presents itself in *two* essentially distinct conditions.

1. *The simple Fibrinous Tubercle.*—This appears to the unaided sight as small, semi-transparent granules, about the size of millet seeds, generally of a roundish, nodulated form, and feeling hard when pressed between the fingers, constituting the *gray, semi-transparent tubercle* of Laennec. Blended with these we occasionally meet with others which are somewhat smaller, less firm and more transparent.

2. *The fibrinous croupous Tubercle.*—This presents itself in the shape of roundish nodules, which vary in size from that of a millet seed to hemp seeds or peas, of a yellow color, more or less firm, friable, lardaceous and curd-like. This form is termed *yellow tubercle.*

Under the microscope the *first form* has the appearance of a more or less pellucid fixed blastema, embodying within its substance elementary granules of various sizes, nuclei and nucleated cells, the latter very few in number, and from the two thousandth to the four thousandth of an inch in diameter, of an irregular form, being either somewhat round, oval, angular, bulging or dumb-bell shaped, and containing within them several granules; but without any distinct nucleus.

The *second form* also exhibits the same elements, viz., a fixed blastema with granules and corpuscles, likewise numerous exceedingly minute molecules.

The tendency of the first form is to its extinction, or a gradual wasting of its substance; it shrivels, and becomes tougher and harder. Occasionally there is blended with it a bony deposition, the tubercle becoming partly cornified and partly ossified. This form of tubercle never softens.

The tendency of the second form is to suppuration or softening, and also to cretefaction. After the tubercle has remained for a certain time in a state of crudity it increases in volume, loosens and breaks up; being first converted into a tenacious, fatty substance like melted cheese; and ultimately liquefies into a thin, whey-like fluid loaded with flocculi, the remains of the disintegrated tubercle. Under the microscope we find the change consists in the conversion of the blastema into a fluid loaded with exceedingly minute molecules, commingled with fatty matter, whilst the nuclei and cells become irregular, more isolated, and dissolved. During this process phosphate and carbonate of lime, with fatty matter, become blended with the tubercle, by which it is gradually thickened and converted into a moist, unctuous chalk-pap, and eventually to a concrete mortar. Crystals of cholesterine may

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also frequently be seen commingled with the cretaceous matter.

The two cardinal forms present considerable variation, and seldom exist pure, but are blended the one with the other, making several varieties; and the softening or malignancy of the tubercle is a spontaneous metamorphosis peculiar to it, and depends upon its character and the degree in which the one kind is associated with the other. Where the deposit has taken place at one period it commences in the central part of the mass, but where it has occurred at different times, and is of a varied character, the softening may commence at any part, even at the circumference.

There is another form of tubercle—the pigmentary—depending upon the deposit of coloring matter in the substance of the other kinds, and is usually hemorrhagic in its origin.

Its Constitutional Characters.—The deposit of the tubercle is essentially dependent upon a morbid condition of the blood—a dyscrasia—the result of which is that, in the ordinary process of textural nutrition, the exuded blood-plasma, instead of being appropriated to the reparation of the tissues, or re-absorbed, becomes deposited and solidifies; this, in the majority of instances, is altogether independent of inflammation. Rokitansky considers the groundwork of tubercle to be fibrin, and the opinions that have been expressed by Dr. Hughes Bennett, of Edinburgh, with respect to its origin, seem not only to rest upon the soundest basis, but likely to lead to success in the treatment, viz., "that an excess of acidity exists in the alimentary canal, whereby the albuminous constituents of the food are rendered easily soluble, whilst the alkaline secretions of the saliva and pancreatic juice are more than neutralized, and rendered incapable either of transforming the carbonaceous constituents of vegetable food into oil, or of so preparing fatty matters introduced into the system, as will render them easily assimilable. Hence an increased amount of albumen enters the blood, and has been found to exist there by all chemical analysis, whilst fat is largely supplied by the absorption of the adipose tissues of the body, causing the emaciation which characterises the disease. In the meanwhile the lungs become especially liable to local congestions, leading to exudations of an albuminous kind, which is tubercle. This, in its turn, being deficient in the necessary proportion of fatty matter, elementary molecules are not formed so as to constitute nuclei capable of further development into cells; they therefore remain abortive, and constitute tubercle corpuscles. Thus a local disease is added to the constitutional disorder, and that compound affection is induced which we call phthisis pulmonalis, consisting of symptoms attributable partly to the alimentary canal and partly to the pulmonary organs."

That the tuberculosis depends upon a degraded condition of the blood-plasma is most clearly shown by its affecting not only the lungs, but, when excessive, the structures of the body generally, and that it should select the lungs as its especial seat, is, I think, readily accounted for by the great vascularity of these organs, and the delicacy of their structures, whilst the atmospheric changes, in the way of temperature and moisture to which they are unceasingly exposed, tend to a constant alteration in the caliber of the capillary vessels, and thus favor their congestion, and the transudation of the unhealthy liquor sanguinis from which tubercle is produced.

The Apocrypha as a Teacher of Hygiene.

LET not the greediness of the belly or lust of the flesh take hold of me; and give not over me thy servant into an impudent mind.

As the clear light is upon the holy candlestick; so is the beauty of the face in ripe age.

My son, keep the flower of thine age sound; and give not thy strength to strangers.

The chief thing for life is water, and bread, and clothing, and an house to cover shame.

Better is the poor, being sound and strong of constitution, than a rich man that is afflicted in his body.

Health and good estate of body are above all gold, and a strong body above infinite wealth.

There is no riches above a sound body, and no joy above the joy of the heart.

Death is better than a bitter life or continual sickness.

Give not over thy mind to heaviness, and afflict not thyself in thine own counsel.

The gladness of the heart is the life of man,

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ıd the joyfulness of man prolongeth his days.

Envy and wrath shorten the life, and care-lness bringeth age before the time.

A cheerful and good heart will have a care of is meat and diet.

Watching for riches consumeth the flesh, and ıe care thereof driveth away sleep.

Watching care will not let a man slumber, as sore disease breaketh sleep.

If thou sit at a bountiful table, be not greedy pon it, and say not, there is much meat on it.

Eat as it becometh a man those things which re set before thee; and devour not, lest thou be ated.

A very little is sufficient for a man well nur-ıred, and he fetcheth not his wind short upon is bed.

Better is he that laboreth, and aboundeth in ll things, than he that boasteth himself, and anteth bread.

Sound sleep cometh of moderate eating; he iseth early, and his wits are with him; but the ain of watching, and choler, and pangs of the elly are with an unsatiable man.

And if thou hast been forced to eat, arise, go orth, vomit, and thou shalt have rest.

My son, hear me, and despise me not, and at he last thou shalt find as I told thee; in all hy works be quick, so shall there no sickness ome unto thee.

Let our strength be the law of justice; for hat which is feeble is found to be nothing worth.

Be not overwise in doing thy business; and oast not thyself in the time of thy distress.

Whoso is liberal of his meat, men shall speak well of him; and the report of his good house-keeping shall be believed.

Show not thy valiantness in wine; for wine ıath destroyed many.

The furnace proveth the edge by dipping; so loth wine the hearts of the proud by drunken-ness.

But wine drunken with excess maketh bitter-ness of the mind, with brawling and quarrel-ing.

Drunkenness increaseth the rage of a fool till he offend; it diminisheth strength and maketh wounds.

He raiseth up the soul and lighteneth the eyes; he giveth health, life, and blessing.

The belly devoureth all meats, yet is one meat better than another.

The beauty of a woman cheereth the counte-nance, and a man loveth nothing better.

Be not insatiable in any dainty thing, nor too greedy upon meats.

For excess of meats bringeth sickness, and surfeiting will turn into choler.

By surfeiting have many perished; but he that taketh heed prolongeth his life.

Honor a physician with the honor due unto him for the uses which ye have of him, for the Lord hath created him.

The principal things for the whole use of man's life are water, fire, iron and salt, flour of wheat, honey, milk, and the blood of the grape, and oil and clothing.

My son, lead not a beggar's life; for it is bet-ter to die than to beg.

The life of him that dependeth on another man's table is not to be counted for a life; for he polluteth himself with other men's meat; but a wise man well nurtured will beware thereof.

The mourning of men is about their bodies, but an ill name of sinners shall be blotted out.

Learn where is wisdom, where is strength, where is understanding; that thou mayest know also where is length of days, and life, where is the light of the eyes and peace.

Be not an hypocrite in the sight of men, and take heed what thou speakest.

Whatsoever is brought upon thee take cheer-fully, and be patient when ye are changed to a low estate.

Let thy speech be short, comprehending much in few words; be as one that knoweth and yet holdeth his tongue.

Rise up betimes, and be not the last; but get thee home without delay.

Let the counsel of thine own heart stand; for there is no man more faithful unto thee than it.

Let reason go before every enterprise, and counsel before every action.

He that loveth gold shall not be justified, and he that followeth corruption shall have enough thereof.

Keep thy word and deal faithfully, and thou shalt always find the thing that is necessary for thee.

Help thy neighbor according to thy power and beware that thou thyself fall not into th same.

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CHATS WITH THE CHILDREN.

BY THE EDITOR.

MONEY.

I want to have a little chat to-day about money. The word money means the same as mint. The word mint is from a latin word *moneta*, which means *mine*, a place in the earth where minerals are dug out, as a coal mine, a silver mine, a gold mine. I never saw a boy that didn't like to look at the bright coins, that come from the mint stamped with stars and heads, and other queer things. There is a great mystery about money to children. They can never understand how a small bright coin, unfit to eat or drink or wear, will buy things so valuable, as clothes, food, horses, and all sorts of playthings. And, generally, boys when they get a dime spend it just as soon as they can swap it off for something they want, or think they want—a top, a ball, a kite, a hoop, a pair of skates, anything that can be used. Some people find a great deal of fault with children because of this. I do not. It is just what older folks do. They pay out their money for what they want, or think they want. If there is any difference between a boy and a man in this respect it is that the man will know how to make money go farther than a boy can. I doubt if he will get any more pleasure out of it. A boy sees a curious toy in the window of a store, a top, a beautiful pop gun, anything new and strange, he wants it, works and contrives for it, at last gets it, and for a few days gets more pleasure out of it than a man does who buys a fancy horse, a handsome book, a nice carriage, a beautiful sleigh—shall we say the boy has done a foolish thing and the man a wise one. I think not. Still children ought to learn when young to know the value of money, and how to save it. And when they have any to spend to consult their parents as to how to do it. I am greatly in favor of savings banks for boys and girls, where they may put their surplus pennies at interest so as to have them all added to one amount at the end of the year.

While on this subject I want to say that while money is no substitute for character and good behavior, while it will not buy peace of mind, love of friends and neighbors, while it cannot be exchanged for these fine qualities of the head and heart that make people worth so much in this world and in the world to come, yet it is a very desirable thing to have—not for its own sake, but for the uses to which it may be put. Money means home, books, education, travel. It will buy almost anything the world gives. For this reason I advise all boys and girls to make up their minds early to earn for themselves a proper amount of it.

Now for your questions.

I want to know how people did when there wasn't any money anywhere in the world?

ANS. — They traded one thing for another then. If a man wanted some clothes he perhaps took some corn to the tailor and made a trade with him; or if the tailor didn't want corn he, no doubt, wanted honey, or milk, or butter, or meat, or something else.

I want to know who first found out how to make money?

ANS. — It was found out thousands of years ago. The Jews had money over three thousand years ago. I saw the other day a Jewish coin over two thousand years old. It had, in Hebrew letters, one of the ten commandments on it; but it didn't have any image on either side. The Jews did not allow of any graven images. There are people who collect as curiosities the different sorts of money used by different people, and such collections are very interesting. The ancient coins of the Hebrews, Romans, Greeks and other nations are well worth studying When you are older and go to Philadelphia you must visit the mint and see the collection they have there; also go and see how money is made.

I wish I knew how a bit of paper with a little printing on it is worth so much?

ANS.—You will have to wait awhile before you can understand this. It puzzles all children. They cannot see why anybody with a printing press can't make money this way. These bits of paper are only valuable because it says on them that the bank or the government will pay in gold, or its equivalent, for them. If they can't do this, then paper money is worthless.

Father says money is tight; what is tight money?

ANS.—When money is hard to get people call it tight. It means the money is all tied up somewhere and don't circulate.

Who has got the most money of anybody in the world?

ANS. — Probably Baron Rothschild and

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s family. They are rich Jews, who live in
irope.

If there are no more questions we will stop our
at for this month. Please send in your ques-
ns for next month. No, you need not either.
am going to ask you to answer a question for
me next month. Write me as soon as your answer is ready. My question is this:

What would you rather have than anything can think of. Don't forget to answer me early, so I can print it in April. I must have the answer by the 1st of March, to use it.

EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

ERRORS.

I. Is the following statement from a leading urnal corect? "During the life of a man the art performs 104,000 pulsations every twenty-ur hours, 37,000,000 per year, and in a life eighty years nearly 3,000,000,000, without er stopping, as a stoppage would be at once tal to the individual. Every pulsation pro-cts six ounces of blood with a force which as, by experiment, been determined to be quivalent to a hydrostatic pressure of eight et, which is equivalent to a power of three ot pounds for every pulsation, and 72x3, or 16 foot pounds per minute. Estimating the ower of a strong man at 4,320 foot pounds per inute, it is seen that the little muscle which e call the heart exerts at every contraction power equal to one-twentieth part of the ower which his whole body is capable of ex-cting; but then this power works night and ay, without his will, even without his knowl-dge, while man can only work one-third of e time. The whole amount of the blood pro-elled by the heart is twenty-seven pounds per inute, 1,620 pounds per hour, 38,000 per day, 4,000,000 pounds per year, 1,000,000,000 ounds in a lifetime."

ANSWER.—Suppose the heart beats seventy mes in a minute, then in an hour it would eat 420 times, in a day 10,080 instead of 104,-00 times, and in a year 3,679,200 instead of 00,000,000. We have been taught to believe at figures never lie, but these figures seem to ave been made to lie in spite of their general eputation for truthfulness. The above item is oing the rounds of multitudes of papers and agazines. It is false all the way through. or instance, it says the heart never stops. If ou will lay yourself quietly back in a rocking-hair and listen to the beating of your heart, ou will observe that between every pulsation there is a very short cessation of action—a little rest. The other calculations may not be so far out of the way. But no question in physiology is more unsettled, one physiologist wildly rating each pulsation as equal to a force that would lift 180,000 pounds one foot high, and another estimating it as only five ounces. Until we have more definite knowledge, we had better not be too certain as to such calculations.

LAUGHING AND CRYING.

II. Why is it healthy to laugh and be joyous, and unhealthy to cry and be sad?

ANS.—A scientific answer to this question is perhaps hardly possible; yet there is no doubt but that the sensation of laughter stimulates the nervous system, causing nervous power to be increased, an expansion of the lungs, and good feeling generally, while crying and sadness reverses the order and depresses nerve power.

NOTIONAL PEOPLE.

III. Do you think it well for people to be notional and squeamish about their food?

ANS.—No. It is well to be wise in the choice of food, but not notional. It is generally best to train the appetite to take what is convenient, providing it is wholesome. Custom will make it pleasant to you. This rule will perhaps have exceptions, as when there are idiosyncrasies.

EATING TO PLEASE.

IV. When dining with friends should we eat of all the dishes set before us to please the host, who good-naturedly urges us to take more than we want?

ANS.—

"'Tis better, sir, I should you now displease,
Than by complying next day lose my ease."

An ingenious and dextrously made excuse is always as acceptable as compliance.

LIMIT OF MENTAL POWER.

V. Is there any limit to the acquirements of a healthy mind?

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ANS.—Yes. All persons find that in some respects they acquire knowledge easily and rapidly, in others they are next to idiotic; one man is a born mechanic, another a born musician. To the latter mechanical work is tedious; the former could not learn to sing well were he to as give his life to it.

COLD HANDS.

VI. Is it important that the hands be kept warm as the feet?

ANS.—Yes. To keep the hands always warm conduces greatly to health and length of life, as well as to comfort. This is best done—so far as clothing is concerned—by warm sleeves coming to the wrist; also by exercising them properly. The hands are rarely as warm as the body, and are sometimes many degrees colder. We have known the temperature of the hand to sink to 65°. In health they should not be over three or four degrees colder than the body.

BEARDS AND THROAT DISEASES.

VII. Do full beards tend to prevent throat and lung diseases?

ANS.—Full beards have long been regarded as a defense against bronchitis and sore throat, and it is asserted that the sappers and miners of the French army, who are noted for the size and beauty of their beards, enjoy a special immunity from affections of this nature. The growth of hair has also been recommended to persons liable to take cold easily. It is stated that Walter Savage Landor was a sufferer from sore throat for many years, and that he lost the morbid disposition by allowing his beard to grow, according to the advice of the surgeon to the Grand Duke of Tuscany. A writer in The Dublin University Magazine, however, referring to this theory and to the example cited in its favor, states that he adopted the same course as Landor, for precisely the same reason, and with fair success; but is, nevertheless, bound to state that he knows of individuals with long flowing beards who have not been saved from attacks of bronchial and laryngeal disorders.

LONGEVITY OF JEWS AND CHRISTIANS.

VIII. The following statement shows that Jews are more healthy than Christians. Is it true?

"From an examination of the census statistics of Austria, Russia, Turkey, Germany, England, France and the United States, a writer in The Medical Record has ascertained that the mean average duration of life among Jews exceeds that of Christians by about five years. The statement is made also, by Pressia, that there is 1.61 per cent. of deaths among Jews to 2.62 per cent. among the general population; and in France Christians live, on an average, thirty-six years and eleven months, but the Jews forty-eight years and nine months. According to M. Mayer, a leading authority, one-half the Christians die before reaching thirty years of age, while among the Jews one-half live to be fifty years old. Of the former, too, only 13.4 per cent. live to see their seventieth year, while of the latter 27.4 per cent. reach that age. A proportionately smaller number of children, it is also found, die among the Jews than in any other race; this being attributed to the fact that the Jews marry at more favorable ages."

ANS.—The word "Christian," as used in the extract sent us is, general and not special. For instance, it includes not only professing Christians, but all the people of so-called Christian nations, whether drunkards, thieves or vagabonds, as well as moralists and philanthropists, atheists, deists, etc. It is doubtless true.

POISONED BY TEA.

IX. Does tea ever become injured by the chest and unfit for use?

ANS.—Recently at Highland, Iowa, the family of Mr. Kimball were poisoned by drinking tea containing arsenite of copper. The tea was taken from the bottom of the chest. Timely medical aid was all that saved the entire family from a sudden death.

PARENTAGE AND HONESTY.

X. Are parents as likely to commit crime as married people without children?

ANS.—Bertillon, in some interesting statistics relating to the population of France, laid before the Academie de Medecine not long since, stated that in a million married persons without children there is an average of 175 convicts yearly, while in the same number with children there are but 109. In a million childless married men 470 commit suicide annually, while in an equal number with children only 205 make away with themselves; among married women the proportion was 157 to 45; widowers with children 526, without children 1,004; widows with children 104, without children 238.

LIFE OF SEEDS.

XI. How long do seeds live in the ground?

ANS.—The Canandaigua, (N. Y.) Repository and Messenger has the following: "About thirty years ago, near the southern boundary of this county, a farmer's wife, living in a small log cabin on a hillside, planted in front of her door a plot of flowers, among which was the

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urple poppy. After the farmer built himself new house at a little distance from his former bode, to take advantage of the hill, the road as moved so as to run directly across this plot f flowers, and for twenty-five years or more here has not been seen the least vestige of any ower that formerly grew there. Last year, in orking on the road, the hill was plowed and raped and graded down, and this year, circumstances proving favorable for the germination of the long buried seed, purple poppies are looming along that roadway"

TREATMENT OF CHILBLAINS.

XII. How should chilblains be treated?

ANS.—First bathe the parts every day in epid or cool water, next wear fine but thick otton stockings, and change them often. Then, they are very bad, use a preparation made as ollows: About an ounce of tannin is dissolved a half a pint of water, seventy-four grains of odine are dissolved in an ounce and three-ourths of spirits of wine; the two solutions re then mixed, and enough water is added to nake up the whole to two and a half pints. The remedy is applied once daily, the best time fter bathing the parts in water and just before going to bed. The mixture is gently warmed over a very slow fire; the affected part (*e. g.*, he hand) is dipped in it while still cold, and held there until the liquid on being stirred eels uncomfortably hot. The vessel used must be of earthenware or porcelain, not of metal. Care should be taken not to use too great a quantity, especially when abrasions are present. Four or five applications are sufficient.

SUBSTITUTE FOR HOT WATER BOTTLES.

XIII. Is there any substitute for hot water bottles to apply to the sick to equalize and restore animal heat?

ANS.—Yes. Corn meal heated to the proper temperature and applied in woolen bags?

MOUNT HOLYOKE SEMINARY.

XIV. Is Mount Holyoke Seminary careful as to the health of the girls there, or does it turn out invalids?

ANS.—The Woman's Journal says: "After reading Mrs. Dall, Miss Brackett, Mrs. Goddard and the other women who have taken up the argument in behalf of the healthfulness of a higher education for their sex, and above all, the right of women to settle their own questions, Boston's Dr. Clarke must begin to feel that he was dogmatic without the right of full knowledge, that at least there are some things he did not think of when he wrote his 'Sex in Education.'" "If he had been at the Springfield station Tuesday night," says The Republican, "he would have seen a demonstration—could we call it a case of 'demonstrative anatomy?' —of the infirmity of his arguments. Such a lot of ruddy and robust girls as poured out of the northern train on their way from the Mount Holyoke Female Seminary to Thanksgiving keeping at home—not a pale face or fleshless form among them—gave abundant proof of the consistency of hard study and high health. They were only the advanced guard, too; the rest, save a lone fifteen who remain at school, got off Wednesday; and not one of the whole three hundred, probably, realizes the horrible dangers attending the thirst for knowledge."

CO-EDUCATION OF THE SEXES.

XV. Please tell us if the lady students of our colleges, when admitted with men, retain their health equal with the male students.

ANS.—Rev. C. H. Brigham, of Ann Arbor, Michigan, says of the lady students in Michigan University: "About eighty of the students are of the sex which some call 'weaker,' but which here at any rate is shown to be equal in endurance, in courage, in perseverance, in devotion to study and in cheerful confidence, to the strong and stalwart men. The health of the women who are here now is, in almost every instance, excellent. I am assured by intelligent ladies in all the departments that there is not a single instance of sickness which has come from over-study, or from any cause connected with the routine of the college life. In one or two cases the inconvenience of a weak constitution, of weak eyes and sensitive nerves, has been felt, and one of the most vigorous of the sisters has been confined to her chamber for some weeks by a sprained ankle. But it is the unanimous testimony, as I learn, of the ladies who are studying law and medicine, and science and the arts, in the class-rooms and lecture-rooms, and library and laboratory, that their health was never better, that they had no attacks of malady, and that they ask for no indulgence on account of their sex. Most of them, indeed, are out of their teens, and beyond the age to which the warnings of Dr. Clarke's book apply. But of the twenty or more whom I personally know, not one complains, and they look to be in better health than the average of young women. One of them, a Massachusetts lady, wrote a few weeks ago, in The Detroit Tribune. a long and incisive letter, logical in structure and clear in phrase, in which she effectually silenced the cavils and calumnies brought against her sex,

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that they are outraging nature and leaving their 'sphere,' in seeking to gain the higher education of men. Her facts were unanswerable. Indeed such is the enthusiasm of the lady-students here that they will not let matrimony interrupt their college course. A few evenings since one of the medical students was joined in wedlock to a young lady sophomore, and both intend to continue in their course of study, with only the short vacation for their honeymoon. Another lady-student, who was married in September to a gentleman in the western part of the state, has returned to her Greek and her metaphysics, and her husband has come with her. Students frequently have come here with their wives, but I do not remember that in any former year husbands and wives have been students together in the university.

"Some say that it is too soon to pronounce upon the success of the experiment of co-education here; but if the opinion of the women themselves and of the teachers who teach them is to be accepted, the experiment in the present season is as successful physically as it is intellectually. The women are strong and hearty to all appearance, and have not found their sex an obstacle to their activity and comfort in study.

TOILET SOAPS AND HEALTH.

XVI. Are all toilet soaps healthful if the fragrance is pleasant?

Ans.—No. Dr. Wetherbee says: "In the preparation of soaps for detergent or scouring purposes, the oils or fats are chosen mainly with a view to economy. The principal efficacy is in the alkali employed, and the fats are added only to modify the former, to prevent it from corroding or dissolving the tissues of the fabrics to be cleansed. Even for domestic use in the laundry and the kitchen, no prudent housewife would think of purchasing the finest old castile soap for scouring linen, or washing the table crockery and cutlery; but good 'family soap' meets all these requirements, provided it is cheap and removes the dirt without too much muscular exercise. Not so when she enters the bath or dressing-room; if she be a woman of refinement she requires a finer article, and, in most cases, if well perfumed, she is apt to take it for granted that it is emollient and wholesome. This is a mistake, for our market is flooded with so-called toilet soaps which, but for their perfume, would, from their impure and unwholesome quality, be almost unfit to remove stains of manual labor from the hands of the least fastidious plowboy.

"The mixed animal and vegetable fats which are gathered from our houses by the 'soap fat' man are, in many cases, transformed by the addition of an alkali and agreeable perfumery into expensive soaps for the toilet; while in many cases they are actually poisonous when used for the toilet by persons in health, rendering the skin rough and cracked, and often imparting that coarseness and redness which is so repugnant to those of delicate taste. In many skin diseases the attending physician finds his prescribed remedies of comparatively little avail, without understanding why; the fact being that the patient is daily applying a poison to the skin in the shape of soaps made with impure fats or oils. As a rule, soaps made only from pure vegetable oils are directed to be employed in medicine, and there is even a great difference in these. Much depends, too, on the manner of their saponification, when the object is to produce a soap which shall answer the double purpose of removing the impurities from the skin and at the same time leaving it white, soft, and not liable to crack or become rough. There should be only a slight excess of alkali, since a greater amount would render the soap caustic and corrosive; the vegetable oils employed should be thoroughly refined and perfectly free from rancidity; and if the soap be medicated, or perfumed with any foreign substances, these also should be selected with special care as to their healing properties. Many essential oils which are used to perfume soaps are of an acrid nature and unfit to be applied to the skin, even in the very minute proportions in which they are added; and other substances which in their primitive state are highly recommended for external use, are liable to become chemically changed by heat or other causes in incorporating them into soaps, so that they are inert, or even deleterious.

"Among the animal fats used in soap-making the following are among the most common in this country: Soap made from sperm oil is used for scouring wool and cotton, and retains the peculiar rank smell of the oil. Fish oil soap is somewhat similar, and cod liver, shark liver and skate liver oil soaps have a still more unpleasant smell, and less consistency. Suet or tallow soap is white and slightly odorous. Lard soap is white, inodorous, and is much used in making toilet soaps. Rancid butter soap is white, but retains a rancid smell. The soap fat of the kitchens often contains a portion of all these, to which may be added rancid olive oil from salads, etc., castor oil, or any other animal or vegetable fatty matter cast aside from the domestic establishment.

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"Of the vegetable oils used for soaps, one of) best and most common is olive oil. It is) oil used in castile soap. Sweet almond oil very desirable for soaps, but is less plenty an olive oil. The oils of rape seed, colza (or)bage seed), poppy seed, hemp seed, and oth- of like nature are extensively used in soaps. nseed oil soap is whitish, but soon becomes llow, greasy, pasty, viscous, and of a power- odor. The oils expressed from the beech- t, walnut and many other oily nuts are also ed for some purposes. Palm oil is now much ed, either alone or with other oils, in toilet aps; but, on account of its color, it requires rification and bleaching to render it fit for e. Castor oil soap is emollient, and used for e toilet. Croton oil is used in a soap for ca- artic and vesicating purposes, according as it administered internally or externally. When ve, sweet almond or other oils are saponified th ammonia they are called liniments. Some her animal and vegetable fats and oils are itable for making soaps, though not as uni- rsally employed for the purpose as those hich we have mentioned. As the alkalies in aps are principally potash and soda, nothing ed here be said of them, except that the lat- r is milder and forms hard soaps, while the her is the ingredient in most of the soft aps.

"The perfumes are selected mainly to please ie sense of smell, and are numerous. For the edication of soaps glycerine has been much nployed during the last few years, and its emol- ent properties are well known. Camphor is in- rporated into soaps intended for chapped hands, vellings, etc, where the use of camphor is indi- ated. Carbolic acid soap is extremely useful for eansing foul ulcers, and as a disinfecting de- rgent generally. It is very frequently used the dissecting-room. Oil of cade, which is btained from a species of juniper growing in ie south of France, is one of the ingredients f a kind of soap introduced into medical prac- ce a few years since, and recommended in all ases where it is advisable to use the officinal ar ointment. Purified pine tar soap is also rowing into favor with physicans in all the arious skin diseases to which tar was for- erly applied. Ointments have to a certain egree been discarded by physicians of the resent day, when the remedial agent, of which he lard or cerate is only the vehicle, can be pplied as effectively in any other way, and ence these medicated soaps have become pop- lar. They are a much more agreeable and leanly vehicle than the greasy matter of oint- ments, and do not close the pores of the skin and check the passage of the perspiration; but, on the contrary, remove the accumulated im- purities from the surface, instead of adding to them."

MONTHLY HEADACHES.

XVII. Can monthly headaches, that are in- herited, be cured?

ANS.—In a majority of cases they can be cured, or greatly mitigated. It must be by correct eating habits, plenty of sleep, plenty of judicious exercise, and freedom from excite- ment and overtaxing the brain and nerves. Alas! how few are willing to be cured in this way; so they suffer and endure.

NUMBNESS.

XVIII. Please state what is most likely to prevent or alleviate numbness in the hands, as though asleep?

ANS.—Electricity and exercise are probably the best remedies.

INHERITED CONSTIPATION.

XIX. What is the best cure for inherited and chronic constipation?

ANS.—Plenty of good brown bread and fruit, as part of the diet, together with abundant ju- dicious exercise. Many are cured by exercise alone. Sedentary people take note of this.

EFFECTS OF ALTITUDE.

XX. How does high altitude affect the hu- man system?

ANS.—A recent book of travels in Asia, by Dr. Henderson, contains an interesting state- ment of his experience on high altitudes. A few days out from Lé they had to cross a pass, the Chang-la, 18,000 feet high. In so doing almost every one suffered from the rarity of the atmosphere; in one case the pulse went up to 100, the respirations to twenty-two per minute. Some complained of a feeling of suffocation, and could not sleep; but a few deep inspirations relieved this feeling. Intense headache was complained of, with great prostration of mind and body, the temper became irritable, and there was most distressing nausea. In some the lips became blue, and in another case the temperature, as indicated by the thermometer, sank one or two degrees. Such is the exceed- ingly interesting account given of the effects of great rarification of the atmosphere by Dr. Henderson. We may mention that here the barometer stood at 15.73, the thermometer at 61° Farenheit, and water boiled at 181° Faren- heit.

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

SHE DIED OF THIN SHOES.

The world's full of beauty,
And young and gay hearts
Beat gladly with rapture,
O'ercome by its arts;
We value the weapons
That conquerors use,
And ply to some purpose
Those graceful thin shoes.

The face may be pretty,
Form faultless and fair,
The eye deep and lustrous,
And glossy the hair;
Each grace may be perfect,
Just what we would choose,
Provided the walkers
Are clad in thin shoes.

'Tis right to help Nature
In what she bestows,
Place charms to advantage
With toilet and clothes;
Yet there s one caution
We should not abuse,
There often is danger
In wearing thin shoes.

Ah! thousands have perished,
As roses in bloom
Are plucked in their freshness,
And wealth of perfume;
And could their bright spirits
Our vain hearts infuse,
They'd whisper their warning
Against those thin shoes.

The doctor and preacher
Their reasons assign,
They talk of diseases
Or wisdom divine;
And so the poor sculptor
We can but excuse,
Who leaves out the sentence,
"She died of thin shoes!"

A. J. Eidson, M. D.

CRADLE SONG.

All the world is slumbering now,
None awake but only thou.
'Tis the wind is sighing drear;
Lie thee still and sleep, my dear!

Close up these two eyes so bright,
Close them up like buds at night;
When the morning sun shall glow,
Like the flowers they will blow.

I shall see those flowers fine,
I shall kiss these eyes of thine,
'Tis the same to mother then,
As if Spring were come again,

W. W. Newell.

MAKE THE BEST OF LIFE.

What's the use of always fretting
Over ills that can't be cured?
What's the use of finding fault with
What we know must be endured?

Does it make life's burdens lighter
If we grumble 'neath their load?
Does it make life's athway smoother
If we fret about the road?

Better *use* our time than fill it
Full of sighs and vain regrets
Over some imagined blunder,
As does he who always frets.

Storms will follow every sunshine,
Grief be mixed with every joy;
And 'tis best that it should be so,
Gold's too soft without alloy.

"Half our trouble's our invention,"
We're to blame for half our strife;
Then if life is what we make it,
Why not make the best of life?

The British Workman.

TEN THOUSAND A YEAR.

[We present the following bit of philosophy to our feverish wealth hunters, who sacrifice every good of life to their mad desire for sudden fortune. It is from a London comic paper.]

If I had ten thousand a year
I think I could manage to spend it,
Could squander the half, very near,
And, as for the rest—I could lend it.

Could squander the half, I should say,
On folly, on vice, and on sorrow,
On dreary debauches to-day,
Repentance and headache to-morrow.

Could purchase with half of my wealth,
Or less, if I cared to diminish,
Bad morals, bad conscience, bad health,
And a bad-ish look-out at the finish.

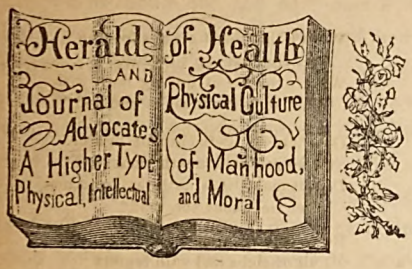
And the rest of my gold I could lend
The friend who in want had stood by me,
And lose both my money and friend—
For thenceforward forever he'd shy me.

If I had ten thousand a year,
The sentiment *may* seem clap-trappy,
I'm blest if I think it's so clear,
I should not be sick and unhappy.

At present I've friends—very dear—
Health and comfort, as long as I'm thrifty:
So I don't want ten thousand a year,
I'm content with my hundred and fifty.

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EDITORIAL DEPARTMENT.



NEW YORK, MARCH, 1874.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

☞ The Publishers *do not hold themselves as indorsing every article which may appear in* The Herald. *They will allow the largest liberty of expression, believing that by so doing this magazine will prove to be more useful and acceptable to its patrons.*

☞ *Exchanges are at liberty to copy from this magazine giving due credit to* The Herald of Health and Journal of Physical Culture.

TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

The New Temperance Movement.—Our good friend Dr. Dio Lewis has been stirring up the people of southern Ohio in a most wonderful way. In a lecture recently delivered in Hillsboro, we think, he found a soil where his favorite idea for suppressing the sale of intoxicating drinks took root and grew and spread, and is spreading, so that a quarter, if not a half, of the State is in a fever heat, and no one can tell where it will stop. We only hope it will go on for at least ten years, and we are fearful this is not long enough time to wipe out the demon intemperance from our otherwise fair land. Drink, that curse of curses, is to-day one of the darkest stains upon our civilization. It keeps back progress more by far than ignorance. It is the cause of more crime, poverty and licentiousness than all other causes put together.

"Drink! and speak parrot and squabble! swagger! swear! and discourse fustian with ones own shadow. O, thou invisible spirit of wine, if thou hast no name to be known by let us call thee devil," is just as true now as in Shakespeare's time. It is time there was a great awakening on the subject. And what is the new movement inaugurated by Dr. Lewis? It is not altogether a new one. It has been tried before. In a small way it has succeeded admirably more than once. It is the direct application of moral force by women, instead of the old feeble application of physical force by man, to the suppression of evil. We do not underrate physical force. Applied to material things moral force bears no comparison with it. How could moral force ever build steamships railroads, cities, subdue the wilderness and make the desert to blossom? How could moral force ever affect the amount of heat and cold, rain and sunshine, frost and snow? An ounce of physical power here is worth more than tons of moral force, if it could be so measured. But in the realm of mind moral force far outweighs physical. And what is the peculiar form of moral force that is exciting so much interest in southern Ohio, and challenging the attention of the world? It is a praying and singing band of women, numbering from thirty to four hundred, going from bar-room to bar-room, liquor saloon to liquor saloon. They do not pray so much to God as they do to the liquor dealers themselves. They try to create in the liquor den, the hell-hole, an atmosphere of aspiration for purity, holiness, health. They breathe forth with great earnestness their strongest desires for the attainment of their object. If done as it should be done what man, nay, what incarnate fiend can resist the prayers and en-

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treaties of a band of sober women bent on so grand an achievement? What liquor seller would not wince under the song of one hundred women conveying sentiments of tenderness and love, and filling the air with sweetness and melody where before had been only the cursed oath, the bitter jibe, the low, vulgar ribaldry. It would be like letting sunshine in where darkness and filth had reigned. How the slimy creatures hid there do run, when the light shines in upon them, to hide themselves.

For one we hail this new movement as a token of a better day. We bid the women engaged in it God speed. They should be crowned with laurels for their great bravery; for it is a braver thing for them to do than for a man to face the cannon's mouth in battle. We only beg of them to hold their efforts high; to refuse to degrade the movement by any evil word or deed. They are using moral forces on human creatures for moral ends. Let them go in sweetness, purity and love to the dens of sin, and there is nothing can withstand them. Let them go in anger and hate, and resort to physical force and their efforts will avail nothing.

In conclusion we will add that we wish the women of New York city would copy the example of their sisters in the west, and root out the greatest curse of our great metropolis, the traffic and consumption of intoxicating drinks.

Danger of Caring only for One Profession.—A great lawyer, or engineer, or architect, or medical man, or manufacturer, or merchant, is often, perhaps generally, in some danger of getting to care for nothing beyond his profession. To my mind that is a mistake, and it is a mistake which brings its own punishment. Mr. Mill, in a late work, mentions incidentally certain persons who, knowing nothing except political economy, necessarily, as he says, knew that but ill; and I believe the generalization is a true one. Apart from that, however, success in business is very well; but when you have succeeded, what then? It is a poor choice either to have to go on working without necessity or advantage, merely because you have no taste or pleasure left in life, or else to make the hazardous experiment of passing from an existence intensely occupied to one of utter vacuity. Here it is that literary culture will be really of use. Put it at the lowest, a man who has the habit of reading, to whom his books are the best company, finds in them a distraction from anxiety, a comfort in petty troubles, a protection against weariness and *ennui*, a society which he can take up when he will, and leave without giving offence; and, above all, an escape from the vulgar interests and mean details of private life, into the healthier air of thought and ideas which concern mankind in general.—*Lord Derby.*

Over-eating — Scientific Cooking.—Turgot could not work well till after he had dined copiously, but many men cannot think after a substantial meal; and here, in spite of the example set by Scott and Goethe, let us observe, that nothing interferes so much with brain work as over-eating. The intellectual workman requires nourishment of the best possible quality, but the quantity ought always to be well within the capacity of his digestive powers. The truth appears to be, that while the intellectual life makes very large demands upon nutrition—for cerebral activity cannot go forward without constant supplies of force, which must come ultimately from what we have eaten—this kind of life being sedentary, is unfavorable to the work of digestion. Brain workers cannot eat like sportsmen and farmers without losing many hours in torpor, and yet they need nutrition as much as if they led active lives. The only way out of this difficulty is to take care that the food is good enough for a moderate quantity of it to maintain the physical and mental powers. The importance of scientific cookery can hardly be exaggerated. Intellectual labor is, in its origin, as dependent upon the art of cookery as the dissemination of its results is dependent upon paper-making and printing. This is one of those matters which people cannot be brought to consider seriously; but cookery in its perfection—the great science

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preparing food in the way best suited to our —is really the most important of all sciences, l the mother of the arts. The wonderful the- that the most ignorant cookery is the most orable to health, is only fit for the dark s. It is grossly and stupidly untrue. A ntific cook will keep you in regular health, en an ignorant one will offer you the daily ernative of starving or indigestion.

Treatment of Spinal Curvature. — nong civilized peoples curvatures of the spine becoming common. They are especially valent in the United States of America. ere are two principal varieties, the forward rvature and the sideways curvature. The ward curvature is seen in stooping should- , and the sideways curvature in a sideways nding of the trunk. Of a hundred cases of cided curvature, ninety-nine belong to the rward class and one to the sideways class.

Every case of curvature of the spine is more less dependent upon muscular weakness. enerally a lack of muscle is the cause of the formity.

The spine is like the mast of a ship, held in sition by stays. Cut away the ropes and e mast will soon give way. The mast has power to support itself, so the spine has no wer to support itself; it must be kept in po- ion by the muscles.

A large majority of cases of spinal curvature nong grown people may be remedied, and I ed not say that every case, when cured, is ired by developing the muscles. It is with e spine as with a mast. When a mast is und leaning to one side the ropes must be rengthened on the weak side. So when a ine is found bent it can only be straightened y strengthening the muscles on the weak side.

The people do not know about this dependence of e spine upon the muscles, and certain enterpris- g medical men, taking advantage of this norance, have introduced various mechanical ntrivances for pressing against the projecting ortion of the ribs, and drawing back the oulders. These contrivances they have sold in immense numbers, at immense prices. All this waste in money might be borne, but the injury to those who have worn the machinery is incalculable. Not only are they not improved in form, but the apparatus prevents the play of the muscles, and the real difficulty is thereby increased. It requires but little thought to comprehend the uselessness and inevitable mischief of an apparatus which is put around the chest and so tightened that any considerable pressure is made upon the prominent point. If ten pounds pressure be made upon the projecting point, just ten pounds pressure must be made on the opposite side of the chest; and although the pressure on the opposite side may be disturbed, it must compress the chest sadly, and arrest the growth of the muscles, to say nothing of the sad interference with respiration and other vital functions.

Stevens tells us of an attempt by a company of Arabs to draw a large stick of timber out of the water. It required one hundred men to pull it out. First, ten men would take hold and pull awhile, then ten others, and so on. After an hour's pulling in this way, they gave it up as impracticable. This illustrates a principle which is seen in the treatment of a curvature of the spine by pressure. This young woman had a straight spine four years ago. The muscles were weak. The curvature began. Nature resisted. It was comparatively easy to resist then, when the spine was nearly straight. But the mischief would go on. Nature loses her advantage. Her power of resistance becomes less and less, and the deformity is at length painfully obvious. To speak quite within bounds, it is now twenty times more difficult for nature to correct this fault than it was just after it began. *Now*, a pressure which is quite hard enough to check the circulation in the muscles, but which produces no effect whatever upon the bony deformity, is kept up month after month, perhaps day and night.

The people not knowing that the position of the spine depends entirely upon the strength of the muscles, are readily caught with the notion that the way to cure a lateral curvature, for

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instance, is to apply pressure to the projecting ribs. They don't see that the pressure on one side must be exactly equalled by pressure on the other. In other words, that in order to produce five or ten pounds pressure on the projecting ribs the chest must be ruinously squeezed. Thousands have been crippled and spoiled by this absurd pressure, and I have never known a case cured by it.

The people do not see that in order to straighten the spine by pressure it must be ten times as great as it is possible to make it, and leave the breath of life in the poor victim.

The only really effective treatment is *exercise*. The best exercise is found in carrying a weight upon top of the head. This weight may be the graduated iron crown ; or, if you please, simply a bag of beans. The weight should be considerable. For a girl it may range from ten to eighty pounds. By carrying the weight with the chin drawn in close to the neck and the spine quite erect, more will be done to cultivate the muscles which hold the spine erect, in half an hour, than by any calisthenic, or other similar exercise, would be accomplished in a dozen half-hours. If the spinal curvature is lateral, it is well to have the hand on the defective side carried constantly up on the weight to steady it. This position of the arm on the defective side straightens the spine for the time being, and thus contributes to that change in the intervertebral substance which must be accomplished before the spinal column can resume its natural position; besides, in this position the muscles develop much more rapidly.

Shoulder braces have been much advised. I suppose that a million pairs of shoulder braces are yearly sold in this country. If they hold the shoulders back, and thus dispense with the muscles which should keep the shoulders in position, they are about as likely to improve the muscles appointed to perform the task as a sling about the neck, which carries the arm, is likly to improve the muscles of the arm. The weight on the head is the best treatment for stooping neck and shoulders. As much as you can carry on the head, half an hour in the morning and half an hour in the evening, will soon give you an erect posture and make you walk like a very queen.—*Dio Lewis.*

Death of Agassiz.—When Agassiz died one of the brightest lights of science went out. As an investigator he had in America no equal, as a teacher he was higher than the highest, as a popular lecturer on science he outshone all his co-laborers. His face was the most genial, kindly, humane one we ever saw. His physique was magnificent, his brain a tremendous force. He was magnetic. He kindled his auditors; his enthusiasm spread like a fire. He has done more for science in America than any other man. It is a pity he died so early. With his vitality a hundred years should have been reached; but he saw so much to do that he undertook too much. He was a victim of overwork. Nature, whom he loved, would not spare even him. He has done a great work; but the greatest is the impulse he has given to the study of natural science. It will bear rich fruit in ages yet to come. His death ought to warn great workers that after fifty they should not assume burdens that they might easily carry at forty. No living being should fail to husband his resources after the golden decade of life is passed.

Wanted.—A gentleman from Santa Barbara writes us that a hygienic institute is wanted at Santa Barbara, California. He says:

"Another most important advantage now offered by Santa Barbara is that the place is already established as a resort for invalids. It is connected with San Francisco by daily stages and ocean steamers; and every week brings in numbers of invalids seeking health, and semi-invalids seeking recuperation and repose.

The winter months, when cold winds and snow prevail throughout the states of the northwest, are the season when Santa Barbara is most eagerly sought. During last winter the three hotels and several large boarding-houses of the town were unable to accommodate the guests who poured in upon them from all parts

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the United States, and the inhabitants were iged, in common hospitality, to throw open ir houses to boarders. Even then it was not frequent for large numbers of people to leave town, unable to obtain a lodging place. is season we have made ample preparations the reception of our winter's visitors, and re is a still greater number with us. A gienic physician coming here now to establish ygienic institution would commence without mpetition, and would be welcomed by large mbers of invalids. The attractions of the ot are such that no inferior physician can long ld the field; but there is a fortune, and ere are the blessings of good done, for him ose capacities shall warrant his success.

"I am conscious that my statements are subct to the charge of partiality, since I am a sident of Santa Barbara, and a believer in the ygienic treatment of disease; but I have no sire further than to attract the attention of hysicians to the place. Abundant and disinrested testimony can be obtained by those inrested in finding it. HYGIENIST."

WHAT LORD DERBY SAYS.—Without a ormal healthy condition there can, as a rule, e no good work; and though that qualification annot absolutely be secured or preserved by ny rules, a little common sense and care will o a long way both in securing and preserving t. On that point I would give you these ints: First, that it is not mental labor which urts anybody, unless the excess be very great, ut rather fretting and fidgeting over the prospect of labor to be gone through; so that the man who can accustom himself to take things coolly—which is quite as much a matter of discipline as of nature—and who, by keeping well beforehand with what he has to do, avoids undue hurry and nervous excitement, has a great advantage over one who follows a different practice.

Next, I would warn you that those students who think they have not time for bodily exercise will, sooner or later, have to find time for illness. Thirdly, where an opportunity of choice is given, morning work is generally better than night work; and, lastly—a matter which I should not stop to allude to but that I know the dangers of an over-driven existence in a crowded town—if a man cannot get through his day's labor, of whatever kind it may be, without artificial support, it should be a serious consideration for him whether that kind of labor is fit for him at all.

A NEW IDEA.—One of the most difficult things to do in any city is to secure perfect cleanliness of the streets. We have a new notion to try in this particular. We want appointed a set of women inspectors to oversee the work—would not object even to having one or two women as contractors to do the work. Men generally do not have so good a sense of cleanliness as women do. We should like Quaker women on the board, if there are enough of them to go round. We venture to say that if the street cleaning contractor in New York was a Quaker housekeeper, the streets would shine as they do in Central Park.

VENTILATION.—We maintain that ventilation is the great and main necessity of house-building; and that whatever else may be left undone this should be attended to, and whatever else may be left imperfect this should be made perfect and complete; and that it should include the whole house, and should be self-acting and inexpensive.

THE CARE OF GIRLS' HEALTH.—I am very sure that young women require for their physical well-being peculiar care—far more care than is needed by boys. And inasmuch as our school committees are almost always men, and as the head of a high school or academy is usually a man, and often a young and inexperienced man, it is a perfectly true assertion that our public school system brings peculiar injury to girls. It hurts boys also; but, as I found out, boys easily recover from such injury, compared with girls. A boy can seldom

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so hurt himself by study that a few months of vigorous out-door life will not cure him. A girl may easily so impair her whole system that the regimen of vigorous out-door life is put beyond her reach, or is dangerous if applied.

I have been talking, within two hours, with a young girl of seventeen, whose health was utterly prostrated at a high school by habitually sitting up till two or three in the morning to study Latin. She had no mother to restrain her—her elder sister could not, or did not—the principal of the school was a young man, and so was the superintendent of schools. All the school stimulus was ignorantly brought to bear upon her, and here she is, at seventeen with ruined health, obliged to support herself, but utterly unfit to it. Now a boy might have suffered as she has, from equal excesses, but he would have been less likely to commit them; and if he had done so he would have recovered far more easily. The comparative fragility of the health of girls, in America at least, is something which we have no right to ignore. The results depending on it are too important.

On the other hand, I hold the mental and moral influences of joint education too important to be sacrificed; nor do I see the need of it. I should not accept the hasty inference that girls must be sent to separate schools, where, by Dr. Clarke's own showing, the pressure may also be too great. My remedy would be the shortening of the hours of our public schools for all, and the introduction of a more flexible system, which shall insist more upon the actual results of knowledge, as tested by frequent examinations, than on mere regularity of attendance and daily precision of lessons. I would have school committees tell us more in their reports of the physical well-being of the pupils, tell us whether they have plenty of recess time, a piano, a dancing-hall, a gymnasium and a croquet ground; instead of reasoning as if the whole school were a machine, and the only object were to extract from the pupils an average attendance of ninety-five per cent. As one means to this end I would have women on every school committee, instead of leaving the whole business of school regulation to men, and then wondering that it is not well adapted to young women.—*T. W. Higginson.*

A Bright Idea.—We are informed that a gentleman in Virginia has hit upon a new idea for smokers. He proposes, in all large cities, to have the tobacco smoke manufactured and purified in some central depot, and conveyed as gas now is to the houses of the city. Smoking pipes are to be attached, and smokers are to help themselves. What will people who live in the country do, confined to the old-fashioned cigar?

Anger's Method of Making Gems.—*To the Editor.*—By your special request I will here state my experience in regard to the method of making the Graham gems. The flour is the principal ingredient, and on it depends chiefly the success of the baker; it must necessarily be of the very best kind, made of the best winter wheat, and be possessed of the qualities, commonly known as "dry and strong." The treatment varies according to the qualities of the flour. If the flour is of the kind described above the dough can be baked immediately; but if the flour be moist the dough must be allowed to stand in a warm place for at least four hours, in order to obtain a palatable article. The German hygienists allow the dough for their unleavened bread to stand six hours, in every case; this is, however, unnecessary, provided the flour is of good quality. The next in order is a good baking oven, one that is capable of baking equally as well from the top as from the bottom; it is difficult to state the exact amount of heating required, as some ovens are more easily heated than others; suffice it to say that a quick oven is necessary, and that the glaring heat, which always accompanies a freshly-heated oven, be allowed to pass away before baking the gems, as they are very apt to blister on the top, especially the water gems. In mixing the dough take blood-warm milk or water, adding the flour and beating thoroughly for at least five minutes. It is better to retain some of the

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milk or water one intends to use, making the dough slightly thicker, beat it well, and then add the remaining milk. By this method the dough becomes more thoroughly mixed, and is entirely freed of the small lumps that are so difficult to get rid of. If milk is used, make the dough thick enough, so that it can be spooned out comfortably; but for water gems it must be made somewhat thicker.

The pans used in baking the gems are of oval shape, measuring 2½ by 1½ inches; eight of these unite in making one pan; there are also some pans made of tin, but as the cast iron pan retains the heat longer it is the best.

If the dough is ready and the oven heated, then put some of the pans in the oven and allow them to become quite hot; take one out, grease it with a clean rag dipped in butter, and drop the dough in the pan with a large spoon; return the pan quickly to the oven. If the pan is too hot, so that when greased the butter is burned, allow it to cool before using it, as the gems will be apt to stick to the pan and be burned. After eight or ten minutes they must be looked after, and if they are getting too brown must be put in a cooler place and allowed to bake for another ten or fifteen minutes more. They ought not to be taken out before they are thoroughly baked, as they will become wet and doughy if taken out too soon, and no amount of after baking can undo this. They may be eaten hot with impunity, a quality not possessed by any other form of bread. L. F. J. ANGER.

[We can testify from personal knowledge that Mr. Anger's gems are unsurpassed in delicacy and perfection by any we have ever tasted.—ED.]

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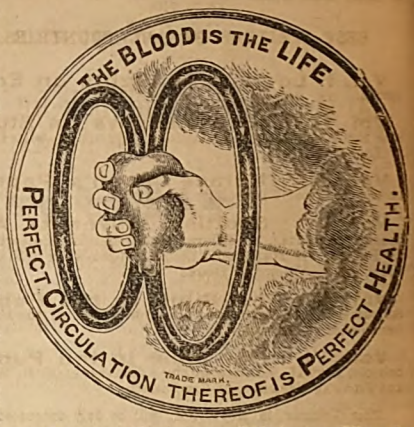
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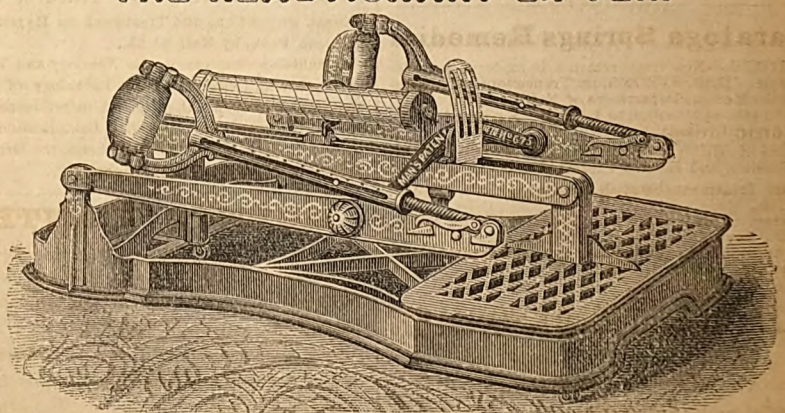
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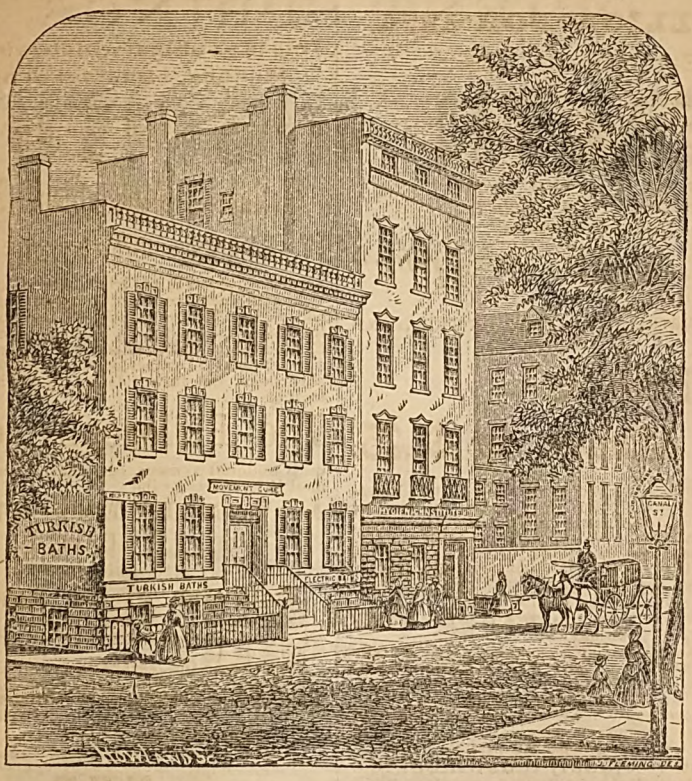
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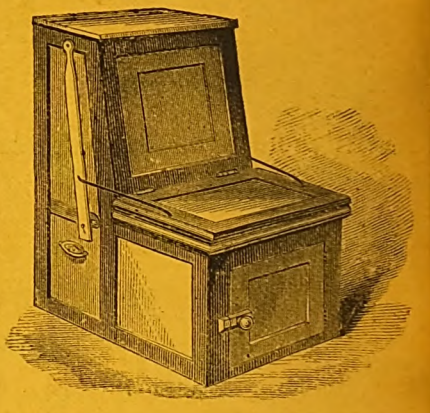
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OL. 23, No. 4.] NEW YORK, APRIL, 1874. [NEW SERIES.

PUBLISHED MONTHLY BY WOOD & HOLBROOK, 13 & 15 LAIGHT STREET.

ESSAYS ON SANITARY AND SOCIAL SCIENCE.

(Number 4.)

Remarkable Phenomena Relating to the Human Body—Notes of an Inquiry into the Phenomena called Spiritual.

BY WILLIAM CROOKES, F. R. S.*

LIKE a traveler exploring some distant country, the wonders of which have hitherto been known only through reports and rumors of a vague or distorted character, so for four years have I been occupied in pushing an inquiry into a territory of natural knowledge which offers almost virgin soil to a scientific man. As the traveler sees in the natural phenomena he may witness the action of forces governed by natural laws, where others see only the capricious intervention of offended gods, so have I endeavored to trace the operation of natural laws and forces where others have seen only the agency of supernatural beings, owning no laws and obeying no force but their own free will. As the traveler in his wanderings is entirely dependent on the good will and friendliness of the chiefs and the medicine men of the tribes amongst whom he sojourns, so have I not only been aided in my inquiry in a marked degree by some of those who possess the peculiar powers I have sought to examine, but have also formed firm and valued friendships amongst many of the recognized leaders of opinion whose hospitalities I have shared. As the traveler sometimes sends home, when opportunity offers, a brief record of progress, which record being necessarily isolated from all that has led up to it, is often received with disbelief or ridicule, so have I on two occasions selected and published what seemed to be a few striking and definite *facts;* but having omitted to describe the preliminary stages necessary to lead the public mind up to an ap-

* William Crookes, F. R. S., has for years been investigating those phenomena called spiritual, connected with some human bodies, from a scientific standpoint. He is well known to the scientific world as the Editor of the London Quarterly Journal of Science, and also of a monthly Journal called The Chemical News, both high authority in the sphere to which they belong. Mr. Crookes reserves his conclusions as to the source of these phenomena for a future article. His statements are more marvelous than the wildest flights of the imagination. We trust they will interest our readers.

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preciation of the phenomena, and to show how they fitted into other observed facts, they were also met, not only with incredulity, but with no little abuse. And, lastly, as the traveler, when his exploration is finished and he returns to his old associates, collects together all his scattered notes, tabulates them and puts them in order ready to be given to the world as a connected narrative, so have I, on reaching this stage of the inquiry, arranged and put together all my disconnected observations ready to place before the public in the form of a volume.

The phenomena I am prepared to attest are so extraordinary, and so directly oppose the most firmly rooted articles of scientific belief—amongst others the ubiquity and invariable action of the law of gravitation—that even now, on recalling the details of what I witnessed, there is an antagonism in my mind between *reason*, which pronounces it to be scientifically impossible, and the consciousness that my senses, both of touch and sight—and these corroborated as they were by the senses of all who were present—are not lying witnesses when they testify against my preconceptions.*

But the supposition that there is a sort of mania or delusion which suddenly attacks a whole roomful of intelligent persons, who are quite sane elsewhere, and that they all concur to the minutest particulars in the details of the occurrences of which they suppose themselves to be witnesses, seems to my mind more incredible than even the facts they attest.

The subject is far more difficult and extensive than it appears. Four years ago I intended only to devote a leisure month or two to ascertain whether certain marvelous occurrences I had heard about would stand the test of close scrutiny. Having, however, soon arrived at the same conclusion as, I may say, every impartial inquirer, that there was "something in it," I could not, as a student of nature's laws, refuse to follow the inquiry wheresoever the facts might lead. Thus a few months have grown into a few years, and were my time at my own disposal it would probably extend still longer. But other matters of scientific and practical interest demand my present attention, and inasmuch as I cannot afford the time requisite to follow the inquiry as it deserves, and as I am fully confident it will be studied by scientific men a few years hence, and as my opportunities are not now as good as they were some time ago, when Mr. D. D. Home was in good health, and Miss Kate Fox (now Mrs. Jencken) was free from domestic and maternal occupations, I feel compelled to suspend further investigation for the present.

To obtain free access to some persons abundantly endowed with the power I am experimenting upon, now involves more favor than a scientific investigator should be expected to make of it. Spiritualism amongst its more devout followers is a religion. The mediums, in many cases young members of the family, are guarded with a seclusion and jealousy which an outsider can penetrate with difficulty. Being earnest and conscientious believers in the truth of certain doctrines which they hold to be substantiated by what appear to them to be miraculous occurrences, they seem to hold the presence of scientific investigation as a profanation of the shrine. As a personal favor, I have more than once been allowed to be present at meetings that presented rather the form of a religious ceremony than of a spiritualistic *séance*. But to be admitted by favor once or twice, as a stranger might be allowed to witness the Eleusinian mysteries, or a Gentile to peep within the Holy of Holies, is not the way to ascertain facts and discover laws. To gratify curiosity is one thing, to carry on systematic research is another. I am seeking the truth continually. On a few occasions, indeed, I have been allowed to apply tests and impose conditions; but only once or twice have I been permitted to carry off the priestess from her shrine, and in my own house, surrounded by my own friends, to enjoy opportunities of testing the phenomena I had witnessed elsewhere under less conclusive conditions.† My observations on these cases

* The following remarks are so appropriate that I cannot forbear quoting them. They occur in a private letter from an old friend, to whom I had sent an account of some of these occurrences. The high position which he holds in the scientific world renders doubly valuable any opinion he expresses on the mental tendencies of scientific men. "Any *intellectual* reply to your facts I cannot see. Yet it is a curious fact that even I, with all my tendency and desire to believe spiritualistically, and with all my faith in your power of observing and your thorough truthfulness, feel as if I wanted to see for myself; and it is quite painful to me to think how much more proof I want. Painful, I say, because I see that it is not reason which convinces a man, unless a fact is repeated so frequently that the impression becomes like a habit of mind, an old acquaintance, a thing known so long that it cannot be doubted. This is a curious phase of man's mind, and it is remarkably strong in scientific men—stronger than in others, I think. For this reason we must not always call a man dishonest because he does not yield to evidence for a long time. The old wall of belief must be broken down by much battering."

† In this paper I give no instances and use no arguments drawn from these exceptional cases. Without this explanation it might be thought that the immense number of facts I have accumulated were principally ob-

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ill find their due place in the work I am about publish.

Following the plan adopted on previous oc-sions—a plan which, however much it of-nded the prejudices of some critics, I have ood reason to know was acceptable to the read-s of The Quarterly Journal of Science—I in-nded to embody the results of my labor in the rm of one or two articles for this journal. owever, on going over my notes, I find such wealth of facts, such a superabundance of vidence, so overwhelming a mass of testimony, ll of which will have to be marshaled in or-r, that I could fill several numbers of the uarterly. I must, therefore, be content on is occasion with an outline only of my labors, aving proofs and full details to another oc-sion.

My principal object will be to place on rec-rd a series of actual occurrences which have aken place in my own house, in the presence f trustworthy witnesses, and under as strict est conditions as I could devise. Every fact hich I have observed is, moreover, corrobo-ated by the records of independent observers t other times and places. It will be seen that he facts are of the most astounding character, nd seem utterly irreconcilable with all known heories of modern science. Having satisfied myself of their *truth*, it would be moral cow-rdice to withhold my testimony because my revious publications were ridiculed by critics nd others who knew nothing whatever of the ubject, and who were too prejudiced to see nd judge for themselves whether or not there as truth in the phenomena; I shall state imply what I have seen and proved by repeat-d experiment and test, and "I have yet to arn that it is irrational to endeavor to discover he causes of unexplained phenomena."

At the commencement, I must correct one or wo errors which have taken firm possession of he public mind. One is that *darkness* is essen-ial to the phenomena. This is by no means he case. Except where darkness has been a ecessary condition, as with some of the phe-omena of luminous appearances, and in a few ther instances, everything recorded has taken lace *in the light*. In the few cases where the henomena noted have occurred in darkness I have been very particular to mention the fact; noreover, some special reason can be shown for he exclusion of light, or the results have been produced under such perfect test conditions that the suppression of one of the senses has not really weakened the evidence.

Another common error is that the occurrence can be witnessed only at certain times and places—in the rooms of the medium, or at hours previously arranged; and arguing from this erroneous supposition, an analogy has been insisted on between the phenomena called spiritual and the feats of legerdemain by professional "conjurers" and "wizards," exhibited on their own platform and surrounded by all the appliances of their art.

To show how far this is from the truth I need only say that, with very few exceptions, the many hundreds of facts I am prepared to attest—facts which to imitate by known mechanical or physical means would baffle the skill of a Houdin, a Bosco, or an Anderson, backed with all the resources of elaborate machinery and the practice of years—have all taken place in my own house, at times appointed by myself, and under circumstances which absolutely precluded the employment of the very simplest instrumental aids.

A third error is that the medium must select his own circle of friends and associates at a *séance;* that these friends must be thorough believers in the truth of whatever doctrine the medium enunciates; and that *conditions* are imposed on any person present of an investigating turn of mind, which entirely preclude accurate observation, and facilitate trickery and deception. In reply to this I can state that (with the exception of the very few cases to which I have alluded in a previous paragraph, where, whatever might have been the motive for exclusiveness, it certainly was not the vailing of deception) I have chosen my own circle of friends, have introduced any hard-headed unbeliever whom I pleased, and have generally imposed my own terms, which have been carefully chosen to prevent the possibility of fraud. Having gradually ascertained some of the conditions which facilitate the occurrence of the phenomena, my modes of conducting these inquiries have generally been attended with equal, and, indeed, in most cases, with more success than on other occasions, where, through mistaken notions of the importance of certain trifling observances, the conditions imposed might render less easy the detection of fraud.

I have said that darkness is not essential. It is, however, a well ascertained fact that when the force is weak a bright light exerts an interfering action on some of the phenomena. The power possessed by Mr. Home is sufficiently

ained on the few occasions here referred to, and the objection would naturally arise of insufficiency of scrutiny rom want of time.

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strong to withstand this antagonistic influence, consequently he always objects to darkness at his *séances*. Indeed, except on two occasions, when for some particular experiments of my own light was excluded, everything which I have witnessed with him has taken place in the light. I have had many opportunities of testing the action of light of different sources and colors, such as sun-light, diffused day-light, moon-light, gas, lamp, and candle-light, electric-light from a vacuum tube, homogeneous yellow light, etc. The interfering rays appear to be those at the extreme end of the spectrum.

I now proceed to classify some of the phenomena which have come under my notice, proceeding from the simple to the more complex, and briefly giving under each heading an outline of some of the evidence I am prepared to bring forward. My readers will remember that, with the exception of cases specially mentioned, the occurrences have taken place in my own house, *in the light*, and with only private friends present besides the medium. In the contemplated volume I propose to give in full detail the tests and precautions adopted on each occasion, with names of witnesses. I only briefly allude to them in this article.

CLASS I.

The Movement of Heavy Bodies with Contact, but without Mechanical Exertion.

This is one of the simplest forms of the phenomena observed. It varies in degree from a quivering or vibration of the room and its contents to the actual rising into the air of a heavy body when the hand is placed on it. The retort is obvious, that if people are touching a thing when it moves, they push it, or pull it, or lift it; I have proved experimentally that this is not the case in numerous instances, but as a matter of evidence I attach little importance to this class of phenomena by itself, and only mention them as a preliminary to other movements of the same kind, but without contact.

These movements (and indeed I may say the same of every kind of phenomena), are generally preceded by a peculiar cold air, sometimes amounting to a decided wind. I have had sheets of paper blown about by it, and a thermometer lowered several degrees. On some occasions, which I will subsequently give more in detail, I have not detected any actual movement of the air, but the cold has been so intense that I could only compare it to that felt when the hand has been within a few inches of frozen mercury.

CLASS II.

The Phenomena of Percussive and other Allied Sounds.

The popular name of "raps" conveys a very erroneous impression of this class of phenomena. At different times, during my experiments, I have heard delicate ticks, as with the point of a pin, a cascade of sharp sounds as from an induction coil in full work, detonations in the air, sharp metallic taps, a cracking like that heard when a frictional machine is at work, sounds like scratching, the twittering as of a bird, etc.

These sounds are noticed with almost every medium, each having a special peculiarity; they are more varied with Mr. Home, but for power and certainty I have met with no one who at all approached Miss Kate Fox. For several months I enjoyed almost unlimited opportunity of testing the various phenomena occurring in the presence of this lady, and I especially examined the phenomena of these sounds. With mediums, generally, it is necessary to sit for a formal *séance* before anything is heard; but in the case of Miss Fox it seems only necessary for her to place her hand on any substance for loud thuds to be heard in it, like a triple pulsation, sometimes loud enough to be heard several rooms off. In this manner I have heard them in a living tree, on a sheet of glass, on a stretched iron wire, on a stretched membrane, a tambourine, on the roof of a cab, and on the floor of a theater. Moreover, actual contact is not always necessary; I have had these sounds proceeding from the floor, walls, etc., when the mediums hands and feet were held, when she was standing on a chair, when she was suspended in a swing from the ceiling, when she was inclosed in a wire cage, and when she had fallen fainting on a sofa. I have heard them on a glass harmonicon, I have felt them on my shoulder and under my own hands. I have heard them on a sheet of paper held between the fingers by a piece of thread passed through one corner. With a full knowledge of the numerous theories which have been started, chiefly in America, to explain these sounds, I have tested them in every way that I could devise, until there has been no escape from the conviction that they were true objective occurrences, not produced by trickery or mechanical means.

An important question here forces itself upon the attention. Are the movements and sounds governed by *intelligence?* At a very early stage of the inquiry it was seen that the power producing the phenomena was not merely a blind force, but was associated with, or governed by, intelligence; thus the sounds to which I have just alluded will be repeated a definite number of times, they will come loud or faint, and in

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ferent places at request; and by a pre-arged code of signals questions are answered d messages given, with more or less accuy.

The intelligence governing the phenomena is netimes manifestly below that of the meum. It is frequently in direct opposition to e wishes of the medium; when a determinan has been expressed to do something which ght not be considered quite right, I have own urgent messages given to induce a consideration. The intelligence is sometimes such a character as to lead to the belief that does not emanate from any person present. Several instances can be given to prove each these statements, but the subject will be more ly discussed subsequently, when treating of e source of the intelligence.

Class III.

The Alteration of Weight of Bodies.

I have repeated the experiments already deribed in this journal, in different forms, and th several mediums. I need not further alde to them here.

Class IV.

vements of Heavy Substances when at a distance from the Medium.

The instances in which heavy bodies, such e tables, chairs, sofas, etc., have been moved, hen the medium has not been touching them, re very numerous. I will briefly mention a w of the most striking. My own chair has een twisted partly round, whilst my feet were f the floor. A chair was seen by all present move slowly up to the table from a far cor-r, when all were watching it; on another casion an arm chair moved to where we were tting, and then moved slowly back again, (a istance of about three feet) at my request. n three successive evenings a small table oved slowly across the room, under condiions which I had specially pre-arranged, so s to answer any objection which might be ised to the evidence. I have had several petitions of the experiment considered by e Committee of the Dialectical Society to be nclusive, viz., the movement of a heavy table a full light, the chairs turned with their backs o the table, about a foot off, and each person neeling on his chair, with hands resting over he back of the chair, but not touching the able. On one occasion this took place when I vas moving about so as to see how every one vas placed.

Class V.

The Rising of Tables and Chairs off the Ground without Contact with any Person.

A remark is generally made when occurrences of this kind are mentioned: Why is it only tables and chairs which do these things? Why is this property peculiar to furniture? I might reply that I only observe and record facts, and do not profess to enter into the why and wherefore; but indeed it will be obvious that if a heavy inanimate body in an ordinary dining-room has to rise off the floor, it cannot very well be anything else but a table or a chair. That this propensity is not specially attached to furniture, I have abundant evidence; but like other experimental demonstrators, the intelligence or power, whatever it may be, which produces these phenomena can only work with the materials which are available.

On five separate occasions, a heavy dining-table rose between a few inches and 1½ feet off the floor, under special circumstances, which rendered trickery impossible. On another occasion a heavy table rose from the floor in full light, while I was holding the medium's hands and feet. On another occasion the table rose from the floor, not only when no person was touching it, but under conditions which I had pre-arranged so as to assure unquestionable proof of the fact.

Class VI.

The Levitation of Human Beings.

This has occurred in my presence on four occasions in darkness. The test conditions under which they took place were quite satisfactory, so far as the judgment was concerned; but ocular demonstration of such a fact is so necessary to disturb our pre-formed opinions as to "the naturally possible and impossible," that I will here only mention cases in which the deductions of reason were confirmed by the sense of sight.

On one occasion I witnessed a chair, with a lady sitting on it, rise several inches from the ground. On another occasion, to avoid the suspicion of this being in some way performed by herself, the lady knelt on the chair in such a manner that its four feet were visible to us. It then rose about three inches, remained suspended for about ten seconds, and then slowly descended. At another time two children, on separate occasions, rose from the floor with their chairs, in full daylight, under (to me) most satisfactory conditions; for I was kneeling and keeping close watch upon the feet of the chair, and observing that no one might touch them.

The most striking cases of levitation which I have witnessed have been with Mr. Home. On three separate occasions have I seen him raised completely from the floor of the room. Once

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sitting in an easy chair, once kneeling on his chair, and once standing up. On each occasion I had full opportunity of watching the occurrence as it was taking place.

There are at least a hundred recorded instances of Mr. Home's rising from the ground, in the presence of as many separate persons, and I have heard from the lips of the three witnesses to the most striking occurrence of this kind—the Earl of Dunraven, Lord Lindsay, and Captain C. Wynne—their own most minute accounts of what took place. To reject the recorded evidence on this subject is to reject all human testimony whatever; for no fact in sacred or profane history is supported by a stronger array of proofs.

The accumulated testimony establishing Mr. Home's levitations is overwhelming. It is greatly to be desired that some person, whose evidence would be accepted as conclusive by the scientific world—if indeed there lives a person whose testimony in favor of such phenomena would be taken—would seriously and patiently examine these alleged facts. Most of the eye-witnesses to these levitations are now living, and would, doubtless, be willing to give their evidence. But, in a few years, such direct evidence will be difficult, if not impossible, to be obtained.

Class VII.

Movement of Various Small Articles without Contact with any Person.

Under this heading I propose to describe some special phenomena which I have witnessed. I can do little more here than allude to some of the more striking facts, all of which, be it remembered, have occurred under circumstances that render trickery impossible. But it is idle to attribute these results to trickery, for I would again remind my readers that what I relate has not been accomplished at the house of a medium, but in my own house, where preparations have been quite impossible. A medium, walking into my dining-room, cannot, while seated in one part of the room with a number of persons keenly watching him, by trickery make an accordion play in my own hand when I hold it keys downwards, or cause the same accordion to float about the room playing all the time. He cannot introduce machinery which will wave window-curtains or pull up Venetian blinds eight feet off, tie a knot in a handkerchief and place it in a far corner of the room, sound notes on a distant piano, cause a card-plate to float about the room, raise a water-bottle and tumbler from the table, make a coral necklace rise on end, cause a fan to move about and fan the company, or set in motion a pendulum when enclosed in a glass case firmly cemented to the wall.

Class VIII.

Luminous Appearances.

These, being rather faint, generally require the room to be darkened. I need scarcely remind my readers again that, under these circumstances, I have taken proper precautions to avoid being imposed upon by phosphorised oil or other means. Moreover, many of these lights are such as I have tried to imitate artificially, but cannot.

Under the strictest test conditions, I have seen a solid self-fluminous body, the size and nearly the shape of a turkey's egg, float noiselessly about the room, at one time higher than any one present could reach standing on tiptoe, and then gently descend to the door. It was visible for more than ten minutes, and before it faded away it struck the table three times with a sound like that of a hard, solid body. During this time the medium was lying back, apparently insensible, in an easy chair.

I have seen luminous points of light darting about and settling on the heads of different persons; I have had questions answered by the flashing of a bright light a desired number of times in front of my face. I have seen sparks of light rising from the table to the ceiling, and again falling upon the table, striking it with an audible sound. I have had an alphabetic communication given by luminous flashes occurring before me in the air, whilst my hand was moving about amongst them. I have seen a luminous cloud floating upward to a picture. Under the strictest test conditions, I have more than once had a solid, self-luminous, crystalline body placed in my hand by a hand which did not belong to any person in the room. *In the light*, I have seen a luminous cloud hover over a heliotrope on a side table, break a sprig off, and carry the sprig to a lady; and on some occasions I have seen a similar luminous cloud visibly condense to the form of a hand and carry small objects about. These, however, more properly belong to the next class of phenomena.

Class IX.

The Appearance of Hands, either Self-Luminous or Visible by Ordinary Light.

The forms of hands are frequently felt at dark *séances*, or under circumstances where they cannot be seen. More rarely I have *seen* the hands. I will here give no instances in which the phenomenon has occured in darkness, but will simply select a few of the numerous in-

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tances in which I have seen the hands in the ight.

A beautifully-formed small hand rose up rom an opening in a dining-table and gave me . flower; it appeared and then disappeared hree times at intervals, affording me ample op- ortunity of satisfying myself that it was as eal in appearance as my own. This occurred n the light in my own room, whilst I was hold- ng the medium's hands and feet.

On another occasion, a small hand and arm, ike a baby's, appeared playing about a lady vho was sitting next to me. It then passed to ne and patted my arm and pulled my coat everal times.

At another time, a finger and thumb were een to pick the petals from a flower in Mr. Home's button-hole, and lay them in front of several persons who were setting near him.

A hand has repeatedly been seen by myself nd others playing the keys of an accordion ; both of the medium's hands being visible at the same time, and sometimes being held by those near him.

The hands and fingers do not always appear to me to be solid and life-like. Sometimes, indeed, they present more the appearance of a nebulous cloud partly condensed into the form of a hand. This is not equally visible to all present. For instance, a flower or other small object is seen to move; one person present will see a luminous cloud hovering over it, another will detect a nebulous-looking hand, whilst others will see nothing at all but the moving flower. I have more than once seen, first an object move, then a luminous cloud appear to form about it, and, lastly, the cloud condense into shape and become a perfectly-formed hand. At this stage, the hand is visible to all present. It is not always a mere form, but sometimes appears perfectly life-like and graceful, the fingers moving and the flesh apparently as human as that of any in the room. At the wrist, or arm, it becomes hazy and fades off into a luminous cloud.

To the touch the hand sometimes appears icy cold and dead, at other times, warm and life-like, grasping my own with the firm pressure of an old friend.

I have retained one of these hands in my own, firmly resolved not to let it escape. There was no struggle or effort made to get loose, but it gradually seemed to resolve itself into vapor, and faded in that manner from my grasp.

Class X.

Direct Writing.

This is the term employed to express writing which is not produced by any person present. I have had words and messages repeatedly written on privately-marked paper, under the most rigid test conditions, and have heard the pencil moving over the paper in the dark. The conditions, pre-arranged by myself, have been so strict as to be equally convincing to my mind as if I had seen the written characters formed. But as space will not allow me to enter into full particulars, I will merely select two instances in which my eyes as well as ears were witnesses to the operation.

The first instance which I shall give took place, it is true, at a dark *séance*, but the result was not less satisfactory on that account. I was sitting next to the medium, Miss Fox, the only other persons present being my wife and a lady relative, and I was holding the medium's two hands in one of mine, whilst her feet were resting on my feet. Paper was on the table before us, and my disengaged hand was holding a pencil.

A luminous hand came down from the upper part of the room, and after hovering near me for a few seconds, took the pencil from my hand, rapidly wrote on a sheet of paper, threw the pencil down, and then rose up over our heads, gradually fading into darkness.

My second instance may be considered the record of a failure. "A good failure often teaches more than the most successful experiment." It took place in the light, in my own room, with only a few private friends and Mr. Home present. Several circumstances, to which I need not further allude, had shown that the power that evening was strong. I therefore expressed a wish to witness the actual production of a written message such as I had heard described a short time before by a friend. Immediately an alphabetic communication was made as follows: "We will try." A pencil and some sheets of paper had been lying on the centre of the table; presently the pencil rose up on its point, and after advancing by hesitating jerks to the paper fell down. It then rose and again fell. A third time it tried, but with no better result. After three unsuccessful attempts, a small wooden lath, which was lying near upon the table, slid towards the pencil and rose a few inches from the table; the pencil rose again, and propping itself against the lath, the two together made an effort to mark the paper. It fell, and then a joint effort was again made. After a third trial the lath gave it up and moved back to its place the pencil lay as it fell across the paper. and an alphabetic message told us: "We have tried

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to do as you asked, but our power is exhausted."

Class XI.

Phantom Forms and Faces.

These are the rarest of the phenomena I have witnessed. The conditions requisite for their appearance appear to be so delicate, and such trifles interfere with their production, that only on very few occasions have I witnessed them under satisfactory test conditions. I will mention two of these cases.

In the dusk of the evening, during a *séance* with Mr. Home at my house, the curtains of a window about eight feet from Mr. Home were seen to move. A dark, shadowy, semi-transparent form, like that of a man, was then seen by all present standing near the window, waving the curtain with his hand. As we looked the form faded away and the curtains ceased to move.

The following is a still more striking instance. As in the former case, Mr. Home was the medium. A phantom form came from a corner of the room, took an accordion in its hand, and then glided about the room playing the instrument. The form was visible to all present for many minutes, Mr. Home also being seen at the same time. Coming rather close to a lady who was sitting apart from the rest of the company, she gave a slight cry, upon which it vanished.

Class XII.

Special Instances which seem to point to the Agency of an Exterior Intelligence.

It has already been shown that the phenomena are governed by an intelligence. It becomes a question of importance as to the source of that intelligence. Is it the intelligence of the medium, of any of the other persons in the room, or is it an exterior intelligence? Without wishing at present to speak positively on this point, I may say that whilst I have observed many circumstances which appear to show that the will and intelligence of the medium have much to do with the phenomena,* I have observed some circumstances which seem conclusively to point to the agency of an outside intelligence not belonging to any human being in the room. Space does not allow me to give here all the arguments which can be adduced to prove these points, but I will briefly mention one or two circumstances out of many.

I have been present when several phenomena were going on at the same time, some being unknown to the medium. I have been with Miss Fox when she has been writing a message automatically to one person present, whilst a message to another person on another subject was being given alphabetically by means of "raps," and the whole time she was conversing freely with a third person on a subject totally different from either. Perhaps a more striking instance is the following:

During a *séance* with Mr. Home, a small lath, which I have before mentioned, moved across the table to me, in the light, and delivered a message to me by tapping my hand; I repeating the alphabet and the lath tapping me at the right letters. The other end of the lath was resting on the table, some distance from Mr. Home's hands.

The taps were so sharp and clear, and the lath was evidently so well under control of the invisible power which was governing its movements, that I said: "Can the intelligence governing the motion of this lath change the character of the movements, and give me a telegraphic message through the Morse alphabet by taps on my hand?" (I have every reason to believe that the Morse code was quite unknown to any other person present, and it was only imperfectly known to me). Immediately I said this, the character of the taps changed and the message was continued in the way I had requested. The letters were given too rapidly for me to do more than catch a word here and there, and consequently I lost the message; but I heard sufficient to convince me that there was a good Morse operator at the other end of the line, wherever that might be.

Another instance. A lady was writing automatically by means of the planchette. I was trying to devise a means of proving that what she wrote was not due to "unconscious cerebration." The planchette, as it always does, insisted that, although it was moved by the hand and arm of the lady, the intelligence was that of an invisible being who was playing on her brain as on a musical instrument, and thus moving her muscles. I therefore said to this intelligence, "Can you see the contents of this room?" "Yes," wrote the planchette. "Can you see to read this newspaper?" said I, putting my finger on a copy of the Times, which was on a table behind me, but without looking at it. "Yes," was the reply of the planchette. "Well," I said, if you can see that, write the word which is now covered by my finger, and I will believe you." The planchette com-

* I do not wish my meaning to be misunderstood. What I mean is, *not* that the medium's will and intelligence are actively employed in any conscious or dishonest way in the production of the phenomena, but that they sometimes appear to act in an unconscious manner.

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menced to move. Slowly and with great difficulty, the word "however" was written. I turned round and saw that the word "however" was covered by the tip of my finger.

I had purposely avoided looking at the newspaper when I tried this experiment, and it was impossible for the lady, had she tried, to have seen any of the printed words, for she was sitting at one table, and the paper was on another table behind, my body intervening.

Class XIII.

Miscellaneous Occurrences of a Complex Character.

Under this heading I propose to give several occurrences which cannot be otherwise classified owing to their complex character. Out of more than a dozen cases, I will select two. The first occurred in the presence of Miss Kate Fox. To render it intelligible, I must enter into some details.

Miss Fox had promised to give me a *séance* at my house one evening in the spring of last year. Whilst waiting for her, a lady relative, with my two eldest sons, aged fourteen and eleven, were sitting in the dining-room where the *séances* were always held, and I was sitting by myself, writing in the library. Hearing a cab drive up and the bell ring, I opened the door to Miss Fox, and took her directly into the dining-room. She said she would not go up stairs, as she could not stay very long, but laid her bonnet and shawl on a chair in the room. I then went to the dining-room door, and telling the two boys to go into the library and proceed with their lessons, I closed the door behind them, locked it, and (according to my usual custom at *séances*) put the key in my pocket.

We sat down, Miss Fox being on my right hand and the other lady on my left. An alphabetic message was soon given to turn the gas out, and we thereupon sat in total darkness, I holding Miss Fox's two hands in one of mine the whole time. Very soon a message was given in the following words: "We are going to bring something to show our power;" and almost immediately afterwards we all heard the tinkling of a bell, not stationary, but moving about in all parts of the room; at one time by the wall, at another in a further corner of the room, now touching me on the head, and now tapping against the floor. After ringing about the room in this manner for fully five minutes, it fell upon the the table close to my hands.

During the time this was going on no one moved, and Miss Fox's hands were perfectly quiet. I remarked that it could not be my little hand-bell which was ringing, for I left that in the library. (Shortly before Miss Fox came I had occasion to refer to a book, which was lying on a corner of a book-shelf. The bell was on the book, and I put it on one side to get the book. That little incident had impressed on my mind the fact of the bell being in the library.) The gas was burning brightly in the hall outside the dining-room door, so that this could not be opened without letting light into the room, even had there been an accomplice in the house with a duplicate key, which there certainly was not.

I struck a light. There, sure enough, was my own bell lying on the table before me. I went straight into the library. A glance showed that the bell was not where it ought to have been. I said to my eldest boy, "Do you know where my little bell is?" "Yes, papa," he replied, "there it is," pointing to where I had left it. He looked up as he said this, and then continued; "No—it's not there, but it was a little time ago." "How do you mean?—has any one come in and taken it?" "No," said he; "no one has been in: but I am sure it was there, because when you sent us in here out of the dining-room, J. (the youngest boy) began ringing it so that I could not go on with my lessons, and I told him to stop." J. corroborated this, and said that, after ringing it, he put the bell down where he had found it.

The second circumstance which I will relate occurred in the light, one Sunday evening, only Mr. Home and members of my family being present. My wife and I had been spending the day in the country, and I had brought home a few flowers we had gathered. On reaching home, we gave them to a servant to put them in water. Mr. Home came soon after, and we at once proceeded to the dining-room. As we were sitting down, a servant brought in the flowers which she had arranged in a vase. I placed it in the center of the dining-table, which was without a cloth. This was the first time Mr. Home had seen these flowers.

After several phenomena had occurred the conversation turned upon some circumstances which seemed only explicable on the assumption that matter had actually passed through a solid substance. Thereupon a message was given by means of the alphabet: "It is impossible for matter to pass through matter, but we will show you what we can do." We waited in silence. Presently a luminous appearance was seen hovering over the bouquet of flowers, and then, in full view of all present, a piece of

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China-grass, fifteen inches long, which formed the center ornament of the bouquet, slowly rose from the other flowers, and then descended to the table in front of the vase, between it and Mr. Home. It did not stop on reaching the table, but went straight through it, and we all watched it till it had entirely passed through. Immediately on the disappearance of the grass, my wife, who was sitting near Mr. Home, saw a hand come up from under the table between them, holding the piece of grass. It tapped her on the shoulder two or three times with a sound audible to all, then laid the grass on the floor, and disappeared. Only two persons saw the hand, but all in the room saw the piece of grass moving about as I have described. During the time this was taking place Mr. Home's hands were seen by all to be quietly resting on the table in front of him. The place where the grass disappeared was eighteen inches from his hands. The table was a telescope dining-table, opening with a screw; there was no leaf in it, and the junction of the two sides formed a narrow crack down the middle. The grass had passed through this chink, which I measured, and found to be barely one-eighth inch wide. The stem of the piece of grass was far too thick to enable me to force it through this crack without injuring it; yet we had all seen it pass through quietly and smoothly and on examination it did not show the slightest signs of pressure or abrasion.

Theories to Account for the Phenomena Observed.

First Theory.—The phenomena are all the results of tricks, clever mechanical arrangements, or legerdemain; the mediums are imposters, and the rest of the company fools.

It is obvious that this theory can only account for a very small proportion of the facts observed. I am willing to admit that some so-called mediums, of whom the public have heard much, are arrant impostors who have taken advantage of the public demand for spiritualistic excitement to fill their purses with easily earned guineas; whilst others who have no pecuniary motive for imposture are tempted to cheat, it would seem, solely by a desire for notoriety. I have met with several cases of imposture, some very ingenious, others so palpable, that no person who has witnessed the genuine phenomena could be taken in by them. An enquirer into the subject finding one of these cases at his first initiation is disgusted with what he detects at once to be an imposture; and he not unnaturally gives vent to his feelings, privately or in print, by a sweeping denunciation of the whole genus "medium." Again, with a thoroughly genuine medium, the first phenomena which are observed are generally slight movements of the table, and faint taps under the medium's hands or feet. These of course are quite easy to be imitated by the medium, or any one at the table. If, as sometimes occurs, nothing else takes place, the sceptical observer goes away with the firm impression that his superior acuteness detected cheating on the part of the medium, who was consequently afraid to proceed with any more tricks in *his* presence. He, too, writes to the newspapers exposing the whole imposture, and probably indulges in moral sentiments about the sad spectacle of persons, apparently intelligent, being taken in by imposture, which he detected at once.

There is a wide difference between the tricks of a professional conjurer, surrounded by his apparatus and aided by any number of concealed assistants and confederates, deceiving the senses by clever sleight of hand on his own platform, and the phenomena occurring in the presence of Mr. Home, which takes place in the light, in a private room that almost up to the commencement of the *séance* has been occupied as a living room, and surrounded by private friends of my own, who not only will not countenance the slightest deception, but who are watching narrowly everything that takes place. Moreover, Mr. Home has frequently been searched before and after the *séances*, and he *always* offers to allow it. During the most remarkable occurrences I have occasionally held both his hands, and placed my feet on his feet. On no single occasion have I proposed a modification of arrangements for the purpose of rendering trickery less possible which he has not at once assented to, and frequently he has himself drawn attention to tests which might be tried.

I speak chiefly of Mr. Home, as he is so much more powerful than most of the other mediums I have experimented with. But with all I have taken such precautions as place trickery out of the list of possible explanations.

Be it remembered that an explanation to be of any value must satisfy all the conditions of the problem. It is not enough for a person, who has perhaps seen only a few of the inferior phenomena, to say "I suspect it was all cheating," or, "I saw how some of the tricks could be done."

Second Theory.—The persons at a *séance* are the victims of a sort of mania or delusion, and imagine phenomena to occur which have no real objective existence.

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Third Theory.—The whole is the result of conscious or unconscious cerebral action.

These two theories are evidently incapable of embracing more than a small portion of the phenomena, and they are improbable explanations for even those. They may be dismissed very briefly.

I now approach the "Spiritual" theories. It must be remembered that the word "spirits" is used in a very vague sense by the generality of people.

Fourth Theory.—The result of the spirit of the medium, perhaps in association with the spirits of some or all of the people present.

Fifth Theory.—The actions of evil spirits, or devils, personifying who or what they please, in order to undermine Christianity and ruin men's souls.

Sixth Theory.—The actions of a separate order of beings, living on this earth, but invisible and immaterial to us. Able, however, occasionally to manifest their presence. Known in almost all countries and ages as demons (not necessarily bad), gnomes, fairies, kobolds, elves, goblins, Puck, etc.

Seventh Theory.—The action of departed human beings—the spiritual theory *par excellence*.

Eighth Theory.—The Psychic Force Theory. This is a necessary adjunct to the 4th, 5th, 6th, and 7th theories, rather than a theory by itself.

According to this theory the "medium," or the circle of people associated together as a whole, is supposed to possess a force, power, influence, virtue, or gift, by means of which intelligent beings are enabled to produce the phenomena observed. What these intelligent beings are is a subject for other theories.

It is obvious that a "medium" possesses a something which is not possessed by an ordinary being. Give this something a name. Call it "*x*" if you like. Mr. Serjeant Cox calls it Psychic Force. There has been so much misunderstanding on this subject that I think it best to give the following explanation in Mr. Serjeant Cox's own words:

"The theory of Psychic Force is in itself merely the recognition of the now almost undisputed fact that under certain conditions, as yet but imperfectly ascertained, and within a limited, but as yet undefined, distance from the bodies of certain persons having a special nerve organization, a force operates by which, without muscular contact or connection, action at a distance is caused, and visible motions and audible sounds are produced in solid substances. As the presence of such an organization is necessary to the phenomenon, it is reasonably concluded that the force does, in some manner as yet unknown, proceed from that organization. As the organism is itself moved and directed within its structure by a force which either is, or it is controlled by, the soul, spirit, or mind (call it what we may) which constitutes the individual being we term the 'Man', it is an equally reasonable conclusion that the force which causes the motions beyond the limits of the body is the same force that produces motion within the limits of the body. And, inasmuch as the external force is seen to be often directed by intelligence, it is an equally reasonable conclusion that the directing intelligence of the external force is the same intelligence that directs the force internally. This is the force to which the name of Psychic Force has been given by me as properly designating a force which I thus contend to be traced back to the soul or mind of the man as its source. But I, and all who adopt this theory of Psychic Force as being the agent through which the phenomena are produced, do not thereby intend to assert that this Psychic Force may not be sometimes seized and directed by some other intelligence than the mind of the psychic. The most ardent spiritualists practically admit the existence of Psychic Force under the very inappropriate name of Magnetism (to which it has no affinity whatever,) for they assert that the spirits of the dead can only do the acts attributed to them by using the magnetism (that is, the Psychic Force) of the medium. The difference between the advocates of Psychic Force and the Spiritualists consist in this—that we contend that there is as yet insufficient proof of any other directing agent than the intelligence of the medium, and no proof whatever of the agency of spirits of the dead; while the Spiritualists hold it as a faith not demanding further proof, that spirits of the dead are the sole agents in the production of all the phenomena. Thus the controversy resolves itself into a pure question of fact, only to be determined by a laborious and long-continued series of experiments and an extensive collection of psychological facts, which should be the first duty of the Psychological Society, the formation of which is now in progress."

TWO HUNDRED THOUSAND deaths from Asiatic cholera are estimated to have taken place in Hungary, in the year ending November 1st, 1873.

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Review of Dr. Clarke's "Sex in Education."

BY MRS. SUSAN EVERETT, M. D.

"SEX IN EDUCATION," written by Edward H. Clarke, M. D., is a remarkable book. The manner in which some men of the Atlas sort, with the world of weal and woe for all womankind upon their shoulders, agonize over the subject of femininity, is more amusing than terrifying.

A long time ago Eve, through superhuman influence (mark you, it required superhuman influence again and again applied to corrupt her, while it required simply her influence, which was human, to corrupt Adam), tasted an apple. Adam, through sheer weakmindedness and love of eating, did the same. She, like a queen, took the disastrous results of her sin without a murmur. He, with his whimpering, man-like: "Lord, the woman thou didst give me," inaugurated a set of sons that have ever since kept up the hue and cry: "Oh Lord, the woman!"

Horatio R. Storer, M. D., of Boston, caught up the refrain not long since, when he informed women that they were crazy, chiefly because their uterine systems were awry. Curiously enough he incidentally let drop the fact that to each crazy woman statistics furnished a crazy man. Knowing that, anatomically, men had not the *uterine* bugbear to account for their insanity, and knowing also that men traditionally were very strong-minded and very reasonable and very consistent in every way, and believing that they were not likely to enter an insane asylum, as did the newspaper reporter, and investigate its *modus operandi*, it became a query with me as to what could cause the mental aberration of men. At length, as I read "Sex in Education," the light dawned upon me. Great numbers of men, Dr. Clarke included, are *monomaniacs* upon the subject of women. Among an early class of these harmless lunatics was Hippocrates, who in answer to the question, "What is woman?" replied, "disease!"

A little later the soft-minded Michelet announces that "woman is an exquisite invalid, with a perennial headache (a 'perennial' heartache, too, he might have added with more truth), and nerves perpetually on the rack." Even Thackeray, wholesome upon all points but one, says of American women: "They are handsome, discontented creatures." And, lastly, this mild form of mania in Dr. Clarke, with his "new periodicity departure," and his notion that women can stand anything under the sun—work, washing, scrubbing floors, marrying coarse men—in short, can do anything continuously but studying books! That, the weak point in their organization (which probably the Lord overlooked for the sake of Dr. Clarke having a chance to find it out), is menstruation. Some of his assertions seem quite dreadful at first, but upon second inspection prove to be only laughable or silly.

I remember that redoubtable gynæcologist of Boston, Dr. Storer, consolingly informed his compeers some years since that women could not practice medicine because of their menstruation! Women physicians laughed in their sleeves at this notion of Dr. Storer, and kept at work without let or hindrance, from that source at least.

While magnanimity, fairness, openness and candor continue *not* masculine but *feminine* virtues, and while we can't help remembering Father Adam's little peccadillo, we are justified in mistrusting male motives. For some time men endeavored to scare women from studying medicine by telling them no man would marry a female doctor. Here was a dilemma, indeed. Good women hesitated to enter a thing which would cut them off from home and husbands; for women love to marry when they find worthy men. At last a desire for knowledge outweighed their desire for husbands, and scores of women entered the medical ranks. Now let me whisper a word: We have the utmost difficulty to keep even a respectable number of female physicians in practice, so *importunate are men to marry them!* They seem to have discovered that of all women, they love most to marry medical women. Oh, inconsistency! thy name is MAN!

It requires a great man to measure a great man, and it takes more than a man, be he great or small, to measure a woman. Woman is alone measured by woman. It has always seemed to me that men are just a little out of their "sphere" when they set themselves up as equal to the task of writing books and lectures upon the duties of women as wives and mothers, etc. What do they know about wives and mothers, except as the merest outsiders? Is it not a trifle impudent in them to step into

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our shoes and dictate to us in matters that, experimentally, they know less about than the scrub woman that mops up their tobacco juice in our hospitals and rail cars? I propose that women in future demand at least respectable manners from men, and refuse to be dictated to by individuals with a "male education," whether they have M. D's or D. D's at the end of their names.

Dr. Clarke thinks his sex will have to re-enact "Old Rome and the Sabines," if they would be well wived. Allow me to advise these amiable mortals, first, not to go to Ireland for their Sabine spouses, as statistics show that the Celtic race is actually diminishing in numbers; so of course there must be something wrong about the women. Second, to not visit England with marital motives, as in that famous land one woman in every six is barren. If they go to France they will fare even worse. I know of no resource for these abused, wifeless Americans but the Chinese women. Even in that blissful quarter the women expect the men to do all the house-work, even to dish-washing and ironing; all the women do is fan themselves and have babies. However, if American men like this view of the Sabine scheme, why I think American women will not object to their new relations.

Dr. Clarke asserts that "the American woman is not fairly up to what nature asks from her as wife and mother." Without undertaking to say that our women *are* up to what God intended they should be, I will say this, creatures that live in such notoriously glass houses as men are wont to recline in must not throw stones. Let me ask how many American men, now-a-days, bring to the bridal couch *pure bodies* and holy purposes?

I would like to ask, in the name of insulted American women, if this assuming Dr. Clarke can find between the Atlantic ocean and the Missouri river, one thousand men "who are fairly up to what nature, God and St. Paul asks from men as husbands and fathers? To every one thousand specimens of such paternal material we will produce three thousand of maternal material as good as Mother Eve herself! The *mother* material in this country, in respect of quality, bodily, mentally and morally, outnumbers the father material.

I have rarely met with the vulgar coarseness found in a sentence in Dr. Clarke's book (page 14). It relates to unmarried women, and is as follows: "Having passed middle life without the symmetry and development that maternity gives, have drifted into the *hermaphroditic* condition that sometimes accompanies spinsterism." Again (page 93), in speaking of women without children, he says: "Such persons are analogous to the *sexless* class of *termites*." And yet again (page 93), speaking of childless women: "A third division of the human race is to be found by subtracting sex from women, *castrated femininity*." If there is more castrated femininity in this country than masculinity, we as women should weep tears of blood. There are millions of prematurely gray-headed and bald-headed men in these United States, and there are hecatombs of under-sized men who could not, even on tip-toe, exceed five feet and six inches; while this lowness of stature is often accompanied by pigmy shoulders that slope like the eaves of a house! Is this the material that Dr. Clarke would have his "spinsters" sire a race with? Rome fell for lack of men. If ever this country follows in her footsteps it will be for the same lack! Men at the present time work out, smoke out, chew out and dissipate out their virility by the time they are thirty-five years old. Even the newspapers teem with advertisements for restoring "lost manhood," etc., until one turns sick with disgust. Bad as may be the condition of woman's pelvic organs, man's is even worse.

In the good time coming, when women write a little of the medical literature, there will be a few disclosures made that have hitherto been bottled up and shoved out of sight. Even now the glamour is less and less before our eyes, while we are seeing more and more of man's moral deformities, more and more of his intellectual stupidity, more and more of his gross selfishness; and what is almost worse yet, we, as women, are finding out that men, as men, are instinctively *coarse* in their thoughts and feelings. We feel this coarseness cropping out in this book of Dr. Clarke's, in his allusions to women. A man who is subjected to a "male education," and who is unredeemed by Christian principle, is very nearly allied to the brutes. Even God had all he could do to keep from wiping out of existence that "stiff-necked race" that tormented him forty years in the wilderness. The good man is the exception; the man who won't betray a woman is the exception, the man, Esau-like, who won't sell his soul for a mess of potage, is the exception.

I feel no alarm for woman. All my spare anxieties are philantropically and mercifully bestowed upon men. Women are a superior race. They are the angels that God has sent into the world to redeem weak, foolish man.

So long as these same foolish men take it

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upon themselves to arrange courses of study for girls we shall have broken health, and so long as we have "female doctors (*i. e.*, men with medical diplomas whose only aim and object in life is to treat the sexual diseases, real or imaginary, of women), of the gynæcological stripe to treat them, we shall find girls continuing in broken health. By-and-by, when women shall have the management of girls in their studies and in their bodily ailments, matters will assume a widely different aspect. Women have the *endurance* characteristic of all superiority, and nothing will really kill them out.

Female human beings that are so monstrously tough as to stand a four years' course of study upon white bread, butter, pies, cake, coffee and tea, with bodies dressed in muslin drawers, gartered stockings, corsets, whalebones, and four pounds of skirts strapped to their loins—girls that can stand this while breathing an atmosphere foul even to the olfactory nerve, and not come out in coffins in place of with diplomas, could, if living in a pure atmosphere, dressed scientfically, and fed upon oatmeal porridge, bean soup, baked apples, brown bread and beef, come out in glorious health.

It is evident to a vast number of thinking women that neither boys nor girls should be put to hard study before sixteen years of age, that they both should enjoy a romping life before that time; and that a disregard of this rule is peopling this country with not only a race of "castrated" (if Dr. Clarke insists on that word) women, but of castrated men.

If mantuamakers are compelled to pad women's chests to compensate for deformed nature, *tailors* pad both the chests and shoulders of men!

The loose screw in Dr. Clarke's book is menstruation. If transmigration were true, and Dr. Clarke could only die for a year or two and reappear in the form of a woman he would doubtless change his views relative to ovulation, and conclude with the female members of the medical profession that in a healthy woman's life a healthy uterus has no more modification upon her thoughts and feelings than a healthy stomach. As it is he wholly mistakes the subject. *He puts pathology for physiology.* He falls into the traditional error concerning woman's special functions that all male doctors (unless blessed with great common sense, and even some dramatic power, or at least that ability that enables one to imagine conditions one can by no possibility feel) are liable to fall into. They are errors of organization—man *cannot* comprehend woman any more than he can discover perpetual motion. He may as well, first as last, stop trying to understand her. It would be ludicrous, if it were not so silly, to witness the fervor men seem to experience while telling us of what we know, by mere instinct, relative to our special functions. If men had more good taste they would not so often incur our contempt for their assumed knowledge of us.

Any woman who has been reared to climb trees, jump hay-mows, steer sleds down New England hills, who has been kept from all passional literature and life until maturity; and who has meanwhile been taught to do her daily stint at sewing and dish washing, with a large dash of playing in a sand hill bonnetless and shoeless, picking berries, and hunting bee's nests with the dog, until her legs are as strong as steel and her back like a mill post; a woman who has been reared like this (and there are thousands of such in this country), can remember that the menstrual life came late—about 15½ to 16 years—came with no note of disorder, with no shadow of twinge or ache in mind or body, indeed, the woman knows she is as unconscious of its approach, continuance and departure as she is of the digestion of a wholesome meal.

Then, wherefore, gentlemen doctors, all this parade and sentimentalism over a thing so natural and simple as digestion?

If women rear sons in such a manner that they fall into sexual diseases, we physicians of the female gender do not make ourselves red in the face and split our lungs in shouting, and spoil our pens writing anathemas upon the male sex as a failure, etc. We simply say, "Oh foolish mother, it is not the *sex* of your boy that is the trouble: it is your bad methods of early training that have got him into this state. "Cease to do evil, learn to do well, and nature and my sovereign self will help him to repair the mischief." The dear mother—so beautiful are women in their desires to learn the better way—at once acquiesces in our views of the matter, and all goes merry as a marriage bell.

There are a few glittering statements in Dr. Clarke's book which, I observe, have a painful effect upon its female readers. The statements are sophistical, and the uninitiated reader is perplexed by them without being able to refute them. I propose to ventilate a few of them.

1. Dr. Clarke says: "In looking over a boy's and girl's course of study one could not tell which was a boy's and which a girl's." Suppose he looks into their dinner baskets, probably he

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ould not tell which is the boy's dinner and hich the girl's. That would be rather dread-l; but no more so than the first.

2. "The daily walk and persistent exercise hat toughens a boy and makes a man of him an only be partially applied to a girl." How romping country girl would laugh at that no-ion! All she would ask would be to get the hance to try if her legs were not as good as er brother's.

3. Dr. C. continually conveys the impression hat women are ashamed of their peculiar or-anization and "all unite in pushing the hate-l thing out of sight and out of mind." I eg to inform this gallant doctor that he labors nder a most egregious blunder in supposing merican women ashamed of themselves. If here were ever a set of queens that magnified eir office they are the women of our beloved nd! Men have been trying to prove that we ave disabilities, and have endeavored with ight and main to make us *feel* disabilities; but e don't choose to feign what we do not pos-ess, so their time has been worse than lost.

4. Here's another assumption without a straw ven for foundation. "From fourteen to nineteen ears of age includes the building of the re-roductive apparatus." If that is so, how bout those wives that bear children at sixteen, eventeen and eighteen? According to Dr. larke's statement such women bear children *fore* that wonderful "apparatus" is built! he simple fact is the Lord has built the girl's productive apparatus at the date of the first enstrual epoch. There is a possibility of con-eption at the maturation of the first ovule as t the five hundredth. Medical books assert this hough medical books, considering who writes hem, are not of much account), and facts prove over and over.

5. Here is one of the very pillars of Dr. larke's edifice. "Periodicity characterizes he female organism." So it does all import-nt things and events. Men are periodically ungry for their breakfasts, and the sun peri-dically rises every morning. If Dr. Clarke hinks periodicity any restraint let him listen o one of his own sex. Ruskin says "Men are oble in proportion to their *restraint. Noth-ng is so free as a fish, and nothing so restrained s man.* The more complex life is the more no-le it is." If woman's life is more complex han man's it only proves she is his superior.

6. "Persistency characterizes the male or-anization."

Charles Darwin ought to get hold of that em, If true, it would help along the "De-velopment Theory," since it proves a disposi-tional similarity between men and mules.

The stupidest people I know are characterized by an uncomfortable amount of persistence.

I once knew a class of idiot boys and girls (when girls are idiotic they are persistent, too,) who persistently strung wooden buttons six weeks before they learned to face the buttons all one way.

7. Dr. Clarke makes a great point of the idea that "the human system can't do two things at once."

Query. If the system cannot do two things at once, I would like him to throw a little light upon the following fact. The men of Boston, New York and Philadelphia manage to support 50,000 prostitutes in addition to their domestic relations. If Carpenter the physiologist, or Acton upon the "Reproductive Organs," are any authority, I think we may conclude the re-productive system in men is about as appalling in its drafts upon vitality as anything woman can do reproductively.

To Dr. Clarke's senseless iteration that girls CAN'T study and that boys CAN, I will observe that when it can be proved that young men, compelled to wear four pounds of clothing about the loins in the shape of skirts, to say nothing of corsets around the waist or the breathing of impure indoor air twenty-three hours out of the twenty-four, when they can do this and *not* suffer as girls now do, I shall have more respect for the flimsy statements con-tained in "Sex in Education." "At one time the cadets at West Point threw aside their suspend-ers and fastened their garments around the waist. In *only* a few weeks a disease broke out among them which was unaccountable. It was suggested that the waistband had something to do with it, the suspenders were resumed and soon the disease disappeared." Half of girls' diseases would disappear similarly if their bod-ies were dressed as sensibly as the bodies of boys.

Upon the whole I have concluded that men are not safe advisers. Even the New York Medical Journal stupidly commends Dr. Clarke's book, and gently insinuates that people must be guided more by the advice of doctors (meaning men of course) in educating their daughters. If men doctors are so reli-able, how about the *division of the os internum* upon 800 *different women in two years by two doc-tors alone, 500 of these cases being in New York city?* treatment pronounced by Henry Bennet, the Nestor of gynæcology, to be not only useless but diabolical. (I refer my brother doctors to

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the British Medical Journal, of December, 1872, and February, 1873.)

However, I would thank even a worse man than Dr. Clarke for doing a good turn to humanity. I believe his work is not wholly unmitigated evil; that with all its coarseness, impudence and unsoundness, there are a few strokes that have the true ring, and for this little wheat among so much chaff I thank the writer of "Sex in Education" for the few facts his book contains, trusting in future that when men write books for women they will leave out their bad manners and conduct themselves, for the time, at least, as kings and heroes, while they make their best obeisance to the queens of the land.

Phthisis Pulmonalis, or Pulmonary Consumption.

BY W. G. BARKER, M. B., LONDON. (*Second Paper.*)

ITS CAUSES.

THERE is no subject in medicine which demands a more searching investigation than this, or one, I am convinced, that will lead to greater and more satisfactory results; I shall, therefore, in elucidating this, carry my efforts to the full extent that the object for which these pages are written will permit, and endeavor to give to each its real significance. For, although hereditary predisposition is doubtless the chief source of this afflicting disease, and without which almost every other cause would appear to be inoperative, still it is rare that this is so strong as to engender it without some other constitutional or local excitant superadded to and increasing this, such as an irritating or impure atmosphere, dyspepsia, insufficient exercise in the open air, prolonged lactation, mental anxiety, etc. It is proposed, therefore, to consider every source in detail, and thoroughly examine the bearing which each may have upon the others, for in this way alone it is believed that just conclusions can be arrived at with respect to the value of each particular remedy, and that by adopting this course we shall steadily but surely continue, as hitherto, to diminish the appalling mortality of this most afflicting disease.

In order to arrive at correct deductions upon this subject we will commence with the following proposition, viz., that for a given number of persons in a healthy district, and with every condition to promote longevity, a given number of cases of phthisis would take place; this, to my mind, has not yet been so clearly established as many would suppose; yet if it be not so we are obviously responsible, directly or indirectly, for the 50,000 deaths which take place annually in England alone; but assuming that it be impossible altogether to eradicate this disease, and such at the present time is probably the case, for, although on the one hand we may gradually rid ourselves of the predisposition, so on the other, the countless vicissitudes to which we are exposed will assuredly again light it up, to be re-developed or not in the succeeding generation, according as there is an ingraft to an unhealthy or healthy stock. Nevertheless, we endeavor to arrive at the minimum, such as occurs in healthy, standard districts, and then steadily pursue the investigation, and diligently and separately search out the cause of even these; and I feel assured that a rich reward will be the result of our efforts; if, for instance, we take the average of the eighteen standard rural districts of England, the mortality of which from phthisis is 2.23 per 1,000 only, and in one of these, whose rate is a close approximation to the above, and which I have well known for many years, it may safely be affirmed that several of the causes are more or less preventable, as the hereditary transmission, insufficient ventilation, especially of the dormitories; inadequate or improper food, and amongst the female population (in which sex phthisis invariably predominates in agricultural neighborhoods) want of exercise in the open air. These causes, both severally and combined, are a fertile source of this disease, especially among the mothers of families who are worn out and exhausted with maternal and other duties connected with their household; and when tubercular deposit has commenced it is often too late to prevent the progress of this insidious malady, and if once engendered is liable to be transmitted to the offspring; or, in other words, to be a source of hereditary transmission. Supposing, therefore, the 50,000 ascertained deaths from phthisis to be reduced to 40,000, which would be the case if all parts of England were

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s free from it as the eighteen standard districts, and then, by a careful correction of the causes above enumerated even in these, we were to reduce the number for the whole of England 20,000 more; that is, 10,000 in the healthy and 10,000 in the unhealthy districts, of the possibility of which I entertain no doubt, we should thus effect a saving of 30,000 lives annually out of the 50,000.

There is no disease, in my opinion, of a less specific character than this—that is, one of a uniform type produced by a specific and individual cause, to which alone I consider the term should be applied—but rather that it owes its origin to a great variety of circumstances, and is generated by any influence causing constitutional debility, and that it is the result primarily and essentially of these. It is desirable that this result should be clearly understood, for nothing would be so likely to lead to injurious results in practice as to regard it of this nature. We now proceed to the separate consideration of its causes.

1. *Hereditary Predisposition.*—A vast deal has been said about the hereditary transmission of phthisis, and the subject has been treated of quite as a forlorn hope; but if preventive medicine be of any value, and I hold it to be the highest department of our science, why, may I ask, should it not be applied to this? We know that with this question the deepest and most subtle of our feelings are mixed up, which it is often difficult to set aside or eradicate; but, on the other hand, when we look at the terrible evils which result from the union of unhealthy parents, leading to every species of deterioration, both of mind and body, it cannot be considered less than a most imperative duty on the part of parents and those who are the advisers and guardians of the young, to tender their earnest and honest advice upon this, as upon every other subject where the welfare of their children or wards is concerned, and to give their most strenuous opposition to alliances where either one or the other are notoriously unhealthy, or afflicted with hereditary disease, such as phthisis, scrofula, or insanity. There is a difference, however, between this and the other departments of preventive medicine, that whilst in the latter the laws may justly be brought into operation to compel obedience, in the former we must still adhere to the maxim of Plato, that, "We may endeavor to persuade our fellow citizens, but it is not lawful to force them even to that which we know to be best for them." Let every person who has carefully noted the consequences of these unhealthy unions, and traced them from sire to son, and seen, notwithstanding very often a numerous progeny, each one either before or soon after arriving at maturity has sickened and died, and the name been blotted out from the land; and who, on the other hand, has not noticed that by ingrafting a vigorous and healthy stock to one that has been diseased, that for a generation at least the malady has been eradicated, to be reproduced, or finally annihilated, according as the succeeding generation selects a healthy or unhealthy partner. These observations are not mere idealities upon this subject, but the result of cases actually witnessed. My grandfather died of phthisis at the age of twenty-six, and several of his brothers were victims to the same disease; he married a vigorous and healthy woman, the result was that my father, although he suffered from bronchitis for many years, lived to within a few days of the advanced age of eighty-one; he married a healthy woman, and the issue are eight healthy children, all past the meridian of life, and with tolerably vigorous constitutions. It would be easy to multiply instances such as these; and, on the other hand, to show that the *physique* of families originally most sound, has become rapidly deteriorated by alliances of an opposite character, and if in making these people were to think less of rank or position, often groundless, and more of mental and bodily endowments, they would most assuredly be consulting, in the majority of cases, their own and their childrens' permanent welfare. As an illustration of this, who has not noticed the rise and fall of families? on the one hand, persons with scarcely any heritage except full intellectual and bodily vigor, with an honest name, raising themselves to the highest positions of honor and emolument, and even if this be accomplished but rarely in one generation, it is usually done in the next; on the other, who has not seen in families with all the power and influence of hereditary rank to support them, the gradual subsidence of their successors into mere units? This, as I have said above, may not be brought about in one generation, but, if similar conditions be perpetuated, is sure to be accomplished in the next. Nor do these observations apply to pulmonary consumption merely, which in very many cases may be considered only as a climax of that debility of constitution which, falling short of actual phthisis, is the cause of a vast variety of other diseases.

2. *Dyspepsia.*—A healthy person with a healthy stomach should have little or no evidence of the existence of this viscus when it is

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empty, or even whilst digestion is going on; a sense of hunger, which is very much regulated by the requirements of the system, and limited to a short time before the accustomed periods for taking food, and when this is satisfied, a comfortable sense of repletion, are the only sensations that should be felt; when digestion has terminated, which takes place with an ordinary meal in about two hours, there is usually slight thirst, indicating the necessity for a moderate amount of fluid which serves to dilute the chyme and carry it into the duodenum; the stomach after this should be in a state of perfect repose, and a source of no discomfort from flatulence, eructations of acid, or any other evidence of disordered digestion, for the nerves of his stomach belong to the same system (the organic) as those which supply the other portions of the intestinal canal, as well as the lungs, heart, liver, kidneys, etc., the functions of which are all performed without any consciousness on the part of the individual; it is only when diseased they are a source of uneasinesss and pain, and it is worthy of observation that, just in proportion as the duties of any organ are placed under our own control, so is it liable to be disordered; the stomach, for instance, partly for want of knowledge of the proper system of diet, and partly from willful irregularities, is far more frequently disordered than all other viscera put together, and to this source we may, I am satisfied, trace very many cases of tubercular phthisis. They may, indeed, be frequently viewed as cause and effect, the dyspepsia preceding the deposition of tubercle; but irrespective of this, the nature of the deposit itself would lead to a like conclusion, and induce us to attribute this disease to a mal-assimilation of the food, the result of disorder of one or all of the processes by which it is converted into healthy blood. In the treatment of it, therefore, it is most necessary that our attention should be directed to the proper regulation and improvement of the functions of the stomach and abdominal viscera.

3. *Insufficient Ventilation.*—This is one of the most constant and powerful causes of pulmonary phthisis; at the same time one that, in the majority of cases, easily admits of remedy, or, at least, of palliation; for kind nature in her abundance has supplied the air we breathe alike to all, and it is only the willful exclusion of it by ourselves that prevents its vivifying influence being exerted on our systems. By the process of respiration the atmosphere is brought into direct relation with the blood itself, only a thin membrane intervening, which easily admits the permeation of gases, and when *pure* air is admitted into the lungs it converts the blood, which reaches these organs in a state of impurity, and of a dark venous character, into a bright arterial red, rendering up at the same time one of the most powerful poisons, carbonic acid, and receiving in return the vitalizing principle, oxygen; and unless each of these be effectually performed every function in the body is sure to suffer, for arterial blood being essentially the *pabulum vitæ* of the whole body, it is necessary that it should be maintained in a state of the highest purity, and this cannot be done without a copious supply of pure atmospheric air.

4. *Unhealthy Occupations.*—This subject is intimately connected with the last, for the greater part of the industrial pursuits of the country owe their unhealthiness to the deficient ventilation of the factories, workshops, mines, etc., in which the labor is performed; but the inhalation of mechanical impurities, such as occurs in the manufacture of china and earthenware, in metal manufactures, as the pointing of needles and fish-hooks, the grinding of cutlery, etc., as well as the dust commingled with the atmosphere of mines, and in the manufacture of flax; also rapid and extreme alternations of temperature, an overheated and too dry, or a hot moist atmosphere, such as miners and those to which the operatives in a variety of other employments are habitually exposed, have likewise doubtless (although the diseases usually produced by these causes is chronic bronchitis and subacute pneumonia) a powerful influence in developing pulmonary phthisis where there is any predisposition to this disease. The noxious exhalations and impure atmosphere of lead and other mines, the absence of sun light, etc., exert also a most baneful and depressing effect upon the constitution, and contribute greatly to the production of the same results. Investigations upon this subject have been most elaborately conducted by Dr. Headlam Greenhow, and are calculated to produce the greatest good, not only to the victims of disease but also to every class, by clearly pointing out the individual causes which contribute to swell the lists of mortality arising from this fatal malady.

5. *The Neglect of Personal Cleanliness.*—That "cleanliness is next to godliness," has passed into a proverb is well known, and it is impossible to overestimate the importance of attention to the agreeable as well as necessary duty of free ablution of the surface of the body; for without this the functions of the skin cannot be properly performed. By those engaged in

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anual labor, and especially in out door pur-
uits, the perspiratory glandulæ are sufficiently
imulated to secretion and excretion, and no
effects are likely to arise from slight irregu-
rities in this respect; but to the sedentary
nd enfeebled the complete ablution of the body
least once a day, by sponge or bath, is abso-
utely necessary to preserve the health. It is
stimated by Erasmus Wilson, F.R.S., that as
any as 2,800 sodoriparous glandulæ exist in
ch square inch of the surface of the body;
nd as the number of square inches on that of
man of ordinary size is about 2,500, the
ores would be 7,000,000, and as each tubule is
bout a quarter of an inch in length, the num-
er of inches would be 1,750,000, or equal to
early twenty-eight miles, and from the orifices
these tubuli there transudes in the form of
erspiration upon an average nearly a pint and
half of fluid in the twenty-four hours, blend-
d with a large quantity of effete materials,
ch as lactic acid, saline matters, etc. It has,
oreover, been abundantly proved by experi-
ent that the skin is an important medium for
e aeration of the blood, and that when its
nctions are interrupted both the temperature
nd vitality of the system are lowered; the
eglect, therefore, of personal cleanliness may
easonably be considered as one of the causes
f that debility of the system which tends to
he production of pulmonary phthisis.

6. *Deficient Bodily Exercise.*—In order that the
utrition of the body may be well and health-
y performed, a due amount of muscular activity
n the open air is most essential. From the
arliest period of time the mandate went forth:
In the sweat of thy face shalt thou eat bread,"
nd he who disobeys this law will be sure to
ear the penalty in impaired health and bodily
igor; for without the exercise of the muscles
he circulation becomes enfeebled, the lungs
erform their functions imperfectly, the aera-
ion of the blood is incomplete, and the oxy-
en consequently, which is necessary to give
itality and energy to the constitution, ceases to
ermeate the tissues, and every organ of the
ody languishes.

It has been before stated that this disorder
as no specific characteristics, but that every
ause which tends to produce debility of the
rame engenders a predisposition to it; deficient
odily exercise, therefore, is a fruitful source of
his disease.

7. *An Insufficient and Improper Diet.*—As a
ause of phthisis I cannot but think that an
nsufficient diet, in this country at least, has been
ery much over-estimated. The rate of wag s
in agricultural districts is, as a rule, lower than anywhere else, and the means, therefore, of supplying appropriate food proportionately deficient, and where there are large and very young families, absolute want sometimes prevails; yet in these cases, if the other conditions of healthy existence be present, such as free ventilation, good drainage, and sufficient sunlight, it is astonishing how little this cause alone seems to be productive of phthisis; and a ready explanation I think may be offered of this: modern chemistry, no less than Divine authority, teaches us that "Bread is the staff of life," and that it contains every element essential to the nutrition of the body; and although it may be necessary for an agreeable, healthy and vigorous existence that this should be combined with other materials, and these of a varied character, such as meat, fish, fresh vegetables, butter, cheese, etc.; still good wheaten flour contains, as a basis, all that is requisite for the support of the human system; in the country, therefore, insufficient food is seldom a cause of phthisis. When, however, there is an evident predisposition, and likewise in the treatment of this disease, it is often of the highest importance to select an appropriate diet, viz., one that is nutritious and easy of digestion, and in which the hydro-carbonaceous, or fatty elements, exist to the fullest amount that they can be digested.

With respect to an *improper* diet as a cause of phthisis too much cannot be said. The disease itself has for its origin a degraded condition of the blood plasma, arising from a mal-assimilation of the food; and nothing is so likely to aid in producing this as a disordered condition of the digestive organs, which is sure to arise if crude or improper materials be used, or if the food be taken too frequently. But to this subject we shall again refer, when we come to the treatment of this disease.

8. *Mental and Emotional Influences.*—Although the several parts of the nervous system have an action independent of each other, still in its entirety each part is so intimately connected that if any one be overtaxed the influence that should be transmitted to the other is correspondingly diminished. We know, for instance, how little inclined we are to mental exertion for some time after a copious meal, because during digestion a large amount of nervous power is directed to the stomach, and a rateably small proportion, therefore, is left for the exercise of the functions of the brain; hence there is, as every one knows, a great disinclination to mental labor, and if this be indulged in, the diges-

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tion of food is proportionately impeded; so likewise when the operations of the cerebrum, whether mental or emotional, be excessive, the organic functions, especially those of the stomach, are sure to suffer; and we have, as a consequence, deficient gastric secretion, and with it the varied symptoms of dyspepsia, leading as a consequence to the mal-assimilation of the food; which, as before stated, is the primary source of this disease. Mental and emotional influences, therefore, especially those of a depressing kind, take a high rank in the causation of this disease.

9. *Insufficient Clothing.*—Throughout the animal creation Providence has supplied to almost every species a covering either of hair or fur to protect them from the vicissitudes and inclemencies of the seasons, leaving to man alone the exercise of his judgment in supplying himself with this obvious want, especially in cold and temperate climates; and although it is more easy to trace inflammations of the viscera, or rather of their coverings, to this cause, there can be no doubt, where there is a predisposition to this disease, and the vital powers are low, that the want of appropriate clothing, by causing congestion of internal organs, leads to a dilated and unhealthy condition of the capillaries, and thus favors the deposition of tubercle; undue cold of the surface also has a tendency by itself to cause vital depression, and in this way to exert a pernicious influence on the system.

10. *Lactation.*—When it is recollected that the primary cause of this disease is a weakness of the digestive and assimilative powers, and that during lactation the energetic action of these is especially required to sustain the additional drain upon the system, it is not to be wondered at that they should frequently fail. When, therefore, it is found that the constitution of the parent is suffering from this cause, as shown by the gradual attenuation of her frame, accompanied by other symptoms of debility, it is highly important that this natural and usually most salutary process should be discontinued; nor have we in the present day with the improved methods of rearing children by artificial food, any reasonable excuse for continuing it, where the health of the mother is palpably failing. Without any hereditary predisposition or other obvious cause, phthisis pulmonalis frequently dates its origin from the excessive exhaustion produced by lactation, even during the natural period; and when this has been easily borne throughout that time, if it be prolonged beyond it, as is frequently the case amongst the poorer classes, it tends to the production of the same result.

Lastly, *Climate.* — When the same means which exist in this country shall have been obtained elsewhere, of ascertaining with accuracy the death-rate and causes of mortality, we shall be able to pronounce with more certainty the degree of influence which climate, strictly so-called, exerts in producing this disease; the evidence, however, which we have hitherto been enabled to gather, all tends to show that from the poles to the equator phthisis is more or less prevalent, and that the disorder, therefore, is dependent rather upon the foregoing causes than on any deleterious influence that either a cold or hot, or dry or humid climate has upon the system; and so far from its prevailing in this country to a greater degree than in any other, the more our inquiries are extended the more they show that just in proportion to our advanced sanitary condition, it is very much less. That the difference is attributable chiefly to this cause is most evident from the great disparity that exists with respect to the prevalence of the disorder, even in this country, between the healthy and unhealthy localities, and between the inhabitants of cities and towns and those who reside in the country; and we gather from this the chief remedy, viz., attention to those laws by which our system is maintained in a healthy condition.

The subject of climate will be referred to again when we come to the hygienic treatment of this disease.

The Lowest Savage Tribes, and how they Look and Live.

IT has been customary among all geographers to describe the inhabitants of the Andaman Islands, which have attained so sad a notoriety by the assassination, on the shores of one of the group, of the lamented Lord Mayo, as negrilloes or dwarf negroes. In their works on geography and ethnology the learned writers of Continental Europe, in their exhaustive cy-

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›pedias, and the more popular conversa-›ns-lexicons, have promulgated this theory, ›ich has been repeated by English writers; .t the true *status* of the Andaman Islander .s been settled by Dr. Frederic J. Mouatt, of e medical staff of the Indian Army, in his in-resting and exhaustive work on these islands .blished in 1863, which epitomized the obser-›tions made by him in 1857, in conjunction .th Dr. George Playfair and Lieutenant eathcote, of the Indian Navy, all three gen-›men of high scientific attainments and prac-›al knowledge in the several departments mmitted to their special charge.

The Andamaners, or Mincopie, are certainly ›t negroes, nor do they bear any resemblance ›her facial or otherwise to them. Dr. Mou-t brought over and presented to the Brit-› Museum the bones of an adult male, the di-ensions of parts of which indicated the height the individual to be only about four feet ten ches. Their color is remarkably black and strous, but they are not woolly headed. either the skull nor the teeth have any of the ›atures of the negro, such as the relative nar-›wness of the cranium, while the face does not resent that projecting development of the ›wer part of the visage which is so distin-uishing and repulsive a feature of the "full-looded" African. The projecting heel also is bsent, and the figure, though dwarfish, is well ›aped and not devoid of the elegance of the ›uropean. They remove the hair from their eads, and anoint their bodies with red earth, hile both sexes go naked.

The Professor describes the Andamaners as a genuine aboriginal race" and as quite dis-inct from the negro or any other type.

Their chief weapons are bows and arrows, and ome of the males carry a kind of spear. It is mpossible to imagine any human beings to be ower in the scale of civilization than are the ›ndaman savages. Entirely destitute of cloth-ng, utterly ignorant of agriculture, living in he most primitive and rudest forms of habita-›ens, their only care seems to be the supply of heir daily food. As climbers they are little nferior to monkeys, being accustomed from hildhood to scale the lofty, straight, un-›ranched trees of the forest in quest of fruit ›nd honey. What the gigantic girth and ›eight of these trees are, may be gathered from › passage in Dr. Mouatt's book:

"The unusual dimensions of the trees on very side continued to strike us with amaze-nent, because it was not one here and another here that presented trunks of such ample di-mensions, and branches shooting at such an altitude, but because such monsters of the vege-table world were general, and could be seen wherever the eye chose to direct its gaze. One was selected, very much at random, for meas-urement. One of our Burmese convicts—first rate climbers, who can ascend the most gigantic trees like monkeys—was sent up to the top with a chain, and its measurement being taken it was found to be seventy-six feet in girth; its mighty stem, which looked like the mast of a great ship, being supported by the smaller trees around, which propped it up as buttresses."

Their canoes, which are fitted with outrig-gers similar to those in use by the Cingalese, are constructed with surprising neatness and skill.

The wants of the Andamaner are few and easily supplied; if he can satisfy the craving of his appetite he is satisfied, and makes no pro-vision for the morrow. His chief diet is wild roots and fruit, which he picks up and eats where he finds them. He knows nothing of agriculture, and makes no attempt to cultivate the ground that it may receive seed and bring forth harvest in due time. The only point re-garding their food in which they show an in-telligence superior to the brutes that perish, is in fishing, and, however humble may be the in-tellectual development indicated by the exer-cise of this art, it does show a certain amount of contrivance and foresight. The greater por-tion of the knowledge we have of the Anda-maner, "as he is at home," is derived from the statements of a Brahmin Sepoy, of the 14th Bengal Native Infantry, one of the transported mutineers, who, after escaping from the convict establishment in April, 1858, passed upwards of a year with a tribe of these savages. He de-posed that they are excellent swimmers from their childhood, and wonderful divers, "fish-ing for shell-fish in deep water." "I have seen," says the Sepoy, "three or four of them dive into deep water and bring up in their arms a fish six or seven feet in length, which they had seized. They could perceive canoes approaching long before they were visible to me, and could see fruits and honeycombs in the jungle which I could not. Their vision pene-trates to great depths in the sea, where they could see and shoot fish with arrows when the object aimed at was not apparent to me. They see well at night, catching fish in the pools left by the tide at that season."

Then the Andamaner has his hook, his net, or his harpoon, instruments in the use of which he is so expert, from constant practice, that he

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knows how to make skillful and fortunate casts with them. The women and children are very expert in procuring and preparing shell-fish, separating them by means of a small kind of adze, tipped with a semicircular blade of iron; with this instrument they also scoop out their canoes. The small Andamanese pig, the only animal except the rat to be found in these islands, appears to be peculiar to the group, though Dr. Edward Blyth, Curator of the Museum of the Asiatic Society, in a report on the zoology of the Andamans, states that the species is to found in the Nicobar Islands, distant seventy-two miles to the south. There is also reason to believe that they are to be found in Sumatra, being probably the diminutive wild swine of that island noticed by Bingley in his "Animal Biography," the passage from that work being quoted in The Journal of the Asiatic Society for 1860, p. 104. These pigs are of a jet black color, with very thick and strong bristles, and small, black, tapering tails. Dr. Mouatt writes of them:

"At the time of our visit we turned out a dozen of them, and our unwonted appearance filling them with alarm, they ran off from us with the velocity of an Indian express train, squeaking like mad. We set off and had a regular hunt after them; far more exciting it was than pig-sticking in Bengal. After discharging some of their rifles, several of the hunters would probably find the pigs between their legs, making them measure their length on the sand. The only cool head and hand in this absurd affair was Walker, the famous "filli-buster," whose every shot brought to grief one of the squeaking fraternity. These Mincopie pigs, he declared to be about as difficult game as he had ever, in the whole course of his adventurous career, come in contact with."

The Andamaner spins ropes, makes wicker baskets, and nets of large size for catching turtle, and smaller ones for fishing. The harpoon is provided with a moveable head, a long elastic cord being attached to it, by which it may be held when fixed in the fish at which it has been hurled; the fishing arrows are made of smooth, hard wood. Their nets, which are constructed with much ingenuity and neatness, are made by "laying-up" small whip-cord, which is manufactured from the rhœa fiber, which possesses the valuable quality of hardening in the water. The small hand nets are neat and elegant in appearance, and are appended to a basket, which the women fasten round them, putting in it the results of the day's search for food. The coarser nets are exceedingly strong, the cords of which the meshes are made being as thick as a man's middle finger. This net is made to close like a bag, and is used for catching turtle; heavy stones to keep it submerged are fastened at intervals of about two feet.

The water vessels of the Mincopie are formed of joints of the large bamboo, and some are capacious enough to contain several gallons of fresh water, which the women are compelled to carry during the peregrinations of their lords.

Captain Blair, of the Indian Navy, the original surveyor of these islands—and who in 1789 fixed the first penal settlement at Mark Island, now known as Chatham Island—in his valuable report (which may be found in the Proceedings of the Governor-General s Council of the 31st May, 1793), gives an interesting description of one of the large caves which are to be found in some parts of these islands, inhabited by flocks of innumerable small swallows, which build the edible nests so much valued by the Chinese as a delicacy and a restorative. "The principal cave," he writes, "Is situated at the south point of Strait Island (in Diligent Strait), which is rocky, but not exceeding forty feet in height. The entrance, which is washed by the tide, is an irregular aperture of about six feet wide and the same in height. On advancing thirty or forty feet the height diminishes to four feet, and the breadth increases to twenty. Here it is rather dark, and very warm, and the top and sides of the cave are covered with nests; an astonishing number of birds twittering and on the wing, whisking past the ears and eyes. This, contrasting with the melancholy noise of the waves resounding through the gloomy cavern, formed a very uncommon and interesting scene. The birds are probably induced to choose this situation from the caves being inaccessible either to snakes or quadrupeds, and probably defensible against birds of prey. The nests in general are, in form, the quarter of a sphere of 2½ inches diameter; one of the sections being firmly fixed to the rock, the other section leaves the nest open above.

"The substance is glutinous; those most in estimation are white and semi-transparent. It has been doubted, and various conjectures have been formed, of what the nests are composed. In smaller and more accessible caves I have observed a mucilage exuding from the rock, moistened by exhalations from the sea, which washes the lower part of these caves. This mucilage on being dried had both the color, texture and taste of the nest; and what removed all my doubts of this being the sub-

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ınce, was seeing the birds in immense numrs resorting to a cave very productive of the ıcilage in the month of January, which is ə season in which the birds build their nests. may now be presumed that they are neither of imal or vegetable, but of a mineral substance."

These edible nests, which are to be found in ə caverns on the coasts of Borneo, Celebes, d other islands of the Eastern Archipelago, ve been known to realize their weight in ver in the Chinese markets, where they are ld to form preparations of soups; the newly nstructed nests are more valuable than those ving eggs, while the nests in which broods young birds have been hatched, from the adixture of feathers, command the lowest price.

It is the opinion of all who have had opporınities of judging, that the Andamaner is not a nnibal, as has been generally believed. The hole population is migratory, moving about ınerally in small parties along the coast, as om the sea they draw their chief support, hile hunting parties proceed into the interior kill the wild pig and collect such fruits as ıe soil spontaneously yields.

The Mincopie shave all their hair from the ead and body, the women performing the part f barbers with wonderful dexterity; their only ızor being a chip of shell or glass. They ave no medicines, a mixture of red earth and ırtle oil forming the universal specific for very ailment; the surgical art is also no furıer advanced among them, and all flesh 'ounds are dressed with leaves, while scarifiıtion is resorted to in the case of bruises and wellings.

Their habitations are the most simple and inartistic that can be imagined. Four posts, two long and too short, and either crooked or straight, are fixed in the ground, and are then roofed with palm leaves, connected with some skill. *Voilà!* There is the home of the Mincopie. The houses are generally erected in a circle beneath some trees, and near a spring or stream of water. Their method of maintaining their fires for cooking purposes is very remarkable, and displays an unusual amount of ingenuity. Dr. Mouatt writes:

"The larger trees are charred in the interior about six feet from the ground until, as they are very dry and gradually burn away, a great hollow is formed in the center, in which they allow about three feet of ashes to accumulate in such a way that at the bottom of the heap live fire is always found, which, with great judgment, is always so placed as to be against the wind and rain, so that there is no fear of its being extinguished by either of these causes. Over the fire in these strange ovens the Mincopie can grill his little pig, fry his fish, calipash and calipee his turtle steaks, and not improbably prepare his turtle soup. Great pains are taken in the preservation of these trees, which they never entirely destroy."

The Andaman islands abound in reptiles, in centipedes and scorpions, as well as mosquitoes and all the insect life of jungles. To protect himself against these latter the native covers himself with a thick coating of yellow earth, which when dry is impervious to the bites of his tormentors.

Disinfectants.

THE following comprehensive article on this subject is published in The Philadelphia ſedical Times:

Within the last two or three years a great leal has been written upon the subject of disnfectants, with the result of unsettling what vas considered at one time a settled matter; ɔut in the doubt which remains, certain princiɔles can be seen looming up and apparently ɨhaping themselves into positive truths.

Chief among these is the folly of attempting ɨo disinfect the atmosphere. It may be possiɔle to decompose sulphuretted hydrogen in the ɑir by chlorinated lime; although even this is somewhat doubtful. It certainly is possible to cover up one stink by another; and this is what is probably done with the saucers of chlorinated lime yet seen about some hospital wards in which antediluvian ideas prevail; but we have learned that contagion is certainly not sulphuretted hydrogen any more than it is a bad smell, for the worst odor may exist without a contagion, and the most deadly contagion may lurk in a fluid or an atmosphere free from odor.

Contagion appears to be one of two things, organic alkaloids or other compounds of some sort, or else living germinal matter, animal or vegetable.

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It is self-evident that a substance chemically powerful enough to disorganize organic compounds must be inimical to human life—that a material sufficiently powerful to kill germinal matter of low organization must be destructive to germinal matter highly specialized, and therefore highly sensitive.

It follows that any atmosphere capable of supporting human life is incapable of destroying contagion.

An efficient disinfection of a room, its atmosphere, and the furniture in it, certainly cannot be carried out with any person in the apartment. If it can be done at all, it will be by adopting the following plan:

Take a large iron pot, put in it a little stand, such as the cheap tripod used by chemists, place on this an iron plate containing flowers of sulphur thoroughly wet with alcohol or (probably better still), with turpentine, underneath the plate set a tin alcohol lamp, then put the whole on bricks in the middle of the room, whose chimney, doors and windows have been closely sealed, the drawers, closets, etc., having been widely opened. Light the lamp underneath the dish, and if the sulphur do not take fire previously, when it begins actively to melt, ignite it. Leave the room at once, closing the door. Unless the apartment becomes densely filled with the fumes, far beyond what could be supported by a human being, the attempt at disinfection cannot be of any service.

Even when this method of disinfection is carried out most thoroughly, it is still uncertain how completely the chamber is disinfected; to rely upon it to the exclusion of free thorough ventilation afterward, would be the sheerest folly.

It is evident that, for ordinary purposes, the only method of disinfecting an apartment is to be found in ventilation, a dilution of the contaminated atmosphere by pure air until the point is reached at which the contagion is too slightly concentrated to affect human beings.

The question now arises, What is the province of disinfection? and the answer evidently is, To alter the constitution of liquids and solids.

We think here it is necessary to pause to get clear ideas about a matter which has been strangely confounded.

The cholera is approaching, the cry is to disinfect the cesspools. The cholera is here, the cry is to disinfect the discharges. It is evident that the objects to be gained in the two cases are different. There are no "contagion germs" in the cesspools, but putrefying organic matter. There is no putrefying organic matter in the cholera discharges, but a poison to be destroyed—a poison whose nature is not known, but is believed to be connected with life.

Before the subject of disinfection can be made perfectly clear it is necessary to keep in view the two different results to be achieved, namely, the prevention of putrefactive fermentation in organic matter, and the destruction of germs already existent.

Having a distinct recollection of what we desire to do, it is next in order to determine what we have to do it with.

Dr. Jeannel arranges the disinfectants as follows: 1. Oxidizing agents: air, oxygen, ozone, hyponitric acid. 2. Dehydrogenizing agents: chlorine, hypochlorites, iodine, bromine. 3. Deoxidizing agents: sulphurous acid, sulphites, hyposulphites. 4. Desulphurating agents and coagulators of albuminous matters: lime, salts of alumina, of zinc, of lead, of iron. 5. Antiseptic agents, which kill germs: carbolic acid, its congeners and substances containing it, thymic acid, etc. 6. Absorbing agents: charcoal.

It would not be difficult to make objections to this classification. Thus, the chief value of sulphurous acid as a disinfectant appears to depend upon its power of killing the low forms of life. It is, therefore, an antiseptic, and the possession by it of any powers beyond this is somewhat doubtful. Still the classification is sufficiently accurate for practical purposes, so that we may take it for our guide in studying the subject of disinfecting putrefying matter. The method which nature employs for purification, as in water containing organic material, is by oxidation; and it seems as though, in our present state of uncertainty, the only disinfectant worthy of absolute trust would be an agent capable of entirely oxidizing organic matter. Fire is such an agent; but it is too destructive, and often not applicable.

Permanganate of potash possesses the power of oxidizing dead organic matter freely; but, as every one knows who has applied it to a raw surface, its action on living tissue is feeble; and, according to Carmao-Dumenzez and Demarquay, portions of lungs and liver immersed in a concentrated solution of the salt undergo putrefaction. It is not known whether experiments have been made as to its power of destroying living animal germs; and when to these facts are added its costliness and the large amount of it required for any service, because it uses its own oxygen only in the destruction of organic matter, it becomes evident that its practical value is slight. The same remarks

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pply in a still more forcible manner to the ther substances in class No. 1.

In regard to the second class of substances, ılorine, in the form of chlorinated lime, is the nly one worthy of attention; the extreme ostliness of the other preparations renders ıem of no practical value. Chlorinated lime ; certainly a very rapid and effective disin- ıctant, especially in regard to sulphuretted ydrogen. Its odor is, however, only a little etter than that of the latter compound, and roof seems wanting that it acts with equal apidity and effectiveness upon organic matter. ts comparative costliness and its bad odor cer- ainly prevents its occupying the first rank as disinfectant for uses such as those of which re are now speaking.

The third class of substances are far too ostly for use as preventives of putrefaction n a large scale.

Lime, the first substance in the fourth class, s probably the oldest of all the disinfectants, ınd in some respects is efficient; although, on he whole, its general use is to be reprobated. It does not act merely as a desulphurating and oagulating agent; it, like the other strong al- alies, causes catalytically a slow oxidation of organic matter. Thus, ozone of itself will not oxidize olein, but if potash be added to the mixture the reaction commences at once; and it is notorious that a compost heap which has lime in it rots, *i. e.* oxidizes, much more rapidly than one which has none of the alkaline earth in it. This action of lime is, however, too slow for ordinary purposes; moreover, there are very serious objections to its use as a disin- fectant.

The poisonous principles contained in sew- age, etc., whatever their nature may be, are probably volatile, and lime, acting as a strong base, sets free large quantities of ammonia in animal matter undergoing decomposition. It may be that volatile poisons, alkaloids, are lib- erated with the ammonia; but whether they are or not, it is a well-known physical fact that a volatile substance in escaping carries off with it even non-volatile materials, and facilitates to a still greater degree the escape of principles only less volatile than itself.

Our choice of disinfectants for sewage, pri- vies, etc., is therefore narrowed down to the fourth and fifth classes.

Owing to its cheapness, the impure sulphate of iron, copperas, is by long odds the most available of the substances of the fourth class. The question of the comparative value of it and carbolic acids admits of not a moment's debate. The comparatively extreme dearness of the lat- ter agent, its horrid odor, and its very marked poisonous properties, would forbid its use were it vastly more effective than the iron salt. In truth it is not. There is no reason for believ- ing that carbolic acid affects any compounds formed before it is used; it certainly does not decompose sulphuretted hydrogen, it simply ar- rests decomposition by acting as a parasiticide, and when from any reason the percentage of it in a solution containing organic matter be- comes reduced below a certain point, it leaves the organic matter free to recommence putre- faction. Not so with copperas, it is antiseptic, but it also decomposes sulphuretted hydrogen, precipitating sulphide of iron; it is decomposed by ammonia, the oxide of iron, a persistent, powerful ozonizing agent, being precipitated; it slowly but persistently attacks organic mat- ter about it, oxidizing it and being reduced to a sulphide of iron. As copperas is very cheap, theoretically it is the most efficient and valua- ble of the disinfectants, and practical use has shown—its price being considered—that it is the best. The common mistake is in not using it in sufficient quantity. At the ordinary drug stores it is sold for from seven to fifteen cents a pound; and twenty-five pounds of it seems a great deal to the purchaser. Professor Genth, however, says that, by the quantity, impure copperas can be bought for seven-eighths of a cent a pound; and at this price, in time of a cholera epidemic, our streets should be watered with its solution.

The value of sulphate of iron does not rest, it must be remembered, upon theory only, but also upon experiment. In February, 1873, Al- bert Eckstein published an account of his at- tempts to disinfect a privy which was used daily by one hundred persons, and the results are so interesting that they are here transcribed:

1. Two pounds of sulphate of iron in solu- tion. After from two to three hours all bad smell had disappeared, but in twelve hours all the influence of the disinfectant was lost.

2. Sulphate of copper in solution, the same.

3. Two pounds of sulphate of iron in crys- tals; their effects lasted two days.

4. Sulphate of copper, the same.

5. Sulphurous acid in solution rapidly lost its effects, and was exceedingly irritating to the respiratory organs.

6. Two pounds of impure carbolic acid filled the house for two days with such a disagreea- ble smell that it was impossible to tell whether the original odor was destroyed or covered up.

7. Two pounds of sulphate of iron in a parch-

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ment sack exerted a disinfecting influence for three full days, and when the parchment sack was drawn up it contained only some dirty, odorless fluid.

8. Two pounds of the best chloride of calcium in the parchment sack disinfected the privy for at least nine days.

We have reason to know that the chloride of calcium spoken of by Eckstein is not less efficient than he asserts it to be, and it ought to be one of the most commonly used disinfectants.

Whatever disinfectant, however, be used, it must never be allowed to take the place of *cleanliness*. Large accumulations of organic matter practically never are, if they indeed can be, thoroughly disinfected.

As has already been stated, it is practically impossible to disinfect the atmosphere, and therefore it becomes the more important to destroy at once disease-germs wherever they exist in a solid or in a liquid. The practical deduction from this is that in a disease like the cholera, in which the poisonous matter is chiefly — or at least believed to be—emitted with the stools, the latter should be attacked the instant they leave the body. No patient suffering from cholera should be allowed under any pretence to use a water closet or privy, but always a closed receptacle, in which some material capable of destroying the disease-germs has been previously placed. In this way the *materies morbi* is reached as soon as possible after leaving the body, and has not nearly so great chance of doing harm as when the stool is only disinfected after the patient has arisen from it.

The question next comes up for consideration as to what substance shall be employed for destroying the germs already existent in the discharges. Here especially has the prior place been claimed for carbolic acid. Granting, it is said, that it is not a disinfectant, it is a prince among antiseptics. The most convenient known test of the activity of an antiseptic, *i. e.*, a destroyer of disease-germs, is believed to be its power of killing bacteria and similar low forms of vegetable life. Now the experiments of the great advocate for the use of carbolic acid (Dr. Sansom) have shown that a large number of substances are more active in destroying microscopic organisms than is carbolic acid, and that the corrosive sublimate is about eight times as strong; one part of the mercurial salt in 6,000 parts of water sufficing to kill organic germs, whilst one part of carbolic acid in 750 parts of water is required for the same purpose.

When it is further borne in mind that the odor of carbolic acid is most penetrating, permanent and offensive, that it does not readily dissolve in the various liquids desired to be disinfected, and that it is so terribly poisonous as to have no advantage on such score over the corrosive sublimate, it may be well affirmed that when small quantities of the disinfectant are needed, as in cholera cases occurring in private practice, the bichloride is more available than carbolic acid. Moreover, corrosive sublimate actually alters organic compounds, parting with a portion of its chlorine, and being reduced to calomel.

Corrosive sublimate dissolved in Labarraque's solution would probably make the best disinfectant for the purposes now spoken of—certainly far more efficacious than carbolic acid, much more manageable, no more poisonous, and cheaper.

It is, however, a question whether copperas in saturated solution or in powder, freely used, is not, after all, the best material for rendering choleraic discharges harmless. The salt is so cheap that the excreta might be saturated with it at a scarcely appreciable cost, and so used it would certainly kill any living germs.

In conclusion, let us sum up the points which it has been attempted to make in this article:

1. It is useless to attempt to disinfect the atmosphere, and therefore great care should be exercised to destroy, as far as possible, the poison-germs so soon as they leave the body.

2. Copperas is the most available disinfectant for ordinary purposes; in certain cases (chiefly for urinals) chloride of calcium is very good.

3. Carbolic acid is not disinfectant, but antiseptic; and, on account of its odor, is very disagreeable; further, it is not so efficient as some other substances for the purpose of killing disease-germs, and for the purifying of cholera discharges either a mixture of corrosive sublimate and Labarraque's solution, or copperas in solution or powder, is to be preferred.

A Fish Diet.—A fish diet is a great humanizer of the tempers of mankind. It consumption tends wonderfully to render them more kindly to one another, and consequently tames the passionate disposition to crime. As carnivorous animals are always the most fierce and violent, so become human beings who have carnivorous stomachs. Could such stomachs have an occasional respite by the consumption of fish, the world should be all the better for it.—*Dr. Merryweather.*

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Stray Thoughts.

BY THE EDITOR.

THE organs of the body that do the work of the world are really only two; the muscles which do the mechanical work, and the brain which does the intellectual work. The lungs, stomach, and heart are servants of the body, and not workers in the world. The body itself consumes nearly all the force it generates in maintaining its own integrity. The same blood that serves for performing muscular work in the muscles furnishes the nourishment for brain work in the brain.

Old people bear want of food best, adults next, and youths, especially children, least.

Hippocrates taught that the heat of the body was innate and caused life, appetite, etc, instead of what is true, the reverse. For 1,500 years this false doctrine prevailed.

There should be no labor where there is much hunger.

The true theory of animal heat was discovered in 1783 by Lavoisier, though not generally accepted for thirty or forty years after this.

Liebig's theory that foods are heat-producing and flesh-forming has been generally received for many years, but is now discarded as incorrect.

The daily labor of a healthy man, of 150 pounds weight, has been ascertained to be equal to climbing a ladder one mile high. And this is equal to lifting 396 tons one foot high.

The blood itself is now supposed to be the seat of all the chemical changes in the body that develop force. Thus we come back again to the doctrine taught in the Bible, that "The blood is the life."

When a man is lying on his back asleep, or at rest, the amount of carbonic acid excreted in a minute is eight times less than when he is working hard in a treadmill—pretty good evidence that the force of the body is largely derived from the oxidation of carbon.

Vegetable food furnishes the capacity for long continued work; but flesh food, yielding its supply of force more instantaneously, is better for rapid muscular action of short duration. In a long race a rabbit will outrun a cat. In a short race the cat will win. In a long race the deer will distance the leopard. In a short race the leopard will be the victor.

People should choose their food with reference to their work. The brain worker should eat sparingly or not all of potatoes, while the muscle worker may eat freely of this vegetable. Long continued physical and mental labor may be sustained on brown bread, oatmeal and cream, eggs and a reasonable supply of good fruit.

The health of a Cornish miner is said to break down from an over strain of his heart. After his day's work is done, to reach the open air, he has to climb from 600 to 1,200 feet; and his food, which is principally fat and dough, does not furnish sufficient force for such rapid work. Thus the heart is over-taxed in pumping blood to the lungs and body, and the result is long congestion and a breaking down of the vigor of the heart in early life.

Men who have muscular work to do that requires great physical exertion in a short time, should prepare themselves for it by rest, food and sleep for several hours before the feat.

In typhoid fever there is a rapid but morbid increase of metamorphose of tissue. The temperature of the body increases four or five degrees above what is natural, the lungs throw out more carbonic acid, the kidneys excrete more urea, the sufferer lies helpless, weak, exhausted, hardly able to move; and yet the changes undergone in his blood and tissues consume more force than can be exerted by the strongest man. The animal heat generated in typhoid fever in excess of the normal amount, would raise 150 pounds one mile high. In olden times the treatment of this formidable disease was by means of purging, vomiting and bleeding. Thank God, in modern times this method has gone into disuse, and typhoid fever is treated by pure air, cooling drinks, and a prevention of this rapid metamorphosis of blood and tissue by reducing the temperature of the body by means of cold water to 99°. In typhoid fever the body is on fire. Every available substance is burned up. Even the urea is, in a bad case, burned into the carbonate of ammonia. The cause of typhoid fever is believed to be some poison, some living germ that propagates in the blood. This poison is in some way connected with animal excrement from waterclosets, privies, barnyards, cesspools; and

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if these were always kept clean there would be no typhoid fever. A Quaker friend says the disease is rare among Quakers. Their greater cleanliness, no doubt, explains it.

In cholera we have phenomena exactly the reverse of what is seen in typhoid fever. The heat of the body is below the normal standard, often sinking to 95°. The prostration is so great, from the lack of combustion in the body, that a patient often dies with the slightest exertion. There is not force generated sufficient to keep the heart and lungs in action. The vessels seem to be constricted, and the tissues deprived of fresh blood. Medicines are of little use, the only hope being in economizing the life for us and restoring, by artificial means, the force necessary to circulate the blood, in friction and pressure, and making good the loss of animal heat by an artificial supply.

A person recovering from typhoid fever is very much in the condition of a man who has been greatly overworked and underfed. It requires several weeks of thoughtful care to so rest and feed the body that recovery shall be perfect. A little over exertion, a little excess of eating are sure to retard recovery, perhaps bring on a relapse that will end in death.

Most people believe in trusting nature, but there must be some restrictions to implicit faith in her. If one jumps from the roof of a high house with the trust in nature that she will bring him to the ground, his trust will not be in vain, but if he thinks she will do it without breaking his bones and bruising his flesh he will be greatly mistaken. Nature is a kind mother when we use her rightly, a malevolent friend when we ask of her impossibilities.

In diabetes the temperature of the body is about two degrees lower than it should be. The farinacious food being carried out of the body in the form of sugar and furnishing no heat or strength for work. In treating this disease it is advisable to avoid such food as contains starch—which is converted into sugar in the system—to use mild acid fruits as drink, and food rather rich in oils and fats, the latter maintaining animal heat and strength if there is digestive power sufficient to manage them. There is generally a great craving for the fats, instances being on record where a diabetic patient dying, could only think of the roasted fat the angels were preparing for him in heaven. The best fats are cream, sweet fresh butter, and not fat meat.

The diseases of the young are at least three-fourths of them preventable.

No number of fine days should induce one to put on thin clothing in place of winter wear in March or April. At no season of the year is the daily bath more needed to keep the skin clear and active.

As spring approaches be careful of your diet—old potatoes and other vegetables are apt to be stale and poisonous, and should be chosen with care. Brown and unleavened bread should be used daily, with fruit to keep the bowels open and the system from being obstructed; avoid pills and physic generally, spring debility comes more from winter's excesses than anything else.

General Debility is at the head of a large army of invalid soldiers. They are placed on guard in almost every family. The causes are many, but the only cure is obedience to the highest law of life—perfect hygiene for body, mind and soul.

Women would be healthier, happier, and more beautiful if they were half as thoughtful of their bodies as of their dress; if they were as particular not to injure their stomachs as they are not to soil their silks and satins, if their lungs were as well supplied with pure air as their heads are with false hair; if their muscles were as well educated to motion as their eyes are to fine colors. Most fashionable women could save time enough every day from their toilet to take exercise sufficient to maintain the body in perfect health. Most hard working women could save time enough from their duties daily to harmonize the forces of the body so that an ill balanced condition would be almost impossible.

Few things ruin the body and soul of men and women so rapidly and completely as excesses in the indulgence of sexual passion. If there is one subject that human beings ought first and foremost to study and understand it is this part of their nature, and yet it is one on which there is the gravest ignorance. And this ignorance is wholly unnecessary. The means of information on these subjects are abundant and only prudery and false modesty keeps people from it. There are no more unhappy, unholy sinners in this wide world of ours than those who wantonly abuse their sexual nature.

The body is a thing of time, subject to contending influences, able to be lifted to the highest pinnacle of health and happiness, or sunk to the lowest depths of darkness by sickness and disease. If, then, you wish to enjoy the present life, in a full and true sense of the word, do everything in your power by every lawful agency to maintain the health and integrity of the body—most wonderful mechanism of the Infinite Creator.

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EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

KEEPING YOUNG FOR EIGHTY-FIVE YEARS.

I. How can a man retain his youthful spirits during old age?

ANSWER.—Peter Cooper, now eighty-four years old, at a recent birth-day reception given by the Arcadian Club of New York, in reply to complimentary speeches, said:

"Measured by the achievements of the years I have seen, I am one of the oldest men that has ever lived; but I do not feel old, and I propose to give the receipt by which I have preserved my youth. I have always given friendly welcome to new ideas, and I have endeavored not to feel too old to learn; and thus, though I stand here with the snows of many winters upon my head, my faith in human nature, my belief in the progress of man to a better social condition, and especially my trust in the ability of men to establish and maintain self-government, are as fresh and as young as when I began to travel the path of life. While I have always recognized that the object of business is to make money in an honorable manner, I have endeavored to remember that the object of life is to do good. Hence I have been ready to engage in all new enterprises, and, without incurring debt, to risk the means which I had acquired in their promotion, provided they seemed to me calculated to advance the general good. This will account for my early attempt to perfect the steam engine, for my early attempt to construct the first American locomotive, for my connection with the telegraph in a course of efforts to unite our country with the European world, and for my recent attempts to solve the problem of economical steam navigation on the canals; to all of which you have so kindly referred. It happens to few men to change the current of human progress as it did to Watt, to Fulton, to Stephenson and to Morse; but most men may be ready to welcome laborers to a new field of usefulness, and to clear the road for their progress. This I have tried to do as well in the perfecting and execution of their ideas, as in making such provision as my means have permitted for the proper education of the young mechanics and citizens of my native city, in order to fit them for the reception of new ideas, social, mechanical and scientific; hoping thus to economize and expand the intellectual as well as the physical forces, and provide a larger fund for distribution among the various classes which necessarily make up the total of society. I feel that nature has provided bountifully for the wants of all men, and that we need only knowledge—scientific, political and religious—and self-control, in order to eradicate the evils under which society has suffered in all ages. Let me say, then, in conclusion, that my experience of life has not dimmed my hopes for humanity, that my sun is not setting in clouds and darkness, but is going down cheerfully in a clear firmament, lighted up by the glory of God, who should always be venerated and loved, as the infinite source and fountain of all light, life, power, wisdom and goodness."

HEART DISEASE.

II. What rules should be observed by persons with heart disease?

ANS.—Live moderately and quietly. Don't get excited. Avoid everything which can stimulate the heart to excess, either physically or mentally; follow a good dietetic regimen, without being exciting; keep up the strength of the heart and of the great vessels. Children should be ordered to take moderate exercise, and use cold water to the skin; later on, the choice of a profession should be made which would neither entail too sedentary nor too active and exciting a life.

The excesses of the table are always troublesome, particularly in the case of aortic lesions. The food should not be of too exciting a nature; but when the patient has reached the congestive stage, or even more, the dropsical, a kind of dry diet becomes necessary, so as not to augment by the immoderate ingestion of liquids the mass of the blood to be moved, and to comfort the heart and vessels. Therefore no soups or broths should be given. It is necessary that the invalid should have free action of the bowels every day; he must avoid alcohol, and it is also necessary to prohibit smoking. The patient ought even to avoid frequenting places where there is too much smoke. Coffee, as well as tea, must also be prohibited. The sudden change of temperature occasioned by taking too warm baths, frequenting ball-rooms and theaters, is particularly to be dreaded by sufferers from cardiac disorders.

It is better to live in a valley, where the atmo-

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sphere is not humid and which is sheltered from high winds, than on a mountain, in consequence of the greater pressure and the more considerable density of the air.

WOMEN STUDENTS AND HARD STUDY.

III. Can women students endure as hard study as men?

ANS.—The report from Cornell University shows that they can. The following correspondence relates to this subject:

EDITORS OF MAGENTA: Reading in your number for January 16th, a letter from Cornell University which stated that "many" of the young women, students of that institution, failed to keep up with their classes, I addressed a note to President White, asking for more detailed information. I rely on your love of fair play for the publication of his answer.

A GRADUATE.

NEW YORK, Feb. 2, 1874.

DEAR SIR: I have heard of but a single instance among the young women at our University, of inability to keep well up with the class. As a rule, the young women average about ten per cent. better on the examination than do the young men. The one young woman who took a degree at the last Commencement stood easily among the first fifteen in a class of a hundred. But the young women have done better than that, they have raised the average of conscience and manliness and decency more than ten per cent. As to health, they seem quite as well as the young men; certainly they present a smaller number of excuses. I remain very truly yours,

ANDREW D. WHITE,
President Cornell University.

THE SIAMESE TWINS.

IV. Were the Siamese Twins one person or two? that is, did each feel the other's pains and pleasures, or not?

ANS.—Dr. Hollingsworth, their physician, says: "The evidences during life that the twins were physiologically distinct were very numerous and apparent. They were different in form, tastes and disposition; all their physical functions were performed separately and unconnectedly. What Chang liked to eat Eng detested. Eng was very good-natured, Chang cross and irritable. The sickness of one had no effect upon the other, so that while one would be suffering from fever the pulse of the other would beat at its natural rate. The twins not rarely suffered from bilious attacks, but one never suffered at the same time as the other, a circumstance which seems somewhat singular in view of the close connection which the *post mortem* has shown to exist between the livers of the pair. Chang drank pretty heavily, at times getting drunk; but Eng never felt any influence from the debauch of his brother, a seemingly conclusive proof that there was no free interchange in their circulations.

The twins often quarreled, and of course, under the circumstances, their quarrels were bitter. They sometimes came to blows, and on one occasion came under the jurisdiction of the courts. After one of these difficulties Chang and Eng applied to Dr. Hollingsworth to separate them, stating that they could not live longer together. Eng affirmed that Chang was so bad that he could live no longer with him, and Chang stated that he was satisfied to be separated, only asking that he be given an equal chance with his brother, and that the band be cut exactly in the middle. But as Dr. Hollingsworth advised very decidedly against this, and declined to interfere, cooler counsels prevailed.

In August, 1870, Chang suffered from a paralytic stroke, from which he never fully recovered; and during the last year of his life he several times said to Dr. Hollingsworth: "*We* can't live long."

On Thursday evening preceding their death, the time having arrived for their departure from the house at which they were staying, the twins rode a mile and a half in an open wagon. The weather was very cold, the night being the severest of the winter. Chang had been complaining for some days of cough, with distress and actual pain in the chest. He was so unwell that his wife thought he would be unable to bear the trip; but he finally went. On Friday morning Chang reported that he felt better, but that he had had such pain in the chest and so much distress that he thought he should have died.

The twins slept in a room by themselves, or with only a very young child present; and some time in the course of Friday night they got up and sat by the fire. As they were accustomed to do this frequently nothing was thought of it by those of the family who saw them, even though they heard Eng saying he was sleepy and wanted to retire, and Chang insisting on remaining up, stating that his breathing was so bad that it would kill him to lie down. Finally, however, the couple went to bed again, and after an hour or so the family heard some one call. No one went to the twins for some little time, and when they did go Chang was dead and Eng was awake. He

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old his wife that he was very "bad off," and could not live. He complained of agonizing pain and distress, especially in his limbs. His surface was covered with a cold sweat. At his request his wife and children rubbed his legs and arms, and pulled and stretched them forcibly. This was steadily continued until he went into a stupor, which took place about an hour after the family were alarmed. The stupor continued up to death; according to the statements of the family there were no convulsions.

As bearing upon the question, What was the cause of the death of Chang? it is important to state that Dr. Hollingsworth had repeatedly told Chang and Eng that in his opinion the death of one did not necessarily compromise the life of the other; that he could separate them by cutting close to the body of the dead one, without killing the living one. It would appear possible, in view of this, that the death of Eng was not simply the result of fright.

HAIR AND TEMPERAMENT.

V. Is the hair any index of temperament?

ANS.—We presume it is, but don't profess to know much about it. As long as girls will wear as much false hair as that naturally belonging to them, it would be puerile to attempt to read character or disposition in the fashion and character of the locks displayed. Mr. Creer, in his volume on hair, for instance, quotes the following indications of character founded upon the set and texture of flowing locks, from a book recently published in Paris, entitled, "Secrets of Beauty:"—"Coarse black hair and dark skin signify great power of character, with a tendency to sensuality. Fine black hair and dark skin indicate strength of character along with purity and goodness. Stiff, straight black hair and beard indicate a coarse, strong, rigid, straight-forward character. Fine dark brown hair signifies the combination of exquisite sensibilities with great strength of character. Flat, clinging, straight hair, a melancholy but extremely constant character. Harsh, upright hair is the sign of a reticent and sour spirit, a stubborn and harsh character. Coarse red hair indicates powerful animal passions, together with a corresponding strength of character. Auburn hair, with florid countenance, denotes the highest order of sentiment and intensity of feeling, purity of character, with the highest capacity for enjoyment or suffering. Straight, even, smooth and glossy hair denotes strength, harmony and evenness of character, hearty affections, a clear head and superior talents. Fine, silky, supple hair is the mark of a delicate and sensitive temperament, and speaks in favor of the mind and character of the owner. Crisp, curly hair indicates a hasty, somewhat impetuous and rash character. White hair denotes a lymphatic and indolent constitution; and we may add that, besides all these qualities, there are chemical properties residing in the coloring matter of the hair-tube which undoubtedly have some effect upon the disposition. Thus, red-haired people are notoriously passionate. Now red hair is proved by analysis to contain a large amount of sulphur, whilst very black hair is colored with almost pure carbon. The presence of these matters in the blood points to peculiarities of temperament and feeling which are almost universally associated with them. The very way in which the hair flows is strongly indicative of the ruling passions and inclinations, and perhaps a clever person could give a shrewd guess at the manner of a man's or woman's disposition by only seeing the backs of their heads."

SLEEPING ON THE BACK.

VI. Is it healthy to sleep lying on the back?

ANS.—We think it is not generally healthy to sleep continually on the back, though for change it may not be harmful.

SHAPE OF THE NOSE.

VII. Please to tell us how we may change the shape of the nose?

ANS.—We don't know how to do it. Some of the London advertisements speak of a nose machine to mold the nose to any desired form. We have no faith in them. Of course the shape of the nose can be changed more or less in early life; but all efforts to change it will, we think, make it worse instead of better.

SHOULDER BRACES.

VIII. Do you approve of shoulder braces to prevent or correct the stooping posture acquired by a school girl? If so, what kind?

ANS.—We do not. They are an unmitigated nuisance. The muscles of the back and chest are the best shoulder braces. Make them strong and you will need no other.

DROPPING TO PIECES.

IX. It is impossible for me to remove my corsets without feeling as though I should "drop to pieces." What shall I do?

ANS.—This feeling will all pass off in a short time. We can gently strengthen the muscles of the sides and chest with gentle exercise, labor of some active sort, bathing and friction. Be patient for a few days and all will be well. Ladies do not suffer half so much in leaving off corsets as men do in quitting tobacco.

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

THE LIGHT OF HYGIENE.

Our sickly race in gloom of night,
In darkness long has been,
Groping the way without the light,
The light of hygiene.

Chorus.—The light! the light! the cheering light!
The light of hygiene!
'Tis this alone dispels the night,
By this the truth is seen.

Experiments have long been tried
With every poisonous drug;
The poisoned ones of course have died—
These many a grave have dug.

If nature had been left alone,
To battle with her foes,
She might have conquered many a one,
And from her couch arose.

The healing power within is found,
There ever it abides;
We need not roam the earth around
To find where it resides.

The "acts" of drugs! 'tis all a hoax,
Dead matter cannot act;
Their hated presence but provokes
The system to eject.

These vile intruders have no right
Within life's citadel;
So nature rallies in her might
These aliens to expel.

A man has broken nature's laws
By living far too quick;
Must he be poisoned just because
He's taken very sick?

Reason would say, "Your ways amend,
Cease from each vile abuse;
On this alone can you depend,
In drugging there's no use.

"You cannot an indulgence gain,
From some renowned M. D.,
To break life's laws, escape the pain,
Evade the penalty."

Then let us study nature's laws,
And as we learn, obey:
Espouse the hygienic cause—
Good bye to drugs for aye!

R. F. Cottrell.

The sweetest songs are those
That few men ever hear
And no men ever sing.

The clearest skies are those
That farthest off appear
To birds of strongest wing.

The dearest loves are those
That no man can come near
With his best following.

TO MY BOY.

[The following, which may be styled *graded verse*, adopts that feature of progression so common everywhere in nature and art, as in the crescendos and diminuendos in music, gradation in colors, leaves, sea shells, etc.]

Come to my knee
You busy little bee,
And I will let you see
What will rejoice both you and me,
And make you a noble boy,
Our pride and joy.

Ever try
For the true and high,
Scorning to tell a lie,
Nor fret, nor whine, nor cry;
But cheerful be, as the bright butterfly,
And when you play be earnest and gay,
And work in the very same way.

Be polite
And join no fight,
And scorn all petty spite;
Nor rule, like dogs, by brutal might,
But firm as a rock, stand ever for the RIGHT!

And be
Open and free,
As the ever sparkling sea;
And yet as calm as the setting sun,
My darling one.

Be kind,
Pure and refined,
To loving words inclined,
Striving to banish from the mind
Bad thoughts and words, and elevate the soul
Into the nobleness of self-control,
Fitting it for the brighter life,
Beyond this world of strife.
So may our darling boy
Reach heavenly joy.

E. D. Babbitt.

Master, if there be doom,
All men are bereaven!
If in the universe,
One soul receives the curse,
Alas for heaven!
If there be doom for one,
Thou, Master, art undone.

Were I a soul in heaven
Afar from pain,
Yea, on Thy breast of snow,
At the cry of one below
I should cry again.
Art Thou less piteous than
The conception of a man?

Robert Buchanan.

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EDITORIAL DEPARTMENT.

Herald of Health AND Journal of Physical Culture
Advocate of Manhood, A Higher Type Physical, Intellectual and Moral

NEW YORK, APRIL, 1874.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

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TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

The Temperance War. — Since we wrote a month ago the temperance revival has burst out into a blaze that lights up the moral horizon from one end of the land to the other. It works like a contagion, setting fire to the hearts of ardent, enthusiastic temperance men and women in large and small towns, and warming up to new life, cold, conservative temperaments, who are generally ashamed to manifest any enthusiasm, or do any indiscreet or improper thing. Multitudes cry out against this enthusiasm, declaring it will do no good, that the reaction will be greater after it. There may be truth in this; still not so much as many think. We do not cry out on sultry days in summer when the air is loaded with sickening gases, against a sharp thunder-storm that clears and cools everything, and lays the dust, and allows us all to breathe freer, even if it does become sultry again in a few days time and another storm is needed. There are times when a short sharp thunder-storm is better than a week of steady drizzling rain; and there are times when the moral world needs to be fired up with just such a work as we are having now, even if some of the proprieties do seem to be outraged. If there had not been a condition needing a temperance revival, all the men in the world could not have excited it; but there was a need of it. There was need in southern Ohio that fathers, husbands and sons who were going on the road to ruin should be in some way reached, and that suddenly. We know well enough that the women in that region have suffered long, that they have waited long, that they have borne in anguish of heart the trials that come from drunkenness; that women have lived with sots, and been abused and beaten and robbed by them of homes and happiness, until the very heavens have cried out against it; that mothers have seen their sons, the joy, hope and pride of their lives, become unfit for earth, unfit for heaven—blots on the fair face of civilization, blanks in the world of thought and progress, curses to themselves and all around them. Is it any wonder that women are thus forced to unsheathe the purest and brightest talents of their nature—aspiration and song—their only means of communion with the highest source of light and joy, and use it against the greatest enemy of light and peace and purity—intemperance. For one we glory in their bravery and bid them God speed. The same methods may not be best everywhere. A thunder-storm is not needed in all places at the same hour; but wherever there is need of labor against intemperance it is perfectly legitimate to use the best weapons there are at hand.

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And now before closing let us add that, while the temperance revival is often necessary, yet the great work in this field must be done by education, civilization, and daily and hourly growth in goodness. If men want to be temperate they must be manly, they must respect themselves, they must keep their minds open to improvement, they must be occupied in some useful field of labor, they must read good books and keep good company. Women must try to make homes sweeter and brighter; a home which is a little heaven on earth is more tempting than any gin house, and, except in a few instances, men would not seek happiness there if they could find more of it elsewhere.

The Temperance Reform is closely allied to the Health Reform. They are children of the same parent. Whatever advances one advances the other; whatever hinders one hinders the other. Let each one do something in some way to aid both on, and the world will yet be a bright, sweet, beautiful abode for us all.

PURIFYING THE BLOOD.—It is a popular idea that the blood occasionally needs purifying. It is believed that at certain seasons of the year, especially in the spring, and under certain conditions of disease, the one thing needful is that the blood should be purified. And, further, it is believed that the means of effecting this purification is contained in some potent medicinal mixture, or some compound of "roots and herbs," or in the mysterious powers of some subtle drug.

This generally acknowledged necessity of blood purifying is the open avenue of approach for "patent medicine" makers and venders to the pockets of the multitude. Large fortunes have been realized by these cunning sharpers, with their bottles of "Purifying," "Renovating," and "Resurrection" *bitters, cordials balsams* and *balms,* which have been *known* to cure hopelessly desperate and "given-up" cases of all kinds of diseases, from that of inflamed *corns* up to the last stages of consumption. In evidence of the truth of the assertions of the patent medicine man," there are given "almanacs," filled with dead men's certificates of wonderful cures. If a man die in a good cause it is pretty good evidence of his sincerity; so, of course, these certificates should be believed, and a bottle of the patent compound bought, and the blood purified with it.

This common belief in the efficacy of medicine to purify the blood originated in the medical profession, and will even there find its advocates to-day. So that, virtually, it is a medical dogma popularized. But, methinks, it is a dogma that is working a great deal of abuse and many fruitful errors, and supporting in affluence a swarm of patent medicine makers and venders.

That the blood often becomes impure, and needs purifying, I do not propose to deny; but it is against the methods which is taken to purify the blood that I wish to raise objection. Blood impurity is not anything that drugs can neutralize and drive out of the system. If the blood is purified at all it must be through the action of the organs designed by nature to effect it. The lungs, the skin, the liver, the kidneys and the bowels are the organs designed by nature to effect the purification of the blood and to preserve its purity. If the blood is impure, permit the free action of these organs, and it will be speedily purified. If medicines are used at all they should be judiciously and intelligently prescribed by one who understands his business.

The lungs, if supplied with pure air, are every minute industriously laboring to remove impurities from the blood, and they remove vast quantities of injurious substances. If, however, the person confines himself to a close room, where the impurities given off from the lungs are again taken in, then not only is the process of purification hindered, but impurities are continually being added.

What use, then, is it for that person to take "bitters" to purify his blood, and all the time be taking in impurities in the air, and also preventing the removal of those injurious substances which, in a pure air, the lungs are ever throwing off? Better "throw physic to the

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ogs," and open your windows; or, what is ətter, put yourself out-doors and purify your lood in the natural and the *effectual* way.

The skin is another hardly less important rgan for the purification of the blood. There ı a continuous exhalation from the surface of ıe skin, through its minute pores, and it is ıtimated that a greater quantity of matter removed from the system through the skin ıan by any other organ. Therefore, if a per-ɔn desires that his blood should be made pure, e should assist nature by keeping his skin lean by washing himself *all over* at least once week, and not let the pores get stopped up ith dirt and grease.

The liver is another of nature's depurating rgans. Its office is to remove noxious mate-ials from the blood. Its healthy activity is ntimately dependent upon the state of the tomach. Disordered states of the stomach dis-urb the action of the liver. Overloading the ıtomach renders it inactive and disordered. An nactive stomach gives an inactive liver. Hence ve hear much about inactive livers and bil-ousness, when the root of the trouble is in the ıtomach. Therefore, if we would secure the ıealthy activity of the liver and obtain its aid n purifying the blood, we must so arrange our liet as not to injure a healthy state of the stom-ıch. If the liver is inactive, or the person ɔilious, a fast of a day or two and a spare diet or awhile, will relieve the liver and blood much ɔetter than any of the usual drugs which are ıupposed to act upon the liver. To purify the ɔlood, then, use the organs nature has provided or the purpose. HENRY REYNOLDS, M. D.

NOTE BY A HOUSEKEEPER OF TWENTY-FIVE YEARS' EXPERIENCE.—If a servant must make your oatmeal porridge, stir a little cold water into the meal first, then add it to the boiling water. The water must be boiling, and lively, too. If you make it yourself, and have a quick, lively hand, especially the one that stirs sprinkle the dry meal slowly with one hand and stir quickly and lightly with the other, and you will have a more delicious dish than it is possible to make the other way.

DEPRESSION OF SPIRITS.—Dr. Carpenter says: "There are many persons in whom emotional states are induced by meteorological conditions; the one by a dry, clear, bright atmosphere, the other by that close, damp, 'muggy' state of the air which seems to lay a 'wet blanket' upon all their enjoyment, both bodily and mental. And precisely the same depressing influence is often experienced from deficient action of the liver, causing an accumulation of the materials of bile in the blood; and it is just as apparent to the physician that the elimination of these by appropriate remedies, so as to restore the blood to its normal purity, thereby removes the moral *depression*, as it is that the introduction of a minute quantity of hasheesh into the blood produces a moral *exaltation*.

"In these days of eager competition, again, it is extremely common for a psychical state to be induced by the overtasking of the brain; which every intelligent medical practitioner recognizes as essentially physical in its origin but which yet manifests itself chiefly in moral, and not unfrequently also in intellectual perversion. The excess of activity is followed, as its natural result, by a state of depression, in which the subject of it looks at everything, past, present and future, in a gloomy light, as through a darkened glass. His whole life has been evil, he has brought ruin on his affairs, his dearest friends are in league to injure him. At first this moral perversion extends itself only to a misinterpretation of actual occurrences, which only differs in degree from that which we observe in persons of a morose temper. But with the advance of the disorder the mind dwells on its own morbid imaginings till they come to take the place of actual facts; and in this way *hallucinations* are generated—*i. e.*, creations of the imagination, which are accepted as real occurrences. Now here there is no primary intellectual perversion, the reasoning powers are not disturbed, the patient can discuss with perfect sanity any question that does not touch his morbid feelings; but the representations shaped by his own mind, under the influence of these feelings, being received as

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truths, to the exclusion of his common sense, all his actions are based on those erroneous data. This condition is merely an intensification of that just described, and the physician can no more doubt that it depends upon an unhealthy condition of the bodily frame than that the delirium of fever and the fantasia of hasheesh are dependent upon the presence of a poison in the blood."

How the Brain is Supplied with Blood.—The brain is supplied with blood by four arterial trunks, which enter the cranial cavity at no great distance from one another, and then unite into the "Circle of Willis," from which are given off the various branches that distribute arterial blood to every part of the brain-substance. After traversing this the blood returns by the veins, greatly altered in its chemical composition, especially as regards the loss of free oxygen, and its replacement by various oxy-compounds of carbon, hydrogen, phosphorus, etc., that have been formed by a process analagous to combustion. Now if one, two or three of the arterial trunks be tied, the total supply of blood to the brain is diminished; but in virtue of the "Circle of Willis," no part is entirely deprived of blood, and the functional activity of the brain is still maintained. If, however, the *fourth* artery is compressed so as to prevent the passage of blood, there is an *immediate* and *complete* suspension of activity, the animal becoming as unconscious as if it had been stunned by a severe blow; but recovering as soon as the blood is again allowed to flow through the artery. In fact the "stunned" state produced by a blow on the head is *not directly* dependent upon the effect of that blow upon the brain, which may have sustained no perceptible injury whatever; the state of insensibility being due to the paralysis of the heart and suspension of circulation induced by the "shock;" and the like paralysis, with the same result, may be produced by a blow on the epigastrium (acting on the great "solar plexus" of nerves), or some overpowering mental emotion. Again, there is a curious affection termed hysteric coma, which consists in the sudden supervention of complete insensibility and the equally sudden and complete return of conscious intelligence, without any other indication of brain disorder. The insensibility may come on while the patient is talking, so as to interrupt the utterance of a sentence, and the moment that it passes off the series of words is taken up and completed, without the patient being aware that it has been interrupted. With our present improved knowledge of the action of the "vaso-motor" system of nerves in producing local contractions of the arteries, and of its liability to be influenced by those emotional irregularities in which hysteria essentially consists, we can scarcely doubt that this affection is due to a temporary disturbance of this circulation through that agency. Further, if the blood transmitted to the brain, though not defficient in quantity, be depraved in *quality* by the want of oxygen and the accumulation of carbonic acid (as in asphyxia), there is a gradually increasing torpor of the mental faculties, ending in complete insensibility.

We Repeat, for the benefit of new subscribers, what we have said so often before, that the more a young lady's waist is shaped like an hour-glass the sooner will the sands of life run out.

Feeding Children.—Letter from an Enthusiastic Mother. — *To the Editor.* — The January number of The Herald of Health is just received, and an article therein on the value of oatmeal prompts me to write the letter which I have so long contemplated.

When my baby was five months old, for the sake of my own health, I weaned him from the breast. I gave him cream and water, with a little sugar. In two weeks' time his bowels were so constipated that I fully realized that some change must be made in the food. I, therefore, made oatmeal gruel by boiling oatmeal in about twice the usual quantity of water for an hour and a half or two hours.

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When properly cooked, I poured it through a ne sieve. The part which passed through ras, when cold, of the consistency of jelly. Then, in a quart cup, I mixed one-half pint of hin cream and oatmeal gruel—about one gill f each—added one teaspoonful white sugar, nd filled the measure nearly full of boiling vater. This food he relished, and in every vay it agreed with him; and if there ever was a hild that grew any faster than mine did when ed with oatmeal and milk, I think it would be wonder. People would say: "How your baby rows," and, in the same breath (when I told vhat his food was), would say: "Why, you'll tarve him!" But by putting in less water I ound it was too hearty, causing him to vomit; nd once in possession of the key to my child's health nothing turned me aside.

My child is now a year and a half old, his food is three parts milk and one part gruel. He is very large, strong and active, has twelve teeth, weighs thirty pounds, and in all the time has not lost an ounce of flesh, even at the most trying time—warm weather.

That I am enthusiastic in regard to oatmeal should not seem strange, and I wish that of the many mothers throughout the land, those who find it necessary to provide other than the natural food for their children, would try my recipe. They would find doctors' visits few and far between.

Recipe for Gruel.—One cup oatmeal, two quarts of hot water, or more. Boil 2½ hours. Strain through a fine sieve.

I prefer this way to the plan of soaking the oatmeal in cold water; which I have tried, but find that the taste is not so pleasant.

Health and Strength—Sedentary Habits.—A man may be healthy without being strong; but all health tends, more or less, toward strength, and all disease is weakness. Now any one may see in nature, that things grow big simply by growing; this growth is a constant and habitual exercise of vital or vegetative force, and whatever checks or diminishes the action of this force—say harsh winds, or frost—will stop the growth, and stunt the production. Let the student, therefore, bear in mind, that sitting on a chair, leaning over a desk, poring over a book, cannot possibly be the way to make his body grow. The blood can be made to flow, and the muscles to play freely, only by exercise; and, if that exercise is not taken, nature will not be mocked. Every young student ought to make a sacred resolution to move about in the open air at least two hours every day. If he does not do this, cold feet, the clogging of the wheels of the internal parts of the fleshy frame, and various shades of the stomachic and cerebral discomfort, will not fail in due season to inform him that he has been sinning against nature, and, if he does not mend his courses, as a bad boy he will certainly be flogged; for nature is never like some soft-hearted human masters, over-merciful in her treatment. But why should a student indulge so much in the lazy and unhealthy habit of sitting? A man may think as well standing as sitting, often not a little better; and as for reading in these days, when the most weighty books may be had cheaply, in the lightest form, there is no necessity why a person should be bending his back and doubling his chest, merely because he happens to have a book in his hand. A man will read a play or a poem far more naturally and effectively while walking up and down the room, than when sitting sleepily in a chair. When a man does sit or must sit, let him at all events sit erect, with his back to the light, and a full free projection of the breast. Also, when studying languages, or reading fine passages of poetry, let him read as much as possible aloud; a practice recommended by Clemens of Alexandria, and which will have the double good effect of strengthening that most important vital element, the lungs, and training the ear to the perception of vocal distinctions, so stupidly neglected in many of our public schools. There is, in fact, no necessary connection, in most cases, between the knowledge which a student is anxious to acquire and the sedentary habits which students are apt to cultivate.

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Dr. Susan Everett's Lectures.—Mrs. Dr. Susan Everett has been lecturing in New York city to ladies, with very great success. Her first course was delivered in the chapel of Dr. Deems's church, and the room was not large enough to accommodate the throng who pressed to hear her. Seats, stairway, aisles, platform, and every available inch of room was eagerly seized. Women came two hours in advance to get front seats, and patiently sat till the hour of the lecture. It was with the greatest difficulty the lecturer could get to the platform through the thronged aisles. Women came from Brooklyn, Jersey City, Newark, and points fifteen to seventeen miles away, to hear a woman who could rouse them to new life and effort, and teach them the ways of health.

The second course was given in Robinson Hall, a much larger place, but this too was crowded in the same way, during two courses. The fourth course was delivered in Dr. Anderson's church, and the building at the opening lecture was packed more densely than ever before, and all the standing room around the platform, in the aisles and about the doors and parlors was jammed with women who stood there during the long lecture to gather words of wisdom from the lips of the speaker.

Another course was also delivered in Harlem, and in a few days still another will be delivered in Brooklyn, in the lecture room of Henry Ward Beecher's church. These lectures are just what are wanted in these great cities, and will do a great deal of good.

An old stager was compelled by his worthy spouse to "join the cold water army," which he did, promising never to touch a drop of anything else except in case of sickness. He has never been well since.

Loss of Memory of Words, and its Cause.—One of the most remarkable results of recent pathological research has been the discovery of the condition termed *aphasia*, or "loss of memory of words," upon malnutrition of a certain part of the cerebrum; and the tracing of this malnutrition back to an interruption in the supply of blood. In this curious mental infirmity—which often begins to show itself before there is any other evidence of cerebral disorder, but which is now recognized as a most serious indication of impending mischief—the subject either forgets the words he wants for expressing his ideas, or he uses *inappropriate* words in their place. It is obvious that he knows what he wants to express, but cannot recall the words in which to convey that knowledge to others. There is no paralysis of speech, for his articulation is quite unaffected, so that he can repeat the words he wants if they are suggested to him by others. In a case formerly under my observation, the aphasia went on gradually but very slowly, increasing for three or four years, showing itself at first as to only a few out of the way words, but gradually increasing until no intelligible language seemed to be left, except that of swearing, which came forth in a torrent when any restraint was put on the patient's bodily activity, which continued very energetic until near the close of life. In another case, recently mentioned to me by a medical friend, who was a near connection of the patient, the disease ran its course in a few months. Cases of this kind almost invariably terminate in apoplexy. Now it may be said that we have here only only the evidence of *synchronous* disease of the brain and disorder of the mind; so that the *dependence* of the latter upon the former is not made out. But the very curious discovery was made a few years ago, by J. Hughlings Jackson, that the locally impaired nutrition of the brain in these cases is usually attributable to "embolism" of the middle meningeal artery, whereby the passage of blood through it is greatly impeded; this "embolism" consisting in plugging of the artery by a fibrinous clot brought from the heart, where it has been produced by valvular disease. In the second of the cases just referred to, the usual brain-lesion having been found and the middle meningeal artery having been examined, the *fons et origo* of the mischief was found to be, not "embolism," but a morbid de-

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osit on the inner wall of the artery, producing a corresponding obstruction to the circulation. Looking, then, to the fact that *immediate* cessation of mental activity is distinctly and unmistakably produced by the *entire* suspension of blood circulation through the brain, how can the physiologist refuse to recognize, in his *local* reduction of the circulation, the physical cause of that *limited* reduction of psychical activity which so distinctly follows it.

DEATH IN A RUSSIAN BATH.—The story has been going the rounds of country papers that a man has recently died in a Turkish bath in New York, but it is not true. These are the facts: A gentleman from New Jersey, who had called at a Russian bath establishment on Broadway, to take a bath, died before he got from his dressing-room to the bathing apartments. The coroner, in an examination of his body, found serious heart disease. As he did not take a Russian bath, of course it did not kill him. He would have died, no doubt, in his carriage had he been there, or in his own room. While on this subject, it may as well be said that Russian baths differ greatly from Turkish baths, which are more gentle, thorough and beneficial; and so far from being dangerous, if properly given, they are the very best bath there is, both as a luxury and as a cleanser and educator of the skin, and in the cure of many diseases. People need not be afraid of them more than of a plain warm water bath.

MEDICINE FOR THE IMAGINATION—There are in this country a number of persons who deal in medicines for the imagination, with considerable success. Prominent among these are those who sell magnetized paper. This paper is thin silken, but strong paper, such as is generally used for patterns, and is of any color, or of several colors; some preferring one and some the other shade of red, yellow or blue. It is cut in pieces a foot long and two-thirds as wide, and may be of any size and shape. Three or four pieces are laid on a woolen carpet, or over the woolen pantaloons on the right leg, and held with the left hand. Vigorous rubbing from left to right with the other hand, or both hands may be used and the rubbing done from the middle each way. Four or five strokes from a vigorous, healthy person render the paper magnetic, so it will adhere to the wall, or to the palm of the hand held downward, or it will follow the hand with considerable force. If done in a dark room, bright flashes of light may be observed when the hand is brought in contact with the paper, or when two pieces are brought together. These phenomena are only the common electrical phenomena, developed by friction. The paper soon loses these properties, and has no virtue except as it works on the imagination. Such medicine modern physicians do not use so much as the ancients did. Materialism has largely the control of medical practice, and medicine must be such as can be seen, tasted, felt, and such as produces some effect when taken internally. "Imaginary medicine is only a relict," say modern doctors, "of ancient superstition." It seems to us, however, that a physician has just as good a right to use some means to regulate the morbid, diseased imagination, as he has to use means to regulate a morbid stomach, or a deranged liver, or a feeble circulation. A healthy imagination is a great help to a sick person, and a morbid one a great hindrance to recovery; and any simple means of correcting it without injury is proper, if done without superstition and charlatanism.

DEATH OF CHARLES SUMNER.—We have to chronicle in this number the death of Hon. Charles Sumner, United States Senator from Massachusetts. Though a man with many enemies, he was one of the most conscientious of American statesmen, holding high above partisanship the honor and love of country. His death will leave a blank not easily filled. The cause of his death is, at this writing, believed to have been *angina pectoris*, a disease of very great danger, often connected with ossification of the arteries about the heart, and other grave complications, producing the most distressing symptoms. It is believed by his physicians

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that the remote cause was in the injuries he received by Brooks many years ago. Whether his habits of life were such as to aggravate his disease, is a question on which physiologists and hygienists will differ; but Mr. Sumner was a man of magnificent frame, king-like in his bearing, scholarly in his habits, cold and austere to the multitude, something of a German in his habits of eating and drinking, using the pipe and ale and beer freely, and working harder than he should. Now that he is gone, all parties can but mourn his loss.

Changes in the Weight of Newborn Children.—1. All children lose in weight the first few days after birth.

2. The loss begins the first few hours after birth, due to the evacuations of the bowels and bladder; this can, however, sometimes be temporarily compensated for by an abundant supply of nourishment, and thus be converted into a slight increase of weight, lasting, however, scarcely more than six hours.

3. The increase, as a rule, begins on the second or third day.

4. The loss is more precipitate than the increase, so that up to the seventh day scarcely more than the half of what was lost is regained.

5. There is no casual relation between the beginning of the increase and the falling off of the remnant of the cord.

6. Boys, as a rule, begin to increase in weight sooner than girls, undergoing, probably, a smaller loss, and showing a greater gain.

7. The increase of weight is greater with children of those who have previously borne.

School-Room Hygiene.—The fifth annual report of the Massachusetts State Board of Health recommends that the public schools be supervised by medical men. The supervision includes warming, ventilating, lighting, cleansing, and otherwise looking after the health of the buildings and pupils. We recommend that the word "hygienist" be substituted for "medical men." There are multitudes of physicans who are not hygienists, and a great many hygienists who are not physicans. If physicans are to be popes over everything we shall have trouble. Some will want one school and some another; but there are, or should be, no sects in hygiene. This belong to the people. One of the best hygienists in New York is not a physician at all, but he can warm, light, clean, ventilate and care for a school-room in the most approved manner.

A Woman's Opinion.—Phœbe Cousins, in her short address on temperance, in New York, made the emphatic and sweeping assertion that she believed the ladies of America, especially in the East, are responsible for most, if not all, the drunkenness that exists among men, as they not only ask, but induce young men to drink wine. In her opinion, as long as the sale, manufacture and use of liquor are made respectable by statute there is no use in trying to suppress the business. It might be asked, with good reason, "Why the women don't go to Congress, instead of going to the liquor stores?" In her opinion, it would be a good thing for them to try it. Let the Sanborn and all other investigations be stopped, and let Congress listen to the complaints of 5,000,000 of women. Another plan Miss Cousins suggests is to organize the sentiment, the morality and the spirituality of the women of the country, and put them to work at home, and not on the streets. She concluded by saying that if women were really necessary to the success of the temperance movement, they should be accorded the proper means of working out the good result—the elective franchise.

A Frenchman, who recently died, left in his will a provision that his body be given to the Paris Gas Company to be put into a retort for the manufacture of gas; giving as a reason that as he had always used his mind for the illumination of the public, he desired his body applied to the same purpose.

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If a child wants a light to go to sleep , give it one. The sort of Spartan firmness ich walks off and takes away the candle, d shuts all the doors between the household eer and warmth and the pleasant stir of even- g mirth, and leaves a little son or daughter hide its head under the bed-clothes, and get sleep as best it can, is not at all admirable. ot that the dear mother means to be cruel ien she tries this or that hardening pro- ss, and treats human nature as if it were ay to be molded into any shape she may ease. Very likely she has no idea whatever the injury and suffering she causes, or per- ps her heart aches; but she perseveres, inking she is doing right. Children are oft- obliged to endure a great deal of unnecessary ardship by being subjected to absurd methods discipline which every good mother ought avoid.

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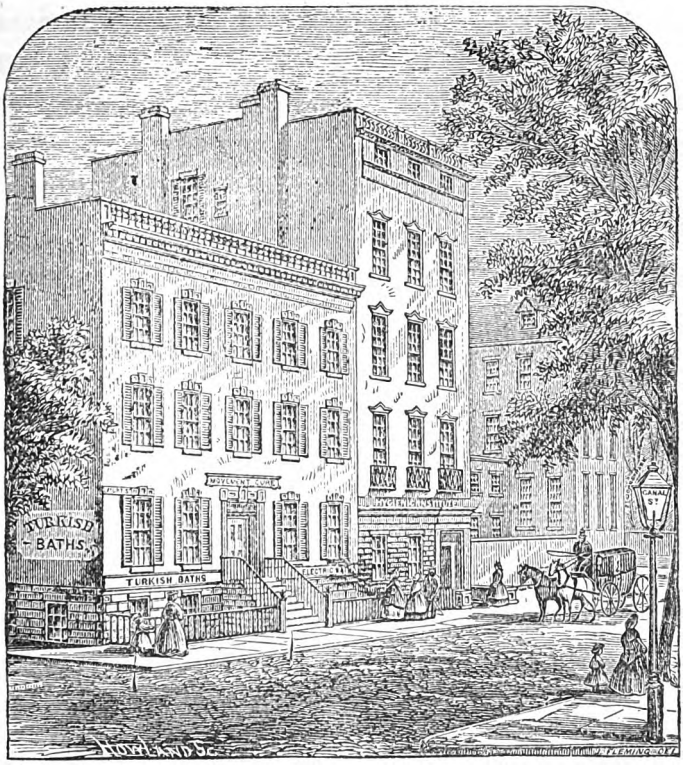
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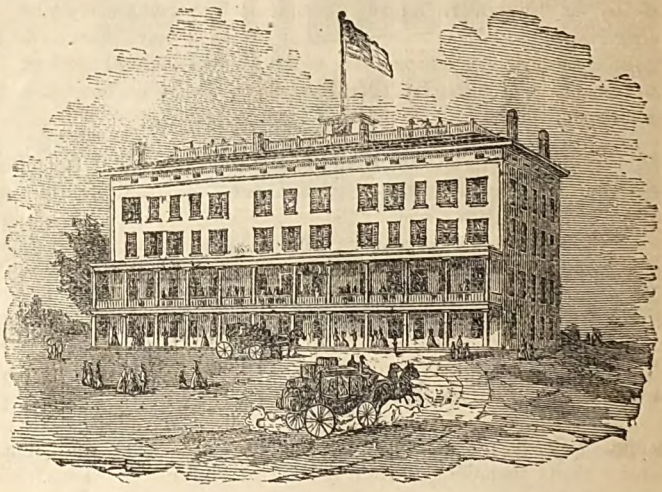
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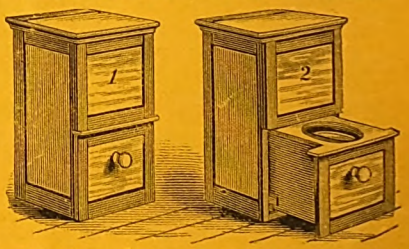


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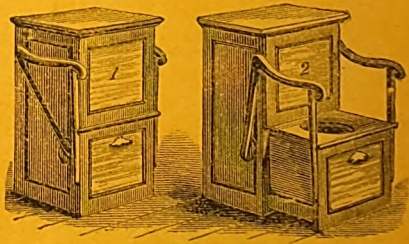
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VOL. 23, No. 5.] NEW YORK, MAY, 1874. [NEW SERIES.

PUBLISHED MONTHLY BY WOOD & HOLBROOK, 13 & 15 LAIGHT STREET.

ESSAYS ON SANITARY AND SOCIAL SCIENCE.

(Number 5.)

The Cost of the Sot.

FROM *The World*, NEW YORK.

IN estimating the cost to the community of a single drunkard it is safe to assume that his toxication will not begin, in any form whatever, till he is fifteen years old. Street children, with all the temptations of a vagrant life, ry rarely get under the influence of liquor l they have reached that age, and children no have any home, it is safe to say, never do. ven those who are limited for house-room to e few square feet of a tenement are pretty re to avoid the perils and pleasures of dram-inking the first fifteen years of their lives. A ringent law prohibits the sale of liquors to y minor under eighteen, even, without the nsent of the guardian or parent, and public inion itself effectually curbs any such prac-ce. There are many who begin to drink at out this age, and are confirmed in the habit early manhood, driven on by favorable sur-undings and the transmitted tastes and pas-ons of a dissolute ancestor; but their habits ave cost the community nothing till after they ave passed their fifteenth birthday. To avoid any exaggeration, and to make the elements in the problem as simple as possible, it may be well to go to the bottom of the social scale and take, as a typical instance of the waste in excessive drinking, a boy who has had the nurture and the education which any industrious mechanic in this city, or any of the higher class of day laborers could give. So far as drunkenness is concerned he has reached fifteen with the negative virtue of neither knowing good or evil, without bias or predilection either for or against the habit. Up to that time he has been reared and educated with every reasonable prospect that the cost of bringing him to manhood will prove a good investment in every sense of the word. The first loss which the community feels from his intoxication is the entire disappearance of the sum expended to bring him to a point where he could get drunk. The value of an able-bodied, clear-headed, healthy boy, fifteen years old, who has been to school for about the average length of time—six years—is not easy to com-

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pute. Down South a "likely" boy fifteen years old would have brought, a few years ago at a forced sale, $800. But *this* boy is more than "likely." He is educated in the simpler branches of knowledge. He may have also learned the rudiments of a trade, and become already, in a small way, what society has a right to expect he will become in a very few years in a large way, a producer. The mere private cost of his production is by no means small. He has had his share besides in the protection and safety of government and the accumulated comfort of the pact, all of which has been lavished on him in the legitimate hope that he would in his time shoulder a part of the taxes, and aid in accumulating comfort and capital for the future. As a child, supposing that his life has been passed in the family of a mechanic, his expenses for fifteen years cannot fall much below this estimate:

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Share of rent at $14 a month in a family of five persons	504
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School books	30
Miscellaneous, sickness, etc., in all	275
Total	$2,979

All this on the supposition that the family home has included three rooms only, that the family has had not more than five persons in it, all told, and that food and clothing have been of the plainest description, with enough of both to produce a healthy and vigorous growth; but with nothing to vary the monotony of fare limited to the necessaries of life. He has cost as a member of a family, and that a family inexpensive and economical, about $3,000; as a citizen he has cost a much smaller sum, but still one that is fairly appreciable.

THE COST TO THE STATE.

Schooling, six years	$63
Taxes—State, fifteen years	165
Taxes—County, fifteen years	123
axes for national expenses, fifteen years	195
Total	$546

As a person up to the age of fifteen has done nothing to earn the cost of the protection which a civil government gives in all its different branches, it is evident that, so far as he is concerned, the aliquot share expended on him is so much paid out to rear and educate; a direct investment which the community makes in him with the hope of a return, precisely as the same community, or a part of it, invests in a canal or railroad, with the difference that the return is apt to be a higher one and that the risk is also greater. This investment amounts to at least $546. It is direct, and easily computed. There is another just as certain, but which cannot be so readily reckoned. The total valuation of the country is placed at $30,068,518,507 in real and personal estate, and all this accumulated wealth of the parts work together to make life easier for the young man, who till he is fifteen years old is adding nothing to it. He stands, too, the representative of another expense as tangible, but even less easy to give definitely. About half the population die before they reach the fifteenth year from birth. That is, to bring 500 persons to this point requires the birth and support for a longer or shorter time of 1,000; and the cost to the community of each at the age just mentioned is enhanced by the expense of those who fail to reach it. There are a hundred thousand other influences which are paid for in the labor of others, and which form a part of the great investment lodged even in the son of a laborer, one without the advantages or culture of wealth. They cannot be reckoned in dollars and cents, but they exist none the less, and should be taken into account and kept in mind as part of the loss which the community at large suffers when one man fails to make any return for the talent confided to his care. The gross, perceptible, enumerable parts of his cost price are, to his family in money, $2,979; to his country and the community, $546; his share of the income from $30,000,000,000 of property, and the partially developed life wasted and cut off that his might reach maturity. In all, the direct outlay is $5,000, an understatement in two directions.

The estimate itself is a very small one, cut and pared to bring it far under the truth and avoid the possibility of exaggeration; and it is taken in a station of life where the conditions are as simple as possible, and cheap in proportion as they are simple. It is a comparatively easy task to reckon up the cost price of a boy who lives in a tenement house, has coarse food and clothing and no education but the teaching of a public school, whose value is given in a dozen reports, because it is limited to the small sum of $5,000. It is a large fraction, but after all, only a fraction of the community whose expenses are restricted to food, clothing and shelter; the fraction does not include more than one-fourth of those engaged in earning their livelihood. The children of the other three-fourths of the community—in other words, three-fourths of the children cost more than $5,000 apiece to raise, and are worth more when they are raised.

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At fifteen years a man may begin to be a producer—he very often does not begin to do so till years after—and he may also begin to be a drunkard. Neither are likely before this age, though either contingency may occur years earlier, as well as after. Neither happen at once; and while there are no tables accessible which determine the average training required, to gain proficiency in either direction it will be fair enough to consider the man for three years as neutral, whichever course he takes. He is not an actual burden on society or himself; neither does he produce much, if anything, over and above his own sustenance. Whether the entire cost of his production shall be capital worse than wasted, so that received economically it would have been altogether better for the community if he had been throttled at an early age, depends largely, if not entirely, in the absence of any organic disease in his constitution, on his becoming addicted to the use of intoxicating liquors. Society has spent some thousands of dollars directly on him, and devoted some millions of capital to providing him with an education and throwing around him influences which will make his life a profitable investment.

But society has also taken some pains and trouble to render null and void its own efforts. In this city, for instance, the community has licensed over 8,000 places at which the means of forming the habit of drunkenness can be found, and society pays four times as much to support them as it does to protect and educate the boy whom it has raised at such trouble and expense. By crowded, ill-ventilated dwellings, by insufficient nutrition, by ignorant and depraved ancestors, by congenital traits and taints without number, society does its best to turn the boy into a drunkard, and make its better efforts useless; and in justice to society it should be said that the attempt is very often successful. He enters his eighteenth year a drunkard. Three courses are before him. He may continue to be a producer to an extent great enough to support himself, and to do that alone—a burden on the community, but only in a negative way; not meeting his full share of the burdens of the industrious, but at the same time not directly adding to them. He may become a pauper, and fall a dead weight on the producers of the community, to be cared for as well as protected. And he may become a criminal—not only a burden on society, but an enemy to its welfare, to be abated and restrained at all hazards; no longer either a floating waif or a dead weight on society, but an expensive antagonist, with whom war is a expensive as war always must be. At best the state loses by his intoxication completely and entirely the direct investment of $5,000. At eighteen the man's labor is worth at least $728 a year, or $14 a week. All this is lost, and it amounts to the interest on nearly twice the sum spent for the man's education. The average life of a man addicted to ardent spirits is about seventeen years, and the sum lost in this way is $12,376.

It is even greater than this. At twenty a person in health has an even chance of living forty-four years; a dram-drinker's chances are cut down to about one-third of this period; and the difference between these figures is a loss of $19,656, and adding together these sources of loss and damage to the community the total deficit; even where the man has enough energy and method left to keep himself from becoming an actual burden on the community is as follows:

Original investment	$ 5,000
Loss of labor during life (seventeen years)	12,376
Loss of twenty-seven years of labor by drink	19,656
Total	37,032

This is the direct cash loss in a case where the training of the victim ceased at fifteen, and had up to that time been of the cheapest possible description. Every additional year added to the time devoted to education adds proportionately to the investment loss in the first instance, as well as to the value of the labor of which society is deprived. The value of a liberal education, for instance, would raise the first item to $15,000, and the others would be raised, if not proportionately, at least to a very great extent. If he becomes a pauper at thirty—and the chances that a man who is drinking hard at eighteen should be a pauper before he is thirty are good—he must be supported till he dies, which, at the average he started with, will be at thirty-five. For five years the industrious of the community are taxed to support him. The average yearly expense of maintaining the idiots and paupers of Massachusetts, according to the annual reports on charities, is $123.24, and the cost of this typical drunkard is increased to $37,648. So far he has done nothing, or done too little; he has failed and come short of his productive powers through the influence of liquor.

The history of seven-eighths of the prisoners of New York, collected by the Prison Association, shows that a very large share of those who drink go farther, and commit crime. They become then the most expensive members

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of the body politic. If he becomes one of the 20,000 yearly arrested for crimes against property and person—arrests independent of those included under intoxication and disorderly conduct—he destroys property averaged at $20, his arrest and trial costs about $50, and his expense at State prison is $200, and on Blackwell's Island $150 a year. If he is sentenced for five years to State prison at the end of his twelve years of drunkenness, he costs the community, as his share if the machinery which arrests and tries, convicts and sentences, and at last takes him to the prison in which he is to close his life, about as follows:

Property destroyed	$20
Arrest and trial	50
Transportation to prison	30
At prison for five years	1,000
Total	$1,100

In all a drunkard, cheaply fed and cheaply clothed, with only education enough to dig, is a loss and cost to the society which rears, educates, and destroys him, that may be told as follows:

The original investment	$ 5,000
The loss of labor for a lifetime	12,376
The loss of labor by early death	19,656
Total	$37,032
If he becomes a pauper at thirty	37,648
If he becomes a felon at thirty	38,132

BRIEF HISTORY OF THE VARIOUS TEMPERANCE REVIVALS SINCE 1800.

Repressive legislation of one kind and another had been employed in many of the States to regulate traffic in liquors, even in the last century, but the laws were quite as much for revenue purposes as for any other ends. The first session of Congress placed a heavy tax on distilled spirits, and most of the States required licenses for the sale of liquors, and some prohibited sales to the intemperate. The laws represented fully the average public opinion of the time. The usual preparation for an ordination in the little State of Connecticut was a sideboard loaded with liquors, "which," says a clergyman of the time, "looked and smelled like the bar of a very active grog shop; and while none were drunk, there was at times a considerable amount of exhilaration." A temperance tractate had been widely circulated by Dr. Benjamin Rush, of Philadelphia, in 1804, but it had as little direct influence as the temperance society, the first organization of the kind in Saratoga county, formed four years later. In New York there was not the faintest sign of any change, and as late as 1814 the clergyman of the Wall Street Presbyterian Church speaks of the imminent danger he ran, as a young minister, of getting drunk while he made his round of morning calls. And the Wall Street Presbyterian Church was no exceptional case. The same temptation beset the popular young preacher everywhere. The first movement in favor of a change had been made at the time just alluded to. Two religious bodies one in Connecticut and the other the General Assembly of the Presbyterian Church, had passed resolutions condemning the use of ardent spirits, but great care was taken to exclude from any disapproval intoxicating liquors containing a lesser per centage of alcohol.

For twenty years the agitation remained in the hands of clergymen. One religious body after another came out in favor of temperance, and a general proselytizing of the masses was carried on in all the States, attempting not to abolish the trade in liquors but to regulate it, and to prevent drunkenness by encouraging the use of ales and wines. Local societies were formed principally in the East, and the movement does not seem to have made heading outside of New England. The only legislation in New York bearing at all on the subject was a law which required a license of from $5 to $50 in the city and from $5 to $30 in other parts of the State, at the discretion of the Excise Commissioners. A general temperance convention was held in Boston in 1826, but it contained few delegates from the Middle States. The movement had already accomplished much in checking the production of ardent spirits. The total production of distilled liquors in 1826 was placed at 60,000,000 gallons annually, or more than three-fourths of the present production, with a population which has increased nearly three-fold. Five years later a fifth of the distilleries in the country, or over 1,000, had been closed for want of business, and the production in this State (at that time ranking first in the manufacture) is said to have fallen off more than $2,000,000 annually. In 1831 the reform in use of alcoholic stimulants had spread over the country. The national organization included 3,000 local societies, with a membership of 300,000, and the society in this State contained 13,000 reformed drunkards. The movement had by this time acquired enough of a national character to warrant a meeting in the Hall of Representatives at Washington, at which Lewis Cass, Secretary of War, presided, and Daniel Webster pronounced his adhesion to the cause of temperance and he disuse of alcoholic beverages. Beside

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Massachusetts, Georgia, Tennessee, and New Jersey were represented by their Congressional delegations in this meeting. In the next two years—which preceded a national convention on the subject and the formation of a temperance union at Philadelphia—the New York State society grew to be the largest of the country, numbering 450,000 members, and having branches in every town and village. Fully a fourth of the population of the State was at this time directly interested in "temperance reform." The movement had reached its highest point in 1837. The annual report for that year gives as one result of the agitation that the distilleries of the State had decreased in six years from 1,149 to 337, and more than 100 towns had stopped the sale of liquor. In this city 40,000 persons had signed the pledge of total abstinence from the use, manufacture, or sale of ardent spirits. It was at this time that the movement changed its character and began to oppose all alcoholic liquors indiscriminately. This principle was adopted by the National Convention at Saratoga, N. Y., in 1836, after three years of bitter discussion, and the next year the society in this State adopted the teetotal pledge. The dissensions and differences which sprang up in the discussions on the subject alienated many of the old leaders, and many clergymen and churches withdrew their adhesion from the cause. The whole temperance movement ceased to be distinctively a religious reform and passed into the hands of the societies, which controlled it for the next thirty years. Before this change was entirely completed the first great temperance demonstration in this city was held in the Chatham Chapel, in 1837. The American Temperance Union met for its first anniversary at this time, and soon after its offices were transferred to this city, which has since been the official center.

The first of the temperance societies which were to carry on the work in the last period of this reform was the Washingtonian, organized by eight drunkards in a Baltimore bar-room in 1840. All were mechanics, and they set on foot a wild, undisciplined, popular agitation. Nobody but reformed drunkards were allowed to speak at their meetings, loafers and inebriates were dragged out of the streets, forced on the platform, and their signatures obtained to the pledge, amid the wildest enthusiasm in the audience, and matters generally were carried on in an energetic manner which brooked no opposition and little interference. The original eight went from place to place, and carried their enthusiasm with them. They were rough and ignorant; they told stories from the platform that were scarcely decent; they were rude and vulgar in dress and action and speech, but in four years half a million persons had signed the pledge and 150,000 drunkards had been "reclaimed." Tha first meeting of the Washingtonians in this city was held in the Green Street Methodist Church. The opening speech of one of the Baltimore reformers was interrupted by a drunken loafer who tottered up to the pulpit and signed the pledge, and forty signed before the meeting was through. Hall after hall was crowded with the meetings of these reformers, and at last there was a mass meeting in City Hall Park, where 2,500 signed the pledge. In a year the local Washingtonian Society had 16,000 members. Out of this organization grew the numerous temperance societies which still exist, the Washingtonian movement soon spending its force and passing away. The "Sons of Temperance," "Rechabites," "Good Templars," and other kindred societies were founded at this time, and after greater or less prosperity have for the most part ceased to be of any practical, direct efficiency. The membership of these societies was largest from 1844 to 1852, and it was to the compact manner in which their secret organizations enabled them to cast a large number of votes that the temperance legislation of this period is to be largely attributed. Legislative committees in a large number of the States had reported in favor of prohibitory legislation as early as 1836, but it was not till 1851 that the Maine Legislature passed the "Maine law." One State after another has pased similar laws, till twelve, including the New England States New York, Delaware, and Pennsylvania, and Indiana, Minnesota, and Iowa, have had at one time or another such laws on their statute books. All but three of these States have repealed them, however. Ohio and Michigan, which engrafted a prohibition clause on their State constitutions, are still in theory total abstainers. The political agitation which began in 1855, and culminated in the war, has up to this time checked the temperance reform, and no progress appears to have been made in any direction for twenty years. It is claimed by the older temperance leaders that the attention it is attracting at present is a natural return of the people to a subject which engrossed the thinking mind of the nation from 1810 to 1855.

THE MAN is a fool who will try to do as his neighbor does, if he cannot afford it.

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How Shall We Ventilate?

BY REV. CHARLES H. BRIGHAM.

THIS is the question which all are asking; at once pressing, puzzling, mortifying and exasperating. The experiments are failures, the new ways are no better than the old, and the cost of the contrivances is money wasted. Science seems to demonstrate here its incapacity, and the fool to have a happier thought than the wise man. And yet the last word of scientific wisdom seems to say that no ventilation is needful, that the houses and halls will take care of themselves, that the air is very subtle, and will find its way through opaque as well as through transparent substances, and that it cannot be imprisoned. Are we not told that wood and stone are permeable to this vital fluid, and that even solid walls are only fine sieves, through which the air is sifted? As the water of the Nile oozes through the jars of clay, losing its slime and dropping cool and clear into the pan beneath; as quicksilver is pressed through the pores of wooden vessels, so the atmosphere comes traversing clapboards and sheathing, lath and plaster, even through marble and granite. The blessed discovery of this fact may soothe the uneasy souls that mourn over the impossibility of breathing pure air without danger of death from draughts and miasma. Those timid Italians are right, after all, who bar their windows when the sun goes down, and let the air come filtered through their thick stone walls, free from its marshy impurities. The new theory of atmospheric penetration has been practically tested for centuries, by the peasants of Orvieto and Bolsena. Unfortunately this new theory is not convincing to the skeptics. We cannot lie easy on the bed in a close room trusting that the air is rushing in through the millions of invisible pores in the walls that inclose the chamber. We cannot believe that there is a channel for the air where the rays of light are hindered, or that the atmosphere can traverse a substance which repels the sunbeams. It is not safe to trust this porousness of wood or stone, in spite of the assurance of an ethereal medium between the molecules. The supply of fresh air must be surer and freer than that which comes dodging and twisting through masses of fibre or earth. Leather is porous; but even the Bedouin would dread the confinement of a tent which had no door, or no seams in the skins which make his house. In another generation it may be proved that air through walls is sufficient for pulmonary use, or some material may be found which is at once permeable to air and impermeable to moisture. But that happy time has not come, and we must act still on the old prejudice, that what we cannot see through we cannot breathe through. We must have some kind of positive and palpable transit for the vital air.

The most obvious method of getting this is to have openings in the walls, through which the air can be allowed and invited. The necessities of life compel these for other reasons. There must be doors to come in by and to go out by. There must be windows to let in the light. And with plenty of doors and windows there can be no lack of ventilation. If you wish to get fresh air in your house, open your windows half a dozen times a day, and leave them open until the air of the room is changed; this is the prompt answer of the practical housewife to the scheming hygienist, who is vexing his brain to find some new method of ventilation. What is more simple than to change the air in this way, when it gets loaded with carbon or other poisons? Open the window, or have it so loose in its frame that the air can come in through the cracks and crevices. That was the ventilation of the good old time, when it was not necessary to have houses hermetically sealed. Let the door of the room, too, stand open. The Hebrew proverb has it that "Wisdom cries at the coming in of the doors;" and her cry is not only for the guests to come, but for comfort to come, in leaving the door open. A door which is always shut loses its proper use. It may be shut for the short secret prayer; but it should be opened oftener than it is shut. "Open your door," if you have to watch by it in robes of fur against the cold and the thieves. Where the doors and windows are opened habitually there will be no complaint that the air is foul, and no chance for pestilent vapors to gather and fasten themselves. These are the primitive, the natural ventilators, requiring no skill in their construction; and all the better that they are constructed loosely and unskillfully.

But this primitive style of ventilation will not satisfy the want of a scientific generation. It is altogether too cheap and too simple, too

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much of the log cabin and wigwam kind. It will not do for the improved houses of refined men and women. They must have something more elaborate, intricate and costly. And then the doctors condemn it. They say that open windows, for half the year at least, in the temperate climates, cannot be endured. There is danger and death in the cold breezes and currents. No one can safely sit in front of an open window when the temperature of the outer air is below fifty degrees of Fahrenheit, however strong the current of contending hot air may be. The temperature of the room must be kept at sixty-five or more, and how can you keep it there if you open the windows or doors? You may sit for a few moments wrapped in warm garments, but the inconvenience is too great. Besides, there is the danger of robbers, and the plague of dust, and the noise of the street, and how many more miseries, of opened doors and windows. In the great cities it is certainly impracticable to use this remedy. We must have an apparatus which acts not at intervals only, but all the time, which is consistent with health, convenience and safety; which offers no premium to burglars, hand organs, or neuralgia; and which has, moreover, some scientific character. It will never do to ventilate our fine city houses, with their Turkey carpets and Mansard roofs, in the style of the rude backwoodsman, or of the wicked red savage. So we are told, *ex cathedrâ*, by the wise men and the guardians of health, that ventilation of this simple kind is inadequate, and that we must get something less perilous and more uniform.

And here the good old grandfather steps in, and with piping and cracked voice suggests "chimneys!" If you would have constant ventilation, build chimneys; and not wretched little six-inch flues either, hardly larger than pipe-stems, but broad, capacious, generous towers, in which the swallow may make a nest for her young, and through which the sweeper may mount and scramble, with his active brush and his cheerful song. Alas for the lost chimney, with its great fireplace, the centre of light, and health and love to all the house! How many of the chimney-tops now that fringe the roofs of the houses are only "dummies," lying pretenders, as worthless as the fantastic iron railing on the ridge and on the eaves! How many rooms in the house have not even a pretence of chimney opening, with the mantel projecting from a blank wall, while others have the pretence, but not the reality, a chimney which has the aperture walled up and skillfully, so as to prevent the air from escaping; the show of a grate, in which no coal is ever burned, and of a flue up which no smoke is ever drawn. The good old chimneys are the true ventilators, up which the air runs with light-footed glee, with a roar of laughter from the crackling logs and coals below. You never will get any better machine for clearing the room of its foul vapors, or keeping the currents in ever fresh chase from top to bottom, and from side to side. Nay, it may be even good, as we have known, to have two chimneys in the same room, one to supply fresh air while the other carries off the poisoned air—the use of which may be varied according to the change of wind or of season, the small chimney when only the fire of cheerfulness is needed, the large chimney when the mercury is at zero. The chimney is the natural ventilator of the house—good when it stands solid and sedate in the centre, like the primitive tent-pole, with the house bound around it and clinging to it lovingly; good when it is multiplied around the sides and in the ells of the house. Indeed, no room of a dwelling-house is so small that a chimney opening in it will not become its protector and make it look larger and more hospitable. All the engravings and knick knacks in a room, large or small, will not remove the prison aspect if the eye sees no fire-place, no place which seems to invite the current to come and pass upward.

Yet this natural ventilator fails to satisfy the fastidious and the scientific and the prudent soul. Shall we have the chimneys and the fireplace unless we have the fire? and can we afford to have the fire when coal costs $12 for the ton, and wood $10 for the cord? Shall we keep a special servant to replenish the fuel, and sweep the hearth and carpet, and cleanse the chests and tables from their grime and dust? Shall we add this to our expense and trouble, to say nothing of the risk of setting the house on fire? If the house is to be fully warmed, there must be a fire in every room, and who but the rich can venture upon that extravagance? If we have the chimney apertures with no fires in them, are we not like the heathen whom Jeremy calls "brutish in their knowledge; for their molten image is falsehood and there is no breath in them?" And then how are we to apply this method to large halls, or to school-rooms, or to churches, to places where the crowds come together, and where the air is so soon vitiated and destroyed? Can we put fireplaces, wide and high, into all the rooms of the great seminaries of learning, which are the pride of our cities and villages,

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or scatter them along the frescoed walls of our tabernacles of prayer? The church may have its pinnacles, its spires, lofty wooden needles, to rot in the dampness and to shake in the blasts; but perish the thought that it shall have more than one chimney, and that to be disguised and hidden as if it were shame! Solomon's temple had no chimneys, and the only mention of the chimney in the Holy Word is where Hosea makes its fading smoke the sign of the swift fate of the idolators.

So chimneys are not enough for ventilation. We may have them if we can afford it, if we like their ugliness, if we are willing to destroy the symmetry of our walls and the cleanliness of our tapestry; but we must have something more. Other avenues for the air to come and go must be opened. We must force or entice the air in through tubes, and in a way which will deprive it of its deadly influence. And to this end the invention of the last thirty years has bent itself with exemplary zeal and patience. Numerous are the schemes which have been tried; but probably more have been thought out or dreamed out, yet have never been brought to trial. There are preliminary questions which have never been settled. Is the bad air near the floor, or at the top of the room? That is still in dispute. Does it collect around the wall, or seek the centre of the room? opinions differ there. Does heated iron spoil the air which passes over it? Who will give a resolute negative to that question? Does a heated draught carry off the foul air, or only the pure air, leaving the foul behind? There are heretics who take the second alternative. Shall the fresh air be brought in through the cellar, or from the lower air stratum near the ground, or shall we draw it from a higher level? All these questions have to be answered. The problem of ventilation is complicated with the problem of heating; the method which will apply to a building heated by a hot-air furnace, will not apply to a building heated by steam; and the economical air-tight stove, so cheap and handy, will require still another method. The problem will be solved when an apparatus is devised which shall bring in air of the right temperature, pure, clean, with sufficient force to exhilarate and to drive out foul air, yet so gently as not to irritate the nerves, or to endanger the functions of life—shall do this for all sorts of buildings, in all sorts of places, large buildings and small, high buildings and low, sacred buildings and profane, in the country and in the city. It is safe to say that no scheme proposed has accomplished this end, that no scheme reaches this comprehensiveness. No device, however ingenious, can make the air inside of a building pure when that outside of it is impure. A gallon of ammonia or of Cologne water evaporated daily will not purify air which enters loaded with the fumes of a copper mill or a soap factory. The air of a stagnant marsh does not become pure because it is drawn in and pushed out by some shrewd contrivance. It is plague in the house, however it comes in and however it goes out.

1. The first requisite for good ventilation, then, if we may bring to the point these desultory remarks is, that the air which is outside of the building shall be pure, free from noxious gases, free from pestilent vapors. Of course, in most localities, no air is absolutely pure. It holds dust, it holds carbon, it holds minute particles of sulphur, it holds one or another kind of miasma. Even on the breezy hillside there is infection; the cholera poison and the yellow fever poison are often most virulent on the bluffs which are swept by the winds. In the cities absolutely pure air is a rare phenomenon and blessing, even in the widest streets. The best that we can hope for is relatively pure air, in which the impurities are not in excess, not such as to offend the nostrils, or to cause asphyxia. If we choose to live in cities we must pay the inevitable penalty of breathing air in some degree polluted. Some of the impurities may be removed, indeed, by such a method as that of Ruttan, in which the air passes through water, warm or cold, before it comes into the room, and is so washed and relieved of its burden of sand or smoke. This system has been employed for many years on some of our railroads, and even in churches and houses. But it requires a strong artificial draught to force the air through the water; and the water then only removes the solid, and not the gaseous impurities. It is worthless as a self-acting contrivance, or in a calm atmosphere. And it is not likely, from the expense of its construction, to come into general use. Even some of the railway cars, on which the Ruttan ventilation was used, have now relinquished it, as it was found impossible to keep the doors and windows shut in the summer; and with open doors and windows the method was nullified. The Ruttan ventilation will probably go to that quiet oblivion to which so many other abortive railway experiments have been consigned, the Nirwana of patent smoke-stacks, and patent brakes, and patent windows and patent steam bells.

2. The next essential thing, supposing the

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outside air to be reasonably good, is that it shall be drawn into the building. In windy weather, if the window-frames are not too tight, there will be no difficulty about this. When the wind blows at the rate of twenty or ten miles an hour, the joints of carpentry must be very close to exclude it. But we want it to come in too, when the gale is hushed and only zephyrs breathe softly, or even a calm is on the face of nature. That must be in what Mr. Weller calls the "power of suction," by creating currents with heat, or with the revolving fan, or with some air pump on a large scale. In large establishments, hospitals and prisons, where a steam engine does the work, a rotary fan and a shaft with branches through the corridors, can easily be made to bring in an ample supply of air. Where this is impracticable, a wind wheel above may give the power to turn a wind wheel below, and do the work, in average weather. Surer still would be a water wheel, from some unfailing fountain. Nay, we saw not long ago a proposition to use the electric motor for turning a fan which should ventilate a whole block of houses, as the inventor claimed, at an expense for each of less than a shilling per day. Whether the trial of the plan has been made has not yet appeared. But such co-operative ventilation is quite as reasonable as co-operative cooking or washing, and more likely to satisfy fastidious tastes. Why, indeed, should we not have immense airducts as well as immense aqueducts, bringing into the great city by means of mighty currents, the pure atmosphere of the uplands? Why should not the Croton dam send from its waste power—turning some vast wheel—a river of pure air as well as a river of pure water, to refresh the lungs of the toilers in the great city hive? Such a vision is by no means fantastic. The time may not be far distant when a common air fan shall be as necessary to a block of dwelling-houses as a common sewer. It certainly is as easy of construction. And when houses are heated, as before many years they assuredly will be, by underground ducts from a common furnace or caldron, saving so all the trouble of separate fires, and all the danger of conflagration, and all the heat now wasted, and half the cost, then the purging fan will carry a healthy current along with the heat.

3. The next thing in ventilation—not so easy to be secured—is the expulsion of the foul air, the expulsion of what has been spoiled in the breathing. You may draw in the good air, but you cannot so readily throw out the bad air. This seems to be a paradox, for how can the good air find place unless the bad air makes way for it? Very few houses are so tight as to be like the receiver of an air pump, holding all that is pressed into them. Somehow the bad air must be driven out. How to do this is the question. Apertures in the floor, apertures in the walls, apertures in the ceiling opening into roomy attics, with flues opening into hollow walls, which have outlets on the side of the building and on the roof; broad apertures and narrow, these seem to be the natural methods, if the windows are not to be used. How many of these escape pipes shall be used, and where shall they be placed so as to do their work most effectively and least to mar the grace of the room? The ugliness of the slatted "registers," no doubt, greatly hinder their use, even when their slides are silvered. One architect, indeed, insists that the ceiling can be pierced with holes two inches in diameter, so arranged in concentric rays and systematic curves as to have all the effect of arabesque, while they do the work of ventilation. They may be as highly colored and gilded as the fretted carving of the Moorish arches, and be far more beautiful than the lying "frescoes," for which the *nouveaux riches* of the cities pay so heavily.

But is it certain that the bad air will be forced out through these apertures, so deftly fashioned and so abundantly provided? Do not chemists affirm that the air of school-rooms, which are amply furnished with ventilating "registers," shows, when analyzed, as much impurity as the air of rooms which have no such contrivance? They tell us that it is the good air which comes in and goes out again before it is used, that the bad air holds as obstinately to the room where it has been generated as the snake in the nest of the woodpecker where it has made an invasion and a home; that the draught through these apertures is deceptive, and by no means indicates that the noxious elements are passing off. We have, after all, in this matter, to walk by faith more than by sight; and, perhaps, by hope more than by faith. The conclusion of the matter is that the escape pipes ought to do their work, but if they do not it is not our fault; the Lord, and not we, knows where the fault is. If, with holes in the ceiling, and holes in the walls, and holes in the floor, bad air still lingers in the hall and in the chamber, then we have nothing to do but to submit, to stroke the beard in Turkish fashion, and cry *Allah achbar*, *Bismillah*—the Lord's will be done!

4. Clearly, however, there is a better chance for the expulsion of bad air from any room if

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there is perpetual agitation, the excitement of current and counter current, than if the air is positively or comparatively at rest. The more it is stirred up the less likely will the bad air be to resist the influx of the fresh air. The incoming current, therefore, should be strong enough to keep all the air of the room in motion. The fault of the steam radiators in a room is that they heat the air too gently, and do not set it running and spinning; and now the wise men agree that where steam is used for heating the heat should be collected in a chamber, like the heat from an air furnace, that it may bring disturbance as well as comfort. "Agitate" should be the law of enterprising ventilation as well as of moral reform; and the conservative maxim, "*quieta non movere*," is here wholly unsuitable. And if the current can be felt it will do no harm, and give confidence that the elements are in commotion. If the air keeps moving, some of the bad air will go out, while some of it hides in the corners; and there is something gained—in nothing more than breaking up the mass, as the shrewd policeman knows, when he entices apart the individuals of an excited throng. A practised orator declared that the applause of a crowded house was quite as valuable in stirring up the bad air and waking from lethargy as in stimulating the gratified speaker. If a fan could be suspended from the ceiling and kept in motion by machinery, it would assist the studies of our school-rooms, and perhaps the attention in our sanctuaries in the months of winter, quite as much as the fan of Oriental lands lulls the slumberer in the hot days of summer.

5. But, finally, we come back to our starting place, and say, that all apparatus for artificial ventilation needs the reserve of natural ventilation to resort to in case of failure. Try the pipes and registers, the fans and the currents, as many as you will; but be always ready to open the doors and windows, if these other contrivances should prove insufficient. Do not depend upon these. "Prove all things" in this kind, but "hold fast to what is good." If the patent ventilators will not purify the air of school rooms, then shorten the time of study and lengthen the time of recess, for the air to come in in ample volume. Half an hour of opened windows will change the air in any school-room into which heat is thrown in winter. Ten minutes of opened windows will change the air of an ordinary chamber. With this reserve, none ought to complain that it is impossible to get good air into houses while there is good air outside of them, or to have the same atmosphere under the lower roof that one has under the canopy of heaven. No apparatus is so trustworthy that it can fairly supersede the natural ventilation of the door and the window and the chimney.

Phthisis Pulmonalis, or Pulmonary Consumption.

BY W. G. BARKER, M. B., LONDON. (*Third Paper.*)

THE SYMPTOMS.

FOR the purpose of giving these with greater exactness phthisis is usually separated into three stages; but, before this is done, it will be necessary to make a few observations on that constitutional state which usually precedes the deposition of tubercle, and is almost a necessary condition to its formation; this has been termed

The Pre-tubercular Stage.—It is a matter of the highest importance that this stage should be clearly understood, for it is at this period that the disease, if it can be so called, is especially amenable to treatment, and which, if proper hygienic rules be adopted and the exciting cause removed, will, unless the hereditary predisposition be very strong, generally admit of cure; and it is a principle that may be laid down in the treatment of this disorder that just in proportion to its progress and duration, so is it the less remediable. There can be but little expectation of a permanent cure when the deposit has taken place in a degree sufficient to impede the circulation through, and interrupt the nutrition of the textures, and the chances of recovery are still more remote when the loss of substance has occurred, and the tubercular matter, with lung tissue, has begun to be copiously expectorated; yet this latter stage is often allowed to supervene before the patient is advised to adopt that change of residence which frequently offers the only hope of a restoration to health.

Symptoms.—These are a coated tongue, with

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s of appetite, and an irregular state of the wels; a pallid countenance, or a sallow one, any of the viscera, such as the liver, kidys, or skin, be performing their functions imrfectly; there are also languor of the body d loss of weight, and the pulse is generally naller and quicker than usual; we have, in ct, all the symptoms of general debility. At is period there is usually little or no cough, d it is at this particular stage, when the use can be traced out and removed, that we n augur most hopefully of the result; but if, the other hand, there be associated with any the other causes a strong hereditary predisposition, as indicated by one or both parents aving died of consumption, or any of the sisrs or brothers, it is impossible to speak so faorably of the issue, the exciting cause, howver, should be discovered; for when it has been oduced by excessive mental labor, close conagement to business, over anxiety, late hours, mmoderate indulgences, prolonged dyspepsia, c., the removal of these will often be attended ith marked success, and the patient placed in favorable way for recovery.

The First Stage of Phthisis. 1. *Symptoms.*—These are the same as the foregoing, only in a more marked degree; the pulse is increased in requency, the tongue is more coated, especially t the base, whilst the tip and edges are red; he appetite and strength also fail, the respirations are increased in frequency, the breathing s oppressed and sometimes at this early stage here are copious night sweats; the cough, at rst dry, is after a short time attended with more or less expectoration, which is frequently treaked with blood. I have known more than ne instance in which the earliest indication of phthisis was a somewhat copious hemorrhage, which usually takes place in the night; this is succeeded by pain in that part of the lungs rom whence it has proceeded, which gradually subsides, and the patient often appears for ome time quite well; but, in the majority of ases, at no very remote period unequivocal ymptoms of phthisis set in.

2. *Physical Signs.*—The earliest stethoscopic vidence of the deposition of tubercle is a weakness of the inspiratory murmur; this may generally be known by comparing the two sides of the chest above and beneath the clavicles, and is produced by the deposition of the tubercular matter interrupting the free expansion of the lungs, and therefore the easy transit of air. From the same cause, and likewise from the impaired elasticity of the lung tissue, the expiration also is prolonged, whilst in both inspiration and expiration their is a harshness and, as the disease proceeds, an irregularity of the respiratory murmur, which gradually merges into the dry, crackling rhonchus, which, when it occurs, is very characteristic of this stage. Bronchial breathing, also, or an increased loudness and harshness, accompanied with a blowing characteristic of the respiratory murmur over parts usually affected with phthisis, are additional evidences of the tubercular deposit. There is also broncophony, or an increased loudness of the voice in parts where it is not naturally heard, as, for instance, beneath the clavicles, and if the patient be directed to cough we have the bronchial cough. The sounds of the heart also merit attention, for if these be heard more on the right side than on the left, or even in the same degree, there is probably consolidation of the upper lobe of the right lung. On percussion, likewise, the sound is materially modified, and, conjointly with the rest, this symptom is of the highest value; but like nearly every other when taken separately, is of very little diagnostic importance, for it is well known that tubercles may exist in the lungs to a limited degree, or when they are diffused, and especially in young persons, without giving the slightest evidence by percussion of their presence. In most cases, however, as the disease advances, and often at the earliest periods, the evidence that percussion affords is of the greatest use, especially on comparing the opposite sides of the chest beneath the clavicles; at the same time due attention should be paid to the parts above, and to the supra-scapular regions, for it is here that the earliest symptoms of phthisis generally reveal themselves. The altered form in the parietes of the thorax should also be carefully noted; this consists in a flattening of the chest beneath the clavicles, producing a diminished capacity in its antero-posterior diameter, and is caused either by the tubercular infiltration interrupting the free expansion of the lungs, or by subsequent inflammation of the lung substance and atrophy of the air cells, or by pleuritic inflammation and adhesion drawing inwards the parietes; the altered form becomes more and more evident as the disease advances, gradually throwing forward the cervical and dorsal vertebræ, and causing a bending forward of the whole body; and as the form of the chest becomes altered the movements are diminished in a like degree, so that after a time there is very little, if any, change at the upper parts of the chest during respiration, or even on a forced inspiration.

The Second Stage. 1. *Symptoms.*—These are

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the same as in the first stage, but more defined, and it is mainly by the stethoscopic signs that we can distinguish between the one and the other; there is usually, however, considerable pain above and beneath the clavicle, for the disintegration of tissue which has now taken place is always attended by some inflammatory action; and when this extends to the pleura, which it very often does, it is generally acute and lancinating.

2. *Physical Signs.*—The earliest evidence of this stage is the humid, crackling rhonchus; and it is equally characteristic of the second, as the dry, crackling rhonchus (which it usually succeeds) is of the first; it therefore enables us at once to determine with certainty that the tubercular matter has begun to soften, and involve in its disintegration the destruction of the lung substance in which it has been deposited, and which, by the aid of the microscope, may generally be detected in the expectoration. This humid crackling is a sharp, clear, clicking sound, occurring as a rule only once or twice during an inspiration; whereas the sounds in bronchitis are of a bubbling nature, distinct, and more frequent; the one, however, is frequently blended with the other. As the softening proceeds, the surrounding parts become more and more liable to inflammation, which attacks principally the capillary bronchial tubes; we have, therefore, as a secondary result, the sub-crepitant rhonchus; and when the larger ones are implicated, the sonorous and sibilant rhonchi, and occasionally the lung substance itself is involved, producing the fine crepitation of pneumonia; at other times the pleura is affected, as shown by the pleural friction sounds.

At this stage also the altered configuration and impaired movements of the chest, and the flattening beneath the clavicles, especially on one side, are all more evident; and if the hand be applied to the apex, or upper part of the thorax, and the patient directed to cough or speak, the tussive or vocal fremitus will be very marked, and on percussion the deposit will be readily recognized by the peculiarly dull and heavy sound, widely different from that over healthy lung. The above is an outline of the principal signs of this stage, and although we cannot expect in any case that all of them will be present, they are usually in sufficient number to render it easy of detection.

The Third Stage. 1. *Symptoms.*—In this there is still an increase of every symptom; the cough is painful, hollow, and almost incessant; the night sweats copious and the pulse very rapid—from 100 to 130 or 140 in the minute—the breathing likewise is oppressed, and the legs become edematous; the tongue is sometimes of a glassy red, at others thickly furred, and at the very last apthous. Frequently diarrhea sets in from the irritation of the tubercular matter which has been deposited in the lining membrane of the bowels, and this soon carries off the patient.

2. *Physical Signs.*—In this stage a large amount of lung tissue has been expectorated; and with the formation of cavities changes in the auscultatory sounds take place, which require consideration. They may be divided into those produced by respiration, by the voice, the cough, the action of the heart, and by percussion.

I. *Those Produced by Respiration.*—Cavernous respiration is recognized by its dry, hollow, blowing and metallic character; and when the cavity is considerable the sound is similar to that produced by blowing into an empty bottle, and is therefore termed *amphoric*. We can usually estimate the size of the cavity by the loudness of the sound; still there are a variety of circumstances which may interrupt this, as when the vomica is filled with its own secretion, or the bronchial tubes leading to it are blocked up, or the respiration is so feeble as to produce no sound. By directing the patient, however, to cough, by which the cavity is cleared, or to inspire deeply, we can generally detect it. The cavernous rhonchus differs in its character according to the amount of the secretion and the size of the cavity, being at one time of a gurgling or sibilant kind, and completely masking the cavernous respiration, and at another of a metallic nature. Pleural friction-sounds are also frequently heard in the neighborhood of the vomica.

II. *By the Voice.*—If the stethoscope be applied over the trachea and the patient directed to speak, the voice sounds as if it were passing directly into the ear; and if there be a cavity in the lungs and the instrument applied over it, the same distinct articulation is produced. This is *pectoriloquy*, or tracheophony, heard in an unnatural situation; which latter term Dr. Billing proposes to substitute for the former. Where the cavity is large and empty there is a still further modification of the voice, the *amphoric voice.*

III. *By the Cough.*—When there is a vomica, if the patient be requested to cough, it is of a peculiar, hollow, ringing and metallic charac-

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This is termed the *cavernous cough;* and
on the cavity is empty and extensive the
nd is still further changed, and it is then
ed *amphoric.*

V. *By the Action of the Heart.*—In the third
ge of phthisis so great is the attenuation of
body and loss of lung substance that the
nds of the heart are not only heard more
inctly than usual, but in many instances
impulse also may be seen and felt; and
n the cavity is on the left side, the sounds
more evident at the second intercostal space
n in their normal position at the fifth; and
ne cavity be on the right side, they are bet-
heard beneath the clavicle on that side than
he fifth intercostal space on the left. This
es from the displacement upward of this
an, the result of a partial cicatrization of
cavities. *Pericardial* friction-sounds and
cardial murmurs are also not uncommon.
erial blowing sounds are also sometimes
rd beneath the clavicles, especially on the left
, and are caused by the drawing inward of
walls of the chest and the contraction of the
ities impeding the circulation through one or
re of the great vessels at the base of the heart.

By Percussion.—This varies according to
size and number of the cavities. When
se are small, their partial occupation by
co-purulent matter, and the consolidation of
surrounding tissues by sub-acute inflam-
tion and tubercular deposit, more than com-
sate for the loss of substance; and there is,
in the former two stages, a preternatural
lness; but as they increase in size the sound
omes more resonant, and at last almost *am-*
ric in its character.

Pneumothorax.—Dr. Somerville Scott Alison, in his work on "The Physical Examination of the Chest in Pulmonary Consumption," states that he has found this so common an event as to render it desirable to assign to it a separate stage, the fourth or concluding one of this disease.

It usually occurs at an advanced period, and the physical signs vary according to its extent and the pathological condition with which it is associated. If the quantity of air be great, there are a considerable bulging of the intercostal spaces, with lessened respiratory movements, and a morbidly clear or tympanitic sound on percussion, and the respiratory murmur will be either very feeble or inaudible; or if the air during respiration passes freely in and out of the newly opened cavity, it may be of an amphoric character. At the same time, from its pressure upon the vomica in the lung, all signs of this may disappear; and when it is very considerable, there may be a proportionate displacement of the position of the heart.

After a time, especially if the quantity of air be large, fluid collects in the cavity of the pleura, and we have all the symptoms of *hydropneumothorax*, viz., the absence of the respiratory murmur, and when the patient is in the upright position a dullness on percussion at the base of the thorax, which abruptly changes at the surface of the fluid to a clear and tympanitic sound; this, however, varies with the position of the invalid. The metallic tinkle and echo are also sometimes heard, and by placing the hands on the shoulder and gently agitating the thorax a splashing noise can often be evoked.

How a Daughter was Educated.

BY DR. MARY J. SAFFORD.

NOT long since I listened to the conversation of a man of marked inherited invent-genius. He was asked how this talent wed itself in his own sons, but it never oc-red to the interrogator to add, "and daugh-s." When the question was put thus, it led forth the fact that the daughters had wn the most originality; and further pushed know if any plans for their education had n based upon it, it had evidently never en-ed his mind that they might be so guided and directed in their studies as to develop inventive talent that would encourage them to enter as competitors upon the broad field of scientific investigation.

There is no lack of well-sounding theories upon the subject of educating girls to some purpose; but go into the houses of these silver-tongued orators, or of those who write upon the subject as clean cut as if with a diamond-tipped pen, and in how many will you find a corresponding programme for the mental

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discipline of the brothers and sisters of the household. In this practical age it is the duty of the father and mother to have but one aim in the educating of their children, and that to so direct them that they can best help themselves, so to direct their mental growth that they can add to it in proportion as they have been endowed with God-given powers.

Let us start our boy and girl out into the world finely clad; he in garments that will wear equally well in rain or in sunshine, she in a garb that is attractive and well enough suited to fair weather, but that vanishes in mid-air when storms unexpectedly overtake her. Should we not condemn as absurd such a provision for the body? And yet this is precisely what is done for the mind, as what I am about to relate will illustrate.

Born in one of those palatial homes in New York, surrounded by all that wealth could give, who could have believed it possible that May G——, at a tender age, should be compelled to go forth homeless, friendless and penniless, she who had come in the month of early buds and blossoms, to fulfill so much of hope and promise. The fairest and frailest of the household, I need not trace year by year the love that grew with her growth. A little brother four years her senior could find no vent for the expression of his joy in having a real flesh and blood sister, except in pinching her to assure himself that she was not made of wax, and had a voice that was not regulated by staccatto thumb movements at the pit of the stomach.

At ten years of age, just when May had begun to appreciate the fullness and depth of a mother's love, she was left motherless; a petted child, who had never known what it was to have a wish ungratified, she had had private instruction whenever it suited her fancy to study, she gave unusual promise of talent in music, but had only followed her own inclination in the study of it. There were no maiden aunts, no grand-parents nor near relatives to the care of whom she could be entrusted, and the father, with a heart full of love and of desire to do the best for his daughter, realized how wholly incompetent he was to guide and direct her in the pursuance of an education; and believing that this could be best done by those whose lives were dedicated to the work, he put her into a convent and gave her entirely to the charge of the sisters who presided over it.

Except when she was permitted to drive or walk with her father, she knew nothing of the out side world for six years, the period allotted for the completion of her education; during which time, at a lavish expenditure, she had been taught the usual studies—music, French, English literature, the rudiments of arithmetic, embroidery, drawing, and the making of wax flowers. The impure air of a dormitory life, the lack of vigorous muscular exercise, the long morning and evening religious exercises in the winter in a cold chapel, with the utter disregard of the most essential hygienic rules in connection with dress, tended to undermine May's constitution, and she came forth from the convent walls a pale, timid invalid. Now that her father had performed this part of his duty, the educating of her, he was ready to initiate her into the mysteries of society. In order that she might soon overcome the diffidence of manner that long isolation from the world had caused, he selected a boarding place where all was life and gayety, and where there was no lack of opportunity to introduce her into the circles of wealth. She played and sung popular light music sufficiently well to attract the human moths that flutter where there is glare and glitter. The father saw, as he thought, at no distant future, a brilliant match for his delicate daughter; there would be wealth, and the position it commands. When all of his hopes were at full tide there came one of those financial tornadoes, and the millionaire father, who sat upon the crimson colored velvet divan last night, gloating over the moneyed prospects of his daughter, is the penniless bankrupt this morning. He has been a power among men, and soliloquizing he says: "They will respect me still." He goes forth to find no hand extended as before, no hail fellow, well met, at the club; and were he the bearer of pestilence, he could be no more effectually shunned than he is in Wall street. It was more than he could bear; he could not break the terrible news to his children. He is found dead in his bed, and the papers indifferently announce as a cause, pecuniary embarrassment.

Howard, the son, had been educated at the public grammar school, and was now in a technological institute. His father had felt the need of a thorough education, never having had but six months of schooling in his youth, and he determined that he would give his son the benefit of a practical education, and then leave him to build upon that as his inclination dictated. He had never been given a superabundant supply of money, for his father meant to have him learn the worth of it before he should inherit it.

Although the brother and sister had grown up apart, and their lines had fallen in places so

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ılike, still they had shared each other's confi-
ınces when they had met, and were linked
gether by the closest ties of affection. And
ɔw they came together to drink, to its dregs,
om the same bitter cup of sorrow. "He has
ıen a devoted father to us," they said, "and
ıd he only confided to us his loss, how we
ould have shielded him with our affection.
nd how gladly," added Howard, "I would
ıve gone forth to help him to retrieve his for-
ne." "And I, too," said May, and then she
ısitated—"but what could I have done?"

"Oh, you could have encouraged us in our
ork, and shared in its rewards," answered
oward, as he pressed her tapering, bloodless fin-
ɔrs in the palms of his warm, strong hands.
realizing sense of her helpless condition came
ɔon May, and she bowed her head upon her
other's shoulder and wept, and between her
ıdible sobs she cried: "What can I do? we
e penniless, and I must work as well as you."

Howard drew her close to his heart and said:
My own darling sister I am strong; it will be
ıly a pleasure and stimulus for me to work
r you, all that is now left me to live for."

She was silent for a moment, and then said:
If my body had only been considered of some
ıportance as well as my soul, I might then
ıve had health and strength upon which to
ly now in this time of need, and then I could
ɔ—something. But for that dreadful pain it
ves me in my side and shoulder I could em-
ɔoider those beautiful cushions and slippers
ıat the sisters taught me to do. I might give
ssons upon the piano to young children; I
n not well enough grounded in the science of
usic to teach advanced pupils. I could make
ax flowers. Sister Ursulia said I had great
ste in making and arranging them; but I do
ɔt know who would ever buy them, now that
ıtural flowers are so common and so cheap."

"If you are done planning, May, I will
ɔeak," said Howard. "You remember that
ıere is a distant relative of our mother in the
ty, it may be that you can find a temporary
ɔme there till I can get work and provide you
ith one."

"He is a florist, if I remember rightly,"
id May; "and perhaps I could find employ-
ent in arranging natural flowers."

The deep cloud of sorrow that so few min-
tes before rested upon her face, as if impen-
able, now broke away, and beneath were seen
ys of light and hope. The relative was found.
le had one of the largest green-houses in the
nmediate suburbs of the city, and, the ar-
ngement was made that May should have a
home there, and the compensation for the same
should be given as Howard could earn it.

He now began to seek in earnest for employ-
ment. A company of engineers was being
made up for surveying the western territories,
and as nothing else offered with so large a com-
pensation Howard accepted of the situation.
He had studied engineering, and so his services
were all the more desired; but it was hard in-
deed to break the news to May, of so wide and
so long a separation. He did it as gently as
he could, by promising as speedy a return as
possible, and a frequent bridging over of the
space between them with letters. With all of
the bright hopes that he pictured for their not
distant future, it was a crushing experience for
May to see this one earthly object that she
had to love, depart. It was well for them, as
it is for us all, that the future was vailed. One
by one, as grievous burdens are laid upon us,
we are strengthened to bear them; when we
should falter and fall were they laid upon us
at once.

The distant relatives whose protection May
had sought centered all the interest they mani-
fested in her in the welfare of her soul. That
she had been so many years under Catholic
rule intensified their solicitation for her im-
mediate regeneration and entrance into the one
ark of safety, their church, whose forms and
ceremonies were unlike the mother church only
in the degree to which they were carried. As
May expressed it, it seemed as if she had been
asleep all of the years that she had passed in
study; they had been years of mental routine,
and now for the first time she began to feel a
growing desire to investigate and ask the reason
for subjects proposed for her blind acceptance;
but this only enhanced the *animus* against
her of those whose Christianity manifested it-
self only in the confession that they made of
a Sunday, upon bended knees: "Have mercy
upon us, miserable sinners." May was too
frank and too true to herself to say she be-
lieved, when all was doubt and darkness in her
own mind.

The manner in which her relatives now treat-
ed her was so cold and severe, that she resolved
to seek employment in the city. She advertised
as a governess; a few answers were received,
but the educational requirements were too high
to be met by May. Without realizing how soon
the expenses of a great city would eat up the few
dollars that her brother had left her, May threw
herself upon the market, little knowing how
overcrowded it was with those, like herself, only
competent to do something light and superficial.

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She found a little attic room in as cheap a quarter of the city as was to be found, and here, from the materials she had brought with her from the convent, made some exquisite bunches of wax flowers, and went forth to dispose of them. She offered them in shops, to fine ladies in the streets; no eyes seemed to rest with pity upon her pale face, and no voice uttered words of sympathy and asked if she were needy. She was accosted by wolves in sheep's clothing, which made the crimson blood rush to her cheeks, and caused her to return to her lone room, and, weeping, to ponder upon the rarity of Christian charity.

As a last hope she advertised as a nurse for children. The next day she was visited by a lady who was about to leave for a distant city, and the arrangement was made for May to accompany her. She was as fortunate in her new home as one can ever be, who, educated to fill a high social position, finds herself placed upon a level with the ignorant, obliged to eat, sleep and associate with them. She had two tyrannical, petulant children to amuse and obey, and a lady to serve who expected her to fill the place assigned her with faithful alacrity, with no utterances of the past, when the gentle, loving care of a mother watched over her, and with no references to the latent hope that she still cherished of making more of herself. She felt how little was done to implant beautiful life lessons into the minds of the children whose bodily necessities she was solely held accountable for; and with every story and every play she endeavored to drop into their receptive natures moral seeds; and soon she found their waywardness conquerable by love, which was acknowledged once by the mother, who said: "How is it, May, that the children are subdued in their worst moods by your stories and calm demeanor, when all of my scolding has no effect upon them?"

May's brother had gone into the western wilds to survey. At first letters came but seldom, and finally ceased altogether. Not knowing where to direct, she could not write him. Every new outbreak of Indian barbarism against the innovations of civilization made her heart almost cease to beat, lest she should see his name among the slain.

After May had gained the perfect confidence of her employer and the love of the children, she begged that her wages might be reduced in proportion to the loss of time incidental upon attendance of an evening school, where she desired to perfect herself in book-keeping. Her proposal met with some opposition, doubtless because it foreshadowed the preparation for a more remunerative and higher employment than that of being a nurse.

She not only perfected herself in the best methods of book-keeping, but became a most expert and skillful penman. She had found time—mostly at night, when the day's work was ended and the children over whom she watched were sleeping—to fill up the neglected gaps in her English education; and now when spring had come, with its growing fulfillment of promises to gladden the earth with a new seed time, May began to reflect upon the necessity of resigning the charge of the little ones, to whom she had become closely attached during the two years they had been her constant care. One day when she had them by the hand walking in the park, some one laid hands upon her shoulder and said: "May!" She turned and recognized in his dark, deep eyes, Howard, her beloved brother. The smooth, pale-faced youth was now a brown, full bearded, stalwart man. The pages in their lives that had been before blank to each other were now read with all the speed that speech could give. Howard had for months been snow-bound in the mountains, so that all communication with the outside world was impossible. As soon as he was released he wrote May. In the mean time she had left, and all letters sent her were never received. As soon as he could leave his business, Howard resolved to go east and make every effort to regain his sister. He had advertised in the newspapers of the city she left. In a vague, unsatisfactory manner he traced her steps to the city where he found her, and was about to resort again to the columns of the various newspapers as a last hope of gaining information in regard to her.

He had pre-empted a large stock ranch on the boundless prairies of one of the western territories, and now all that was wanting, in his estimation, to render his home a paradise was the presence of his only sister, May. And now he said to her: "My heart's desires will be satisfied when I can have you to share my prosperity with. Our life will be that of the pioneer, free and unconventional; but we can make it a center of growth and intelligence. May listened to all of his expressed hopes and promises, and then said: "I can never again be the idle consumer of another's labor and gains. I have the past year fitted myself for active employment, and now I can only find happiness and content in using for a purpose the talents I have, and the knowledge I have acquired."

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'Nonsense, my dear sister," exclaimed How-
l, "the whole ranch is yours as much as
ne, and all it brings is yours to share."
'Your generosity I do not question; but if
it upon which you rely should prove an ill
culation, if all your golden prospects should
l you, as did those of our lamented father,
n you would be stranded, and have me upon
ir hands, a dead weight. No, I must reap a
er experience, that of earning my daily
ad by my own individual exertion."
May's firmness of intention could not be
ken by entreaty, nor by promises of a free
l easy life. This was to Howard an entirely
oreseen dilemma, which it required days of
e for him to solve. While he was ponder-
it over in his mind late one night after he
l retired, the thought came to him, why not
r May a partnership in the ranch and give
a place of trust to fill? I need a faithful
ok-keeper, she is prepared for that work.
could scarcely close his eyes in sleep that
ht, so anxious was he to lay his proposal
ore May. When he did so she replied:
'If you need some one to fill that position,
ill accept it gladly." And as soon as every-
ng could be arranged, the brother and sis-
went joyfully on their way to the new home.
y was like a bird let loose from a cage. She
l never before had the slightest comprehen-
n of the vastness, the diversity and beauty
her own country. As the body grew strong
and vigorous she began to feel the workings
of a latent mental comprehension that had
scarcely been foreshadowed to her before. The
little cabin into which she entered, with all its
freedom from conventional routine, gave a con-
tent that she had never before felt in palatial
halls. They had taken with them from a west-
ern metropolis a homeless American girl, not
as a servant, but to be a companion and help
to May, with ample reward for the same.
Howard was called much from home in the
interest of the ranch, and when he was away
upon May devolved the oversight of the fifteen
hundred acres of rolling greensward upon
which their flocks fed. She would leap into
the saddle as if she had been always a child of
nature, and the fleetest steed was none too fleet
to suit her.

After May had been thus associated with her
brother a year he proposed that she should no
longer occupy the place of book-keeper and
general overseer, but that from that date a firm
should be established bearing the name of May
& Howard G——, stock-raisers.

"If you think me worthy and competent to
fill the place," said May, "it will be the dream
of my life realized, to be indissolubly associated
with you in business, as in heart and soul."

They say there is no more prosperous firm
west of the Rocky Mountains, and no better
judge of stock or of the market value, than the
junior partner, May G——.

Brief Thoughts on Habit.

BY THE EDITOR.

)UR HABITS are the best illustration we
can give of the very intimate relation be-
en our minds and our bodies.

. Every person has his modes of thought
l action, and these are but habits which we
e inherited from our ancestors, or acquired
selves. Indeed some physiologists go so far
o teach that the reason why the body grows
as it does, is because of the power of habit
ages.

. It is a matter of universal experience that
ning for special aptitudes is more effective
en exerted on the young and growing child,
n when brought to bear on the full grown
n or woman. The training in early life gives
organs of the body a tendency to grow to
certain modes of action. In after life these
modes of action are difficult to acquire. In
other words, we find it easy and almost auto-
matic to do what we have done before, and to
think and feel what we have thought and felt
before. This tendency is stronger in the nerv-
ous system than in the other organs of the
body.

3. The reason why old people remember so
much more distinctly what they learned in
early life than that most recently learned, is be-
cause the force of habit, while the body was in
its full vigor, has fixed these impressions more
thoroughly in the nervous tissues of the grow-
ing brain. They endure to the end of life.

4. In mature life it is difficult to form new

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habits of thought, or to master new subjects, unless they fit in with what we have already learned. Things seem very unreasonable to us that do not match with our previous knowledge, though they are perfectly true, measured by the standard of those who have formed different habits of thought.

5. Habit shows its power over both mind and body concerning the things we eat and drink. People who, from long habit, have got used to certain articles of food think they cannot live without them. They are used to them, and whether best or not is a question never to be thought of.

6. It is more than probable that the habit of drinking liquors would never be acquired to any great extent after the age of thirty. Let a boy be well fed and know nothing about the use of alcoholic beverages till a man, and he would rarely form the habit of using them. "I once knew a family reduced to poverty," says Carpenter, "who declined to eat a rich barley soup because they were *not used* to it." It was hard to form a new taste after the habits of the body and mind had become fixed. The same writer gives another case where all the workmen of a large outfitting establishment refused to work because they were required to make a slight alteration, not more troublesome, in the pattern of a particular garment. And still another of an effort on the part of manufacturers of cheap prints for the humbler classes, to change the styles a little, which failed. They had been in the habit of wearing a particular pattern so long it had become a part of themselves. The least departure from it could not be tolerated. The tissues of the body get into bad habits as well as the nervous system. After nasal catarrh has once been established it is often kept up from mere force of habit. People cough from habit, spit from habit, go to sleep and wake at particular hours from habit. We once knew a thief who stole from habit. His faculties were used to working in this way and could work in no other.

7. Where habits are wisely and judiciously formed in early life the tendency is an extremely useful one, enabling us to work with ease instead of with difficulty. Habit renders all things easy. Without habit it requires a strong will to bring us up to the point of doing what we ought to, or must do.

8. It is not wise to be a slave to even good habits; to be so we cannot do any work except in a particular way, sleep except in a particular bed or room, or eat only a particular food.

9. To break up a bad habit requires a powerful effort of the will. Nothing so weakens this faculty as the force of bad habits. Every victory of habit over the will leaves the victim weaker and weaker, till at last his power of resistance is completely annihilated.

10. The formation of habits should begin with birth, especially as regards eating, drinking, sleep. The regularity of these early bodily habits will help to shape the mental habits of after life. Nothing tends so to develop the *vice* of self-indulgence in children so much as to allow them to eat, sleep, study and play when the please, without reference to order and discipline. A mother related a case to me the other day, of her child which had been used to nursing twice during the night, thus disturbing the sleep of the mother and injuring her health. She resolved to break up this habit. The first night the child awoke as usual for its food. The mother refused it, and the result was two hours of lusty squalling. It almost made the mother relent, but she persevered. The next night the same was repeated, only in a less degree. The third night the child did not cry over ten minutes, and this was the end of all her trouble. The child did not reason on the subject; it had no will in the matter. The strong force of habit made it cry for its accustomed food at a certain hour, and as soon as a new habit was formed it took the place of the other, the little fellow being equally satisfied. Mothers would save themselves much care and trouble if they would study the subject of habits thoroughly, and then adopt a wise course with their little ones.

11. Military drill in schools for the young, or gymnastic drill, has great value, from the fact that it not only promotes a healthy physical development, but it helps to form habits of strict order and prompt obedience. When soldiers go to battle if strict discipline is maintained they can lead a forlorn hope; but the moment the ranks are broken, if they cannot form again, all is lost.

12. The habit of doing its *duty* is a very important one for a child to learn. It generally has a good idea of its own rights, but knows nothing of the rights of others. Duty teaches this, especially when right and justice are made a part of it.

13. Lastly, love and affection should grow into habits. Fathers and mothers, sisters and brothers must set the example. There is no moral health or happiness without love. It is the mainspring of all healthy action, the greatest power given to human beings.

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A Sensual Life is a Miserable Life.

FROM SENECA'S "MORALS."

THE sensuality that we here treat of falls naturally under the head of luxury, which extends to all the excesses of gluttony, lust, effeminacy of manners, and, in short, to whatever concerns the over-great care of the carcass.

To begin now with the pleasures of the palate (which deal with us like the Egyptian thieves, who strangle those they embrace). What shall we say of the luxury of Nomentanus and Apicius, who entertained their very souls in the kitchen; they had the choicest music for their ears, the most diverting spectacles for their eyes, the choicest variety of meats and drinks for their palates. What is all this, I say, but a merry madness? It is true they have their delights, but not without heavy and anxious thoughts, even in their very enjoyments; besides that they are followed with repentance, and their frolics are little more than the laughter of so many people out of their wits. Their felicities are full of disquiet, and neither sincere nor well grounded; but they have need of one pleasure to support another, and of new prayers to forgive the errors of the former. Their life must needs be wretched who get with great pains what they keep with greater. One division overtakes another; hope excites hope, ambition begets ambition, so that they only change the matter of their miseries without seeking any end of them, and shall never be without either prosperous or unhappy causes of disquiet. What if a body might have all the pleasure in the world for the asking? Who would so much unman himself as, by accepting them, to desert his soul and become a perpetual slave to his senses? Those false and admirable palates that judge of meats by the price and difficulty, not by the healthfulness or taste; they vomit that they may eat, and they eat that they may fetch it up again. They cross the seas for rarities, and when they have swallowed them they will not so much as give them time to digest. Wheresoever nature has placed men she has provided them aliment; but we rather choose to irritate hunger by expense than to allay it at an easier rate. What is it that we plow the seas for, or arm ourselves against men and beasts? To what end do we toil and labor—pile bags upon bags? We may enlarge our fortunes, but we cannot our bodies; so that whatever we take more than we can hold does but spill and run over. Our forefathers (by force of whose virtues we are now supported in our vices), lived every jot as well as we, when they provided and dressed their own meat with their own hands, lodged upon the ground, and were not as yet come to the vanity of gold and gems, when they swore by their earthen gods and kept their oath, though they died for it. Did not our consuls live more happily when they cooked their own meat with those victorious hands that had conquered so many enemies and won so many laurels? Did they not live more happily, I say, than our Apicius? (that corrupter of youth and plague of the age he lived in), who after he had spent a prodigious fortune upon his belly, poisoned himself for fear of starving, when he had yet 250,000 crowns in his coffers; which may serve to show us that it is in the mind and not the sum that makes any man rich, when Apicius with all his treasure counted himself in a state of beggary, and took poison to avoid that condition which another would have prayed for. But why do we call it poison which was the wholesomest draught of his life? His daily gluttony was poison rather, both to himself and others. His ostentation of it was intolerable, and so was the infinite pains he took to mislead others by his example, who went fast enough of themselves without driving.

It is a shame for a man to place his felicity in those entertainments and appetites that are stronger in brutes. Do not beasts eat with a better stomach? Have they not more satisfaction in their lusts? And they have not only a quicker relish of their pleasures, but they enjoy them without either scandal or remorse. If sensuality were happiness beasts were happier than men; but human felicity is lodged in the soul, not in the flesh. They who deliver themselves up to luxury are still either tormented with too little or oppressed with too much; and equally miserable by being deserted or overwhelmed. They are like men in a dangerous sea, at one time cast upon a rock and at another swallowed up in a whirlpool; and all this from the mistake of not distinguishing good from evil. The huntsman who with much labor and hazard takes a wild beast, runs as great a risk afterwards in the keeping him; so

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many times he tears out the throat of his master; and it is the same thing with inordinate pleasures, the more in number and the greater they are the more general and absolute a slave is the servant of them. Let the common people pronounce him as happy as they please, he pays his liberty for his delights, and sells himself for what he buys.

Let any man take a view of our kitchens, the number of our cooks, and the variety of our meats; will he not wonder to see so much provision made for one belly? We have as many diseases as we have cooks, or meats; and the service of the appetite is the study now in vogue. To say nothing of our train of lacqueys, and other troops of caterers and sewers. Good God! that ever one belly should employ so many people. How nauseous and fulsome are the surfeits that follow these excesses. Simple meats are out of fashion, and all are collected into one; so that the cook does the office of the stomach, nay and of the teeth too, for the meat looks as if it were chewed beforehand. Here is the luxury of all tastes in one dish, and more likely a vomit than a soup. From these compounded dishes arise compounded diseases, which require compounded medicines. It is the same thing with our minds that it is with our tables; simple vices are curable by simple counsels, but a general dissolution of manners is hardly overcome. We are overrun with a public as well as with a private madness. The physicians of old understood little more than the virtue of some herbs to stop blood, or heal a wound, and their firm and healthful bodies needed little more before they were corrupted by luxury and pleasure; and when it came to that once, their business was not to allay hunger, but to provoke it by a thousand inventions and sauces. That which was aliment to a craving stomach is become a burden to a full one. From hence come paleness, trembling, and worse effects from crudities than famine—a weakness in the joints, the belly stretched, suffusion of choler, the torpor of the nerves and a palpitation of the heart, to say nothing of megrims, torments of the eyes and ears, headache, gout, scurvy, several sorts of fevers and putrid ulcers, with other diseases, that are but the punishment of luxury. So long as our bodies were hardened with labor, or tired with exercise, or hunting, our food was plain and simple; many dishes have made many diseases.

It is an ill thing for a man not to know the measure of his stomach, nor to consider that men do many things in their drink that they are ashamed of when sober; drunkenness being nothing else but a voluntary madness. It emboldens men to do all sorts of mischiefs; it both irritates wickedness and discovers it; it does not make men vicious, but it shows them to be so. It was in a drunken fit that Alexander slew Clytus. It makes him who is insolent prouder, him who is cruel fiercer; it takes away all shame. He who is peevish breaks out presently into ill words and blows. A man's tongue trips, his head turns round, he staggers in his pace; to say nothing of the crudities and diseases that follow upon this distemper. Consider the public mischiefs it has done. How many warlike nations and strong cities, that have stood invincible to attacks and sieges, has drunkenness overcome? Is it not a great honor to drink the company dead? a magnificent virtue to swallow more wine than the rest, and yet at last to be outdone by a hogshead? What shall we say of those men who invert the offices of day and night? As if our eyes were only given us to make use of in the dark. Is it day? It is time to go to bed. Is it night? It is time to rise. Is it towards morning? Let us go to supper. When other people lie down they rise, and lie till next night to digest the debauch of the day before. It is an argument of clownery to do as other people do. Luxury steals upon us by degrees; first it shows itself in a more than ordinary care of our bodies, it slips next into the furniture of our houses, and it gets then into the fabric, curiosity, and expense of the house itself. It appears, lastly, in the fantastical excesses of our tables. We change and shuffle our meats, confound our sauces, serve that in first that used to be the last; and value our dishes not for the taste but for the rarity. Nay, we are so delicious that we must be told when we are to eat or drink, when we are hungry or weary; and we cherish some vices as proofs and arguments of our happiness. The most miserable mortals are they who deliver themselves up to their palates or to their lusts; the pleasure is short and turns presently nauseous, and the end of it is either shame or repentance. It is a brutal entertainment, and unworthy of a man to place his felicity in the service of his senses. As to the wrathful, the contentious, the ambitious, though the distemper be great, the offence has yet something in it that is manly; but the basest of prostitutes are those who dedicate themselves wholly to lust; what with their hopes and fears, anxiety of thought and perpetual disquiets, they are never well full nor fasting.

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What a deal of business is now made about our houses and diet, which was at first both obvious and of little expense! Luxury led the way, and we have employed our wits in the aid of our vices. First we desired superfluities, our next step was to wickedness; and in conclusion we delivered up our minds to our bodies and so became slaves to our appetites, which before were our servants and are now become our masters. What was it that brought us to the extravagance of embroideries, perfumes, tire-women, etc.? We passed the bounds of nature and launched out into superfluity, insomuch that it is now-a-days only for beggars and clowns to content themselves with what is sufficient. Our luxury makes us insolent and mad. We take upon us like princes and fly out for every trifle, as if there were life and death in the case. What a madness is it for a man to lay out an estate upon a table or a cabinet, a patrimony upon a pair of pendants, and to inflame the price of curiosities according to the hazard of either breaking or losing them? To wear garments that will neither defend a woman's body nor her modesty; so thin that one would make a conscience of swearing she were not naked? For she hardly shows more in the privacies of her amour than in public. How long shall we covet and oppress, enlarge our possessions, and account that too little for one man which was formerly enough for a nation? And our luxury is as insatiable as our avarice. Where is that lake, that sea, that forest, that spot of land that is not ransacked to gratify our palate? The very earth is burdened with our buildings, not a river nor a mountain escapes us. Oh that there should be such boundless desires in our little bodies! Would not fewer lodgings serve us? We lie but in one, and where we are not that is not properly ours. What with our hooks, snares, nets, dogs, etc., we are at war with all living creatures, and nothing comes amiss but that which is either too cheap or too common; and all this is to gratify a fantastical palate. Our avarice, our ambition, our lusts are insatiable; we enlarge our possessions, swell our families; we rifle sea and land for matter of ornament and luxury. A bull contents himself with one meadow, and one forest is enough for a thousand elephants; but the little body of a man devours more than all other living creatures We do not eat to satisfy hunger, but ambition; we are dead while we are alive, and our houses are so much our tombs that a man might write our epitaphs upon our very doors.

A voluptuous person, in fine, can neither be a good man, a good patriot, nor a good friend; for he is transported with his appetites without considering that the lot of man is the law of nature. A good man (like a good soldier) will stand his ground, receive wounds, glory in his scars and in death itself, love his master for whom he falls, with that divine precept always in his mind, follow good. Whereas he who complains, laments and groans, must yield nevertheless, and do his duty, though in spite of his heart. Now what a madness is it for a man to choose rather to be lugged than to follow, and vainly contend with the calamities of human life? Whatever is laid upon us by necessity we should receive generously, for it is foolish to strive with what we cannot avoid. We are born subjects, and to obey God is perfect liberty. He who does this shall be free, safe and quiet. All his actions shall succeed to his wish; and what can any man desire more than to want nothing from without and to have everything desirable within himself? Pleasures do but weaken our minds and send us for our support to fortune, who gives us money as the wages of slavery. We must stop our eyes and ears. Ulysses had but one rock to fear, but human life has many. Every city, nay, every man is one; and there is no trusting even to our nearest friends. Deliver me from the superstition of taking these things which are light and vain for felicities.

Dr. O'Flanagan and His Wonderful Cures.

BY AMANDA T. JONES.

I'm Barney O'Flanagan, lately from Cork;
A sakin for practice I've coom to New York;
It's a dochter I am, and well versed in the thrade,
Who can mix yeez a powdher as good as is made.
Have yeez pains in yer bones, or a botherin' ache

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In yer jints afther dancin' a jig at a wake?
Have yeez caught a black eye from some lounderin' whack?
Have yeez vertebral twists in the shpine av yer back?
Whin yer walkin' the strates are yeez likely to fall?
Don't whisky sit well on your shtomach at all?
Sure its botherin' nonsense to sit down and wape,
Whin a bit av a powdher 'ill put yeez to slape;
Shtate yer symptoms, me darlins, and niver yeez doubt,
But as sure as a gun I can shtraighten yeez out.

Thin don't yeez be gravin' no more;
Jist quit all your sighin' forlorn;
Och, Dochter O'Flanigan's thrue to the core!
And what's more, he's a gintleman born.

Coom thin, ye poor craythurs, and don't yeez be scairt!
Have yeez batin' and lumberin' thumps at the hairt?
Wid ossification and accelleration,
Wid attenuation and ragurgitation,
Wid amaciation and axacerbation,
Wid expectoration and wake cerculation,
Wid pracipitation and hapitazation,
Wid praoccupation and avaporation,
Wid hallycination and acrid sacration,
Wid black aruptation and putrification,
Wid great jactitation and cowagulation,
Wid quare titillation and cowld perspiration?
Be me sowl! but I'll bring all yer woes to complation;
Onless yer in love—*thin* ye're past all salvation.

Och, don't yeez be gravin' no more!
Jist quit all yer sighin' forlorn;
Ould Barney O'Flanagan's thrue to the core,
And indade he's a gintleman born!

Sure, me friends, its the wonderful luck I have had,
In the tratement of sickness, no matther how bad;
All the hundreds I've cured it's not aisy to shpake;
And if any sowl dies, fath I'm in at the wake!
There was Misthress O'Toole was tuck down mighty quare;
That wild there was niver a one dared to lave her.
And what was the matther? ye'll like for to hare—
'Twas the double quotidian humerous faver.
Well, I tuck out me lancet and pricked at a vein;
Och, murther! but didn't she howl at the pain!
Six quarts, not a dhrap less, I tuck, widout sham;
And troth, she shtopped howlin' and lay like a lamb.
Thin for fare sich a method of tratement was risky,
I hasthened to fill up its place wid ould whisky.

Thin don't yees be gravin' no more;
Jist quit all yer sighin' forlorn;
Remimber O'Flanagan's thrue to the core,
And ye'll prove him a gintleman born.

Well, Misthress O'Toole was tuck betther at once;
For she riz up in bed and cried "Paddy, ye dunce,
Give the dochter a dram." So I sat at me aise
And powerd down the punch jist as fine as ye plaze.

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Thin I left a prascription all written down nate,
Wid ametics and diaphoretics complate,
Wid antispasmodics to kape her so quiet,
And a toddy so shtiff that ye'd all like to thry it.
So Paddy O'Toole mixed 'em well in a cup,
All barrin' the toddy—and that he dhrank up;
For he shwore t'was a shame sich good brandy to waste
On a double quotidian faverish taste.
And fath we agrade it was not bad to take,
Whin we dhrank that same toddy nixt night at the wake.

Thin don't yeez be gravin' no more;
Jist quit all yer sighin' forlorn;
Whin ye thry Dochter Barney yer throubles are o'er,
Wid the help of a gintleman born.

There was Michael McDonegan down wid a fit,
Caught of dhrinkin' could watther whin tipsy a bit.
'Twould have done yer heart good to have heard him cry out
For a cup of pottheen or a tankard of shtout;
Or a wee dhrap of usquebaugh fresh from the shtill—
And the snakes that he saw, troth 'twas jist fit to kill.
It was mania potatororum, bedad!
Howly Mither of Moses, the divils he had!
Thin to scare 'em away we surroonded his bed,
Clapped on forty laches and blisthered his head,
Bate all the tin pans, and set up sich a howl,
That the last fiery divil ran off, be me sowl!
And we writ on his tombstone: "He died av a shpell
Caught of dhrinkin' cowld watther shtrait out av a well."

Thin don't yeez be gravin' no more;
Arrah! quit all yer sighin' forlorn;
There's shtrychnine and vitril and whisky galore,
And the dochter's a gintleman born.

There was swate Ellen Mulligan sazed wid a cough,
And ivery one said it would carry her off.
"Whisht!" says I, "thrust to me now, and don't yeez go crazy,
If the girlie *must* die, sure I'll make her die aisy."
So I sarched through me books for the thrue diathasis
Of morbus dyscrasia tuberculous phthasis;
And I boulsthered her up wid the strongest of tonics,
Wid iron and copper, and hosts of carbonics;
Wid whisky sarved straight in the finest av shtyle;
And I grased all her inside wid cod liver ile;
And says she, whin she died: "Och Dochtor, me honey!
Its you as can give us the worth av our money;
And, begorra! I'll shpake to the divil this day,
Not to kape yeez a waitin' too long for yer pay."

Thin don't yeez be gravin' no more;
Jist quit all yer sighin' forlorn;
Me patients are proud av me medical lore,
All because I'm a gintleman born.

There was Teddy Maloney, who bled at the nose
Afther blowin' the fife; and mayhap ye'd suppose
'Twas no matther at all; but the books all agrade

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'Twas a sarious visceral throuble indade.
Wid the blood shwimmin' round in a circle elliptic,
The Schneidarian membrane was wantin' a shtyptic;
The antarior nares were nadin' a plug,
And troth Ted himself was in nade of a jug.
Thin I rowled out a big pill of sugar of lead,
And I dosed him and shtood him up firm on his head;
And, says I, "Now me lad, don't be atin' yer lingth,
But dhrink all ye plaze, jist to kape up yer stringth."
(Och, his widdy's a jewel! but whist, don't ye shpake!
She'll be Misthress O'Flannagan airly nixt wake!)

Thin don't yeez be gravin' no more;
Jist quit all yer sighin' forlorn;
For yer widdies, belike, whin their mournin' is o'er,
Will marry some gintleman born.

Ould Biddy O'Cardigan lived all alone,
And she felt mighty nate wid a house av her own;
Shwate-smellin' and whoulsome, swaped clane wid a rake,
Wid two or thray pigs, jist for company's sake.
Well, what should she do but be tuck sick so vile,
Wid choleraphobia vomitus bile.
And she sint shtraight for me. "Dochter Barney, me lad,"
Says she, "I'm in nade av assistance, bedad!
Have yeez niver a powdher, or bit av a pill;
Me shtomach's a rowlin', jist make it kape shtill."
"I'm the bye can do that," says I: "Hould on a minit!
Here's me medicine chist, wid me calomel in it;
And I'll make yeez a bowle full av rid pepper tay,
So shtrong ye'll be thinkin' the divil's to pay!"

Thin don't yeez be gravin' no more;
Jist quit all your sighin' forlorn;
Here's drugs be the handful and pills be the score,
And to dale them a gintleman born.

Wid a gallon of rum, thi a flip I created,
Swate wid mustard and spi e and the poker I hated
Rid hot as a guinea jist out of the mint;
And, begorra! shtraight into her shtomach it wint.
Och never belave me, but didn't she roar!
I'd have kaped her alive wid a quart or two more;
And the thray little pigs, in that house av her own
Would'nt now be a shtarvin' and squalin' alone;
And that gossoon, her bye, the shpalpeen altogither,
Would niver have sworn that I murdhered his mither.
Sure, for sayin' that same but I sarved him a thrick,
Whin I met by him chance—wid a bit of a shtick.
Fath, I dochtered him well, till the cure I complated;
And, be jabers, there's *one* man alive that I've thrated!

Thin don't yeez be gravin' no more;
Jist quit all yer sighin' forlorn;
Jist knock whin yer sick at O'Flanigan's door,
And die for a gintleman born!

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CHATS WITH THE CHILDREN.

BY THE EDITOR.

COURAGE.

Children, I have something to say to-day ɔout courage. This splendid word grew out ' the Latin word *cor*, which means heart. So understand the word we must know what ɛart is. You may have heard of good-hearted ɔys and men. This means clever, good na- red, kind, jolly boys and men; genial felows, ɛr ready to do a kind deed; unselfish fellows, ho don't want all the good things for them- lves, but are ever ready to share them with ɛir mates. So again of honest-hearted, which ɛans simple, straight-forward, innocent, and uth-telling; heavy-hearted, which means sad, rrowful, dejected and down-cast; hard- ɛarted, which means cruel, wicked and un- nd; proud-hearted, which means vain, con- ited and foppish; pure-hearted, which means ɜnuine, true and honest, without spot, and ɔt tarnished, chaste. So you have heard of .int-heartedness, which means to get discour- ɡed, despondent, blue; to be weak, idle, lazy, ıd to fail. The heart, however, I am to talk ɔout now is the courageous heart. This .eans the strong, the brave, the bold, the arless, the enterprising, the heart that never ıys, "I can't." I believe nearly all little chil- ren are brave. They don't know much about ar. Till they have been burned they are not raid of a red hot stove. Till they have been ıt they are not afraid to handle sharp knives. hey do not fear to go close to horses' heels, and on the edge of steep places, play on the ack of a railroad. There comes, however, ith knowledge, fear. Fear has a bad effect on ɔurage. A baby has no fear, but a boy of ve years old has. He is afraid in the dark, ıd magnifies a shadow or a nothing into a ıonster. He fears to sleep alone, to speak to a ranger, to go to a new and strange place. ow this being afraid has its uses; but too ıuch fear is bad, and courage is its true cure. he courageous boy is not afraid of his shadow. nd now I want to tell you a story of a dog ıat had more fear than most dogs; and per aps with reason too, for when a puppy he was ıken away from his quiet home to a region full f dangerous animals, such as he nor his ancest- rs before him had never seen or heard about he result was he was constantly in fear, and ad not courage enough to go out of his kennel r away from his home. One day a great ma- gician came along and asked him why he never went out into the fields and woods for air and exercise, when he told him he was afraid of snakes and panthers, lions, and other fierce creatures. The magician took from his bag some powder and told him to eat that and it would change him into a snake, when perhaps he would be fearless. When he ate it he was at once changed to a snake, but instead of biting anybody he crawled off to a hole and staid there, only venturing forth to catch mice and birds which might be away from home. As a snake he was constantly in fear his head would be snapped off, and when the magician came round again, he begged to be made into a lion. "As a lion" said he "I shall know no fear." So, quick as a wink he was made into a lion and placed in a thick jungle. It was not long before he heard a terrible roaring and screaming in the woods. It must have come from all the lions and tigers in the region. He had never in his life heard such noises; but instead of going out boldly to see what it was he sneaked away and hid, and was nearly starved when the magician came round again. He upbraided him for his cowardice and made him go back to his former condition as a dog. "You have the heart of a coward" said he, "and a coward you will ever be, either as a dog, snake, or lion." So it ever is, courage always comes from the heart. And if boys and girls want to be brave and fearless they must practice while young such things as will make them so. They must get over being afraid in the dark; not be frightened at thunder and lightning, not run at the sight of blood, not tremble in their shoes when speaking a piece. There are some things, however, it is well to be afraid of. One is to tell a lie; another is to speak a cross, unkind word to father or mother, brother or sister; another is to drink or smoke; another is to live a lazy idle life, and another is to do anything you are ashamed of. If you are afraid of these things we may safely hope you will make a mark in the world somewhere and somehow. Your name may not be heralded on the wings of fame all over the globe, nor inscribed upon the page of history, but it will be cherished by those who know and love you, and that is enough to satisfy the ambition of most persons. With this lesson I will leave you for another month.

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EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

CHEESE.

I. I am an old lady, seventy years of age, and one of your constant readers, so I think I ought to know something. I have been in the habit of using cheese all my life, and I believe it is good for anybody. I am boarding up town, and just opposite me at table sits an upstart medical student, and there aint a thing in heaven and earth that he does not think he knows. Every time I eat a piece of cheese he begins to preach a sermon about the bad effects of cheese; he says it causes dyspepsia, and ever so many difficulties. These young doctors before they shed their pin feathers are unusually wise. Will you please tell me if cheese, not cottage cheese, or goat's cheese, or head cheese, but good old-fashioned cheese, ever hurts anybody, as that young doctor says it does. I want to tell him somebody knows something beside him.

ANSWER. — Good cheese is nutritious and wholesome in moderate quantities. Some people cannot use it. Some kinds of cheese, say that which is very old and dry, is not good. Eat it with brown bread and gems, without butter.

PAPER COLLARS.

II. I am a lad attending school; for three years, as a matter of convenience and economy, I have worn paper collars. I have been told lately that they are unhealthy, and I find that I have an eruption on my face and neck just where the collar touches. Will you please inform me if they are really unhealthy? We boys all want to know, for more than half of our class wear them.

ANS.—Paper collars are often glazed with some substance which irritates the skin, and when they are, there is of course an objection to them.

GRAY HAIRS.

III. I am a lady about thirty years of age, my complexion is good and my features better than ordinary; but one thing annoys me —you know we all like to look as young as we can, and my hair is growing quite gray. It is naturally very black, and every gray hair shows. I have used Hall's Hair Restorer, which has certainly improved it, and I think if I continue its use it will restore my hair to its natural color; but I fancy that since I have used it my head aches, and has some kind of peculiar sensation just where I apply it. Do you think it is safe to use, and is there anything that can restore the natural color of the hair without any injurious consequence? I know at least six ladies who have used the Restorer, and their hair is very much improved.

ANS.—Don't use the Hair Restorer; never mind premature gray hairs, but take good care of your health, and remember to invigorate the scalp daily by friction and cold water.

SHORT BREATH.

IV. How can one remedy shortness of breath?

ANS.—Shortness of breath is best remedied by educating the lungs. This must be done judiciously and with care. If weak or diseased don't exercise them too much at first, but a little every day, or several times a day. Keep them well expanded. When you wake in the morning lie on your back and inflate them as full as you can ten or twenty times. Vocal gymnastics are also good. Sit at the piano or organ and practice over the scale for fifteen or twenty minutes every day. Gymnastic training to enlarge the chest is useful, especially arm and chest movements. Sometimes short breath is the result of poor thin blood and lack of nerve force. In this case look well to both food and stomach. Don't overdo, especially in going up stairs rapidly. It takes four times as much strength to go up stairs two feet a second as it does one. Don't run or walk too long, fast or far. Dress loosely about the waist. These hints are probably more than you will practice. If not, write for more.

HEATING PROPERTIES OF OATMEAL.

V. Is oatmeal heating to the blood?

ANS.—Nearly all foods are to a certain extent heating. If they were not they would be worthless. Now from this standpoint oatmeal is a little more than half as heating as butter.

OATMEAL AND BROWN BREAD.

VI. Is not oatmeal and brown bread fattening? If so what will the fat ones do?

ANS.—If you are already to fat, use more acid fruit as a part of your diet, and work harder. Butter and sugar are more fattening than fruit; avoid these to a great extent, also much milk and cream.

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MINCE PIES AND BRANDY.

VII. There are many people who would not ɔ any kind of liquor as a beverage; but who ɔ it in considerable quantities in mince pies d sauces. Will you give your opinion of such ɜming inconsistency?

ANS.—This is not seeming inconsistency, but ɪl inconsistency. Liquors are no addition to ɜs or sauces, and mince pie, as generally made, th or without liquors is an abomination.

LEMON JUICE.

VIII. It is supposed by some people that mon juice and other natural acids are inju- ɔus to the coating of the stomach; is there ɪy foundation for that supposition?

ANS. — Too much lemon juice if taken an empty stomach might do harm, but it ould be slight. Taken after the food is in the omach there would be no objection to it ɪ this ground. Should lemon juice prove too rong dilute it with water, or use sweet ɜanges in their place. We prefer them to ɜmons, except for lemonade, or in place of inegar.

BACKACHE.

IX. Will you tell me why young girls hould not have *backaches?* I am a young girl, nd never knew what it was to be free from a ain in my back. I expect to be married soon, nd as married people are still more likely o have backaches, would you advise me to ıarry? The weakest part of me is my back.

ANS.—It is difficult to answer your question. 3y all means try and find out the cause of your ıackache. Your dress may have something o do with it, so may the shoes you wear if hey are high heeled, so may the chairs you sit ɜn if not well made. You might get rid of it ɔy judicious lifting cure, to strengthen the mus- ɜles of this part. In this case avoid all lever nachines, or those in which the weight cannot ɔe reduced to five pounds to begin with; and ɜrain up a pound a day from this, under the ɔare of an experienced guide.

CURE FOR INEBRIATES.

X. Please tell us if there is anything that will prevent a man from drinking intoxicating drinks—disgust him with it; also what is the cause of an acid stomach after eating plain wholesome food?

ANS.—Perhaps the prayer cure would do, or some modification of it. If the man is worth saving, let a dozen good women, as the boys say, "go for him." The acid stomach indicates indigestion.

ABDOMINAL SUPPORTERS.

XI. Are abdominal supporters or bandages, any help to weak bowels?

ANS.—Better train and educate the abdominal muscles to support the bowels, if possible.

LADIES' VISITING CARDS.

XII. Are ladies' visiting cards ever poisonous?

ANS.—Yes. We have just received a visiting card which seems to be mostly mineral water. When burned, most of it remains as ash, and it gives out a sickening stench. It has no toughness, but breaks on bending. We have not had it analyzed, but do not doubt but a young child might be injured or killed by getting it into its mouth.

TOBACCO AND VENTILATION.

XIII. My husband uses tobacco, and of course his breath smells of it. How shall I ventilate our bed-room, for baby is sickly?

ANS.— If possible reform your husband. Fathers do their delicate children great harm by smoking where they are, or by chewing and poluting their breath and breathing the poison where the child can be injured by it.

SKIRT SUPPORTER.

XIV. Will you please tell us of a waist or skirt supporter, to use in place of corsets? and where such can be procured?

ANS.—Any ingenious person can make one for herself, and then teach her friends how to make them.

OUR GRANDMOTHERS.

XV. Were our grandmothers healthier than we are?

ANS.—T. W. H. says: "The Abbe Robbin was a chaplain in Rochambeau's army during the Revolution, and wrote thus in regard to the American ladies:

"'They are tall and well proportioned; their features are generally regular; their complexions are generally fair and without color. . . . At twenty years of age the women have no longer the freshness of youth. At thirty-five or forty they are wrinkled and decrepid. The men are almost as premature.'"

"Again. The Chevalier Louis Felix de Beaujour lived in the United States from 1804 to 1814, as consul-general and *charge d'affaires;* and wrote a book immediately after, called "A Sketch of the United States at the Commencement of the Present Century." In this he thus describes American women:

"'The women have more of that delicate beauty which belongs to their sex, and in gen-

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eral have finer features and more expression in their physiognomy. Their statue is usually tall; and nearly all are possessed of a light and airy shape, the breast high, a fine head, and their color of a dazzling whiteness. Let us imagine under this brilliant form, the most modest demeanor, a chaste and virginal air, accompanied by those single and unaffected graces which flow from artless nature, and we may have an idea of their beauty; but this beauty fades and passes in a moment. At the age of twenty-five their form changes, and at thirty the whole of their charms have disappeared.'"

From this we conclude the women of one hundred years ago were no healthier than they are now. Our grandmothers are always a picked set who outlive their cotemporaries, and cannot be compared with the whole generation to which they belong.

WOMEN AND TEMPERANCE.

XVI. Is there no other method for women to promote the cause of temperance than that of praying and singing, as in Ohio? Some women cannot pray, others cannot sing.

ANS.—Ten years ago a woman, Mrs. Heine Smith, of Leeds, troubled at the enormous drunkenness of working England, set herself to establish a club-house which should be pleasant enough to supersede the low beer-houses of the town, and should yet sell no liquor. It was opened under the auspices neither of church nor of total abstinence society. No man was kept away by sullen dread of tract or lecture on the sin of drinking. If Darby came, prompted by curiosity, he found a bright, clean, wholesome and attractive place, where he could get food or rest, or the reading of a newspaper, or coffee and tea, or an amusement of some sort, at the lowest possible price. Nothing was wanting but liquor, and that he hardly missed, one would suppose, since now twenty of these club-houses flourish in Leeds, while their copies have sprung up all over the kingdom. This institution is called "The British Workman." One in South London may be taken as a model of the rest. It has a reading-room, refreshment-room, committee-rooms, and conversation or game-rooms, where, however, no gambling is allowed. Tea, coffee, cocoa, soup, and dinners are served almost at cost. The charge for the use of the excellent library and reading room is a dollar and a half a year, or three cents a week. Occasional concerts are given, to which the wives and friends of members are invited. In short, "The British Workman" offers to his many namesakes in the flesh the social recreation and mental improvement which they need, without the temptation of drink.

WHEN TO SEND CHILDREN TO SCHOOL.

XVII. When should children be sent to school?

ANS.—Children ought to be taught early in life habits of order, and have hours devoted to some sort of mental and physical discipline, but generally they should not go to the common schools before seven years of age. They may go to the Kinder Garden at three.

LEMONADE.

XVIII. Should a woman who is nursing drink freely of lemonade?

ANS.—She should use lemonade with caution, especially if the child is very young.

WEAK CHEST.

XIX. What is the best exercise for a girl of nine years, in a city like this, in order to develop the chest?

ANS.—Exercises with small wooden dumb-bells are the best for such cases. Ten minutes daily ought to be sufficient. The child will need a teacher; and if the exercises are with a class, and to music, all the better.

FURS FOR CHILDREN.

XX. What do you think of loading the necks and shoulders of children in furs and velvets, and the legs in thin stockings and one skirt?

ANS.—We don't think well of it at all. It renders them liable to colds, and makes them so tender they suffer with a breath of air. The thin shoes and stockings are abominations for winter not to be tolerated.

CROOKED FOLKS.

XXI. Do you think it possible for a person who has stooped from childhood to twenty-three to regain an erect position, and what are the best methods you can advise? Do you think stooping is produced by a weak stomach, as well as backache?

ANS.—No doubt but you can be greatly improved by thorough, long continued physical culture, of the right sort. See article on Spinal Curvature in March HERALD. It is necessary to persevere for life in the right way, and not give up at the end of a few weeks.

MEN AND WOMEN.

XXII. Why is it that men who indulge in the constant use of ardent spirits and tobacco look and *are* better at fifty, than women of thirty who have no such habit?

ANS.—The out-of-door habits of men help

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n over many of their sins easily. The in- and sedentary habits of some women ke them invalids in spite of anything they do. Other things being equal, however, n are no healthier or longer lived than men.

THE BREATH.

XIII. How can a disagreeable breath be ided?

NS.—By keeping the mouth clean, the teeth d and sound, the stomach healthy, the bow- open, the skin active, and by always breath- pure air.

BATHING.

XIV. How often shall a delicate person e? what hour in the day?—water warm or l?

NS.—Delicate people may bathe daily if y do it in a warm room, in tepid water, and much friction and little water. They ought bathe at least three times a week. The ning is a good time, and so is the middle the forenoon.

CORSETS.

XV. I would like to leave off corsets, but afraid of taking cold. Will you please tell at to put on in the place of them?

NS.—In leaving off your corsets substitute e loose garment of equal warmth. Also he the chest in cool water every morning, l rub the skin so that it shall be red and wing. This will strengthen the chest, and p to prevent taking cold.

IDIOCY AND FRIGHT.

XXVI. Is idiocy ever caused by fright?

NS.—Yes, quite frequently; also by falls, l injury of the mother before birth of child. is fact makes it important that prospective thers should never be frightened, or ex- sed to dangerous conditions.

SWEET SPIRITS OF NITER.

XXVII. Sweet spirits of niter is a family dicine used by many people. Is it of any e?

ANS.—Of its medical value The London Lan- t of Dec. 6th says: "It is probably almost tirely devoid of those diaphoretic and diu- tic properties with which it was formerly edited." And further: "Whether made in e old fashion or the new, it is of little worth; it when made by the blundering old process possesses absolutely no value whatever."

MAKING FIRES.

XXVIII. I live in the country, and am a rmer's wife. My husband likes to lie in bed in the morning, and I have to get up and make the fire Is this right? I think he ought to do it. Don't you?

ANS.—Yes, *he* ought to, unless there are rea- sons you have not given. The following story may help you a little: "They tell about a man in Maine who refused to get up and build a fire, and his wife said she shouldn't, and so they remained in bed thirty-seven hours before it was settled." Our sympathies are, of course, with the woman, and we may be permitted to entertain a regret that it did not occur to her to perform a great deal of self-sacrifice upon this occasion. How noble and beautiful would have been the example set her husband, how touchingly would she have shown her wifely devotion, how keenly would she have made him feel his meanness if she had risen and made the fire; if she had risen, we say, and made a fire under the bed, in order to rout him out all of a sudden. A woman who throws away such a chance as that is false to her duty and to her sex.

MODERATE DRINKING.

XXIX. Is not moderate drinking perfectly safe, and teetotalism fanatical and irrational? Nearly all physiologists admit alcohol to be a food, and if a food why not use it, and not abuse it? And does not the Bible allow of a little wine?

ANS.—The Independent says: "Since slavery, drunkenness is the most destructive evil and gigantic sin of our land. It gives us a million drunkards and paupers, a hundred thousand idiots and insane, and nearly or quite a thou- sand murders and suicides every year. Add to these the homes that are desolated by intem- perance, and we have a host of slaves like that which we liberated by war. Not one drunk- ard but began as a moderate drinker, and in- tended to remain as such. One in ten of our habitual moderate drinkers becomes a drunk- ard, and eight of the other nine are injured, and not one of them benefited by the indul- gence. It was the example of reputable men who drank moderately which encouraged this army of drunkards to think that they could safely do the same. The result is poverty, death and hell. How any man with these facts before him, can make his brother to offend we cannot understand. It is not enough to say that the drunkard does not follow the example of the moderate drinker. He does follow it till his moral sense and will are weakened, and he outruns his teacher. Total abstinence is a safe example, and nothing else is; and to appeal to

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the Bible in defence of alcoholic liquors is like appealing to it in defence of slavery. Christianity has educated the public conscience on these two subjects beyond the explicit teachings of Scripture."

To this the reverend editors of The Independent adds words that would hardly be considered orthodox if not written by a clergyman; but which, nevertheless, are sound and true. Read them: "But the fact that Christ used liquor and that the Bible allows it is no proof that we should. Things were allowable and right in the days of Moses that were not so in the days of Christ, and there has been some progress since Christ's time in the application of the principles of abstract morals."

CHANGE OF LIFE.

XXX. May I ask if the change in life can be delayed, and how?

Ans.—It may be brought on prematurely, but cannot be put off beyond the limit nature has given it.

TEMPERATURE OF THE SEXES.

XXXI. Do men and women differ in temperature and rate of pulsation?

Ans.—A very excellent Memoir has appeared on this subject from the pen of Dr. J. Stockton Hough in an exchange, The Philadelphia Medical Times. We quote the author's conclusions. They are: 1. That males have, as a rule, from the beginning to the end of life, a higher temperature and a less frequent pulsation of the heart than females; varying, nevertheless, according to temperament, constitution, age and condition of health. 2. That children have a higher temperature at birth and for a short time subsequently; which, though slightly lower than that of an adult, nevertheless slowly and gradually declines to a certain point until about the sixth year of age is reached, after which it gradually increases until developmental maturity is reached, when it gradually and slowly declines again as old age (second childhood) advances. The pulsation of the heart follows just the opposite course, being most frequent when the temperature is the lowest and less frequent when it is highest. 3. That males appear to have a greater variation in temperature than females; thus agreeing with their greater variation in stature and many other peculiarities. 4. From all of which we conclude that the woman approaches more to her condition as a child than the man does, and is consequently less highly developed. The male is a secondary evolution from the female.

A VOW.

XXXII. What do you think of the following extract from a medical journal?

"Eli H—, aged about seventy-five years, is now living in a village near this town. Before he was born his father made a vow that if his wife, then pregnant, should bring him a girl—she having had three in succession—he would never speak to the child as long as he lived. The child turned out to be a boy. And now what is most strange and remarkable occurred. This boy would never *speak to his father*. Moreover, during his father's lifetime he would never speak to any one but his mother and three sisters. As soon as his father died, he being then thirty-five years old, his tongue was unloosed to every one, and he has remained an ordinary loquacious individual ever since.

"The verification of this strange story is easy enough. Every one in the village was acquainted with 'dumb Eli,' and numerous living witnesses remember his dumbness passing away."

Ans.—We have heard of similar things before, but doubt the truth of the stories. We do not doubt, however, the power of a parent to do either good or evil to an unborn child in this way.

ARTIFICIAL BUTTER.

XXXIII. How is artificial butter made?

Ans.—We fear to tell you, lest you go to making it; but here is the secret: It is made from the yellow, tasteless and odorless oil that is obtained from beef suet. This oil is placed in churns with one-fifth of its weight of sour milk and churned until an emulsion is formed, annotto being added to give it the required color. It is then cooled, and worked and salted like common butter.

BEER YEAST.

XXXIV. What is beer yeast?

Ans.—The London Food Journal declares it to be a substance identical with the poison from that terrible reptile, the cobra. Is The Food Journal joking?

FURS FOR CHILDREN.

XXXV. What do you think of loading the necks and shoulders of children with furs and velvet, and the legs in thin stockings and one skirt?

Ans.—We don't think well of it at all. It renders them liable to colds, and makes them so tender they suffer with a breath of air. The thin shoes and stockings are abominations for winter not to be tolerated.

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QUACKERY.

XXXVI. What is the origin of quackery?

ANS.—Quackery originated in the doctrine ıat drugs have inherent virtues in the cure of ıe sick. The moment a person finds out that ature makes the cure and hygiene is her great hysician quackery has no charms for him.

SCIENCE AND READING.

XXXVII. Can a knowledge of science be ɔbtained by mere reading?

ANS.—The knowledge obtained in this way ı better than none, but of a different kind from aat obtained by a study of facts.

ADULTERATED TEA.

XXXVIII. Is there much adulterated tea in ıarket?

ANS.—We don't know how much, but preume there is a great deal; a great amount has ecently been discovered in London. The Chiıese have discovered that tea leaves mixed with lung, iron filings and other substances—all ɔowdered fine—suits the English market, and ıre sending compounds of that sort over in huge masses; of course not without connivance from ɔome English dealers on this side. Recently .t was alleged by the Sanitary Commissioners of the city (London) that no less than 10,000,000 pounds of such tea, totally unfit for human food, was in bond ready for sale. The quantity would, we believe, be greatly increased if partially adulterated tea were added to the list.

FRUITS AND NUTS.

XXXIX. In The Dietetic Reformer for July "T. B." states that he lived at one time solely on "uncooked fruits, nuts, etc." As I am seeking information on that diet, I shall be very much obliged if he would let me know about the sorts of fruit and nuts, and the average quantities in weight which he found necessary to keep him in vigor and health. I have known several people who have lived on fruits, but in all cases they were of very sedentary habits, taking hardly any exercise.

ANS.—"T. B." replies: "That he never fed by rule, nor used scales. During a large portion of the year apples and pears supply sufficient succulent food. Oranges help late in the spring, and the summer fruits need scarcely be enumerated. Of nuts there are several varieties—Spanish, Barcelona, English filberts, almonds, walnuts, Brazil nuts (when fresh), chestnuts, etc. (cocoa nuts being always necessarily unripe for importation, are indigestible). For quantity take half-a-dozen handfuls or a dinner plateful of Spanish nuts and a dozen moderate-sized apples. A few figs or raisins also afford a relish. These, with a book, will occupy a considerable time to crack, pare and masticate. I found two such meals a day sufficient. In a money-heaping life the time question is against an uncooked diet. On the other hand, the thorough mastication, without which such food can not be swallowed, is a strong argument in its favor with the digestive powers. I was never a professed 'pedestrian,' and had no training previous to my long walks, which proved that what is called strength depends on the healthy condition of the fluids of the body, enabling such exertion as is easily within the muscular power or mechanical construction of the frame to be continued during a lengthened period without fatigue."

ORANGES.

XL. How many oranges in a box?

ANS.—A box of oranges contains 360 fruit, and weighs about 80 pounds; a box of lemons, about the same number, weighing 96 pounds. The average price of a box of oranges at Palermo in the beginning of the season, November, is five francs; at the end of the season almost double. Lemons fetch 10, 12 or 15 francs per box. Prices rule higher at Messina.

RUBBER BOOTS INJURIOUS.

XLI. Is the wearing of India rubber boots injurious to the feet? They are worn a good deal in snow and wet, and are said to keep the feet very warm and dry?

ANS.—They may be worn temporarily in wet and snow, but to wear them constantly is very injurious to the feet.

ALCOHOL AND FOOD.

XLII. Is alcohol a food?

ANS.—A professor in a New York medical college writes to The Tribune that it is, or at least he writes that there is force in alcohol which the body may use. This, however, is not admitting much, for the experiments of Dr. Smith go to show that there is five times as much force stored up in a glass of milk as in a glass of brandy. And most forms of alcoholic drinks depress vitality, showing they do not yield force to the system, but abstract it. Chemistry may claim alcohol as a food, but physiology does not.

AN ICE BAG.

XLIII. How can I preserve small quantities of ice in summer?

ANS.—Make a bag large enough to hold the ice. Then make another much larger bag. Put it outside the small bag, and fill the space between with sawdust.

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

BRIGHTER AND BRIGHTER.

Men said: "This life is a desert
Of weariness, sin and tears;
And though sometimes in the distance
A dream of rest appears,
It vanishes into heaven
As the longing pilgrim nears."

Ah, false, ill-boding prophets!
Why troubled ye my soul?
Better and sweeter and richer,
I find the years as the roll,
Till my heart breaks into singing
With a joy it will not control.

When my child soul trembled and questioned,
Thine, Lord, was the voice that spake:
"Dost think, O thou of little faith!
That the daily bread I break
Shall waste in my hands, or the wine of life
Be spilled ere thou canst take?"

"Dost think that thy Father would cheat thee
With a promise of good at morn,
Then leave thee wandering at noon,
Forsaken and forlorn?
Nay! nay! and even at sunset
Another day is born."

So my soul goes on in gladness,
Since my Father shows the way;
Even my tears are rainbow-hued,
Smitten through with Love's dear ray;
Brighter and brighter my pathway
Shines to the perfect day!

Elizabeth Converse.

WHAT IS WEALTH?

Wealth is something more than gold,
More than luxury and ease;
Treasures never to be told
May be found apart from these.
Men who great possessions own
May be needy none the less;
They are rich, and they alone,
Who have store of nobleness.

Palaces are dreamy domes;
Fair demesnes deserts wild,
If there be not happy homes,
Gentle thoughts and manners mild.
Trust me, though his lot be small,
And he makes but slight pretence,
He who lives at peace with all
Dwells in true magnificence.

If you'd prove of noble birth,
Oh! beware of judgments rash,
Scorn to measure human worth
By the sordid rule of cash,
Gold and silver may depart,
Proudest dynasties may fall;
He who has the truest heart
Is the richest of us all.

TRIBULATION.

Aweary, desolate, of joy bereft!
Of love and faith forsaken?
Poor heart! it feels life has no pleasure left,
And sighs to sleep—to sleep and never waken.
The tide of hope runs low—
God's pity! human hearts must suffer so.

We mortals—when the thing that we have loved,
The dream that we have cherished,
The hope that we have nurtured is removed,
Broken, destroyed—fancy all life has perished.
A meteor falls from heaven— [riven.
We quake, and think the earth's foundations

Well, we grow wise with time. In youth we give
To reason scanty measure.
It takes a lifetime to learn how to live,
And few claim wisdom as an early treasure.
Sages in vain may preach,
Time and experience alone will teach.

The truth comes home to us in after years:
We bow to it, confessing
That spite of all our doubts, complaints and fears,
Our great affliction was our greater blessing;
Although our tear-blind eyes
Failed at the hour to pierce its dark disguise.

We sin, and pitying, God stands apart,
While the red fire of anguish
Burns its clean passage through the aching heart,
And all the weeds of vice and error languish;
In soil which nourished tares [bears.
The righteous seed of truth springs up and

So good is suffering in its aim and end;
Let the soul falter never!
Lean we upon the bosom of a Friend,
The same to-day, to-morrow and forever.
We fail, but do not fall—
The eternal arm of Love sustains us all.

Annie L. Murrey.

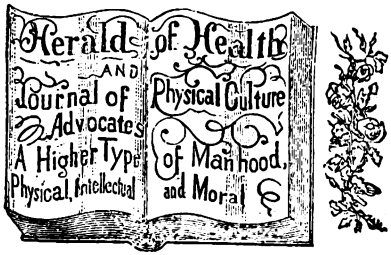
BE CONTENT.

If none of us are happy as we wish to be,
Not so miserable as we deserve are we;
We've more sorrow made than we've ever cured,
More good we've received than we've wrong endured,
And, counting all our hours together,
We've had more fair than stormy weather;
Grief's hardest thunderstorm in trouble's night,
Hath left our soul-sky next morning bright.
Never a peace flower gives richest balm
Till after the storm comes the soul's sweet calm.
The cold and the storm o'er our skies must sweep,
Ere the joy-stars come out and our bright watch keep;
The shafts of heaven our hearts may have rent,
To show us the deep-covered jewel, content;
Through strata of orrow, turned up and turned over,
The gem of our strength at last we discover.

Lydia M. Millard.

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EDITORIAL DEPARTMENT.



NEW YORK, MAY, 1874.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

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☞ *Exchanges are at liberty to copy from this magazine giving due credit to* THE HERALD OF HEALTH AND JOURNAL OF PHYSICAL CULTURE.

TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

CHILDBIRTH WITHOUT PAIN.—The following letter was received some weeks since and placed in the hands of Mrs. E. B. Duffey, one of the editors of Arthur's Magazine, and author of "What Women Ought to Know," and "No Sex in Education" for a reply. Similar testimony has been received from numerous persons.

To the Editor.—DEAR SIR.—Some time since I purchased a copy of "Parturition without Pain." A friend borrowing it asked permission to lend it to Dr. S., who is considered a very eminent physician. His opinion was, that it was a book calculated to do a great deal of harm; a book made to sell; so much acid put in the system by the fruit diet was a positive injury to both mother and child, giving them both the colic after the child's birth.

As I am not brilliant enough to reply to his argument in regard to the *acid*, will you please be kind enough to give me an answer for him. Respectfully, A SUBSCRIBER.

MRS DUFFEY'S REPLY.

PHILADELPHIA, PA., March 18th, 1874.

DEAR MADAM.—The Editor of THE HERALD OF HEALTH has sent me your letter dated February 4th, with the request that I should answer it.

The reasoning of Dr. S. is so absurd that I really do not see what I am to say in direct reply. My own style of reasoning on all subjects is so practical that no doubt it will receive the contempt of those who have a fancy for fine theories. But I have seen so many promising theories built up without any basis in fact whatever, that I prefer to seek facts direct and let theories go.

Now the facts in regard to fruit diet in pregnancy, as far as I know them, briefly are these; The little volume "Parturition without Pain," gives a number of instances of women who by following the rules in regard to diet, etc., have found their condition before, during, and after confinement, greatly improved. Secondly, I can speak in the most positive terms in regard to myself, having on two occasions followed the suggestions of this volume, as far as practicable, and on both trials experiencing a *radical* change for the better. Thirdly, the experience of all who by my example and advice have been led to the same course of living during pregnancy, exactly coincides with mine. Fourthly, Dr. Holbrook assures me that he is constantly receiving voluntary testimony heartily endorsing the truth of the advantages of the fruit diet. Now it seems to me here are enough facts to break down all the theories

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which all the professional men in the world might be able to construct against it.

I once heard a physician object to the fruit diet on the ground that it would not give enough strength to the pregnant woman to undergo the severe trial of parturition. But if the trial is robbed of its severity, where is the need of the extra strength? Again, what strength is imparted by rich, strong animal food that is ejected from the stomach, or else passes out of the system undigested and unassimilated? Or if this food is digested and assimilated what is the result? Why, plethora, that most dreaded foe of the pregnant woman, leading either to miscarriage or to a terrible confinement, in which the chances of death are greatly augmented.

But we do not need to theorize on this matter. Facts are sufficient. And the women who have tried the fruit diet unanimously testify that, first, there is not as great an expenditure of strength needed during confinement; and, secondly, they regain their strength much sooner afterward. At my confinement I was dressed, about my room, and at my daily writing on the eighth day, which was being quite as smart as I expected to be on the twenty-first under the old plan.

Dr. S.'s theory says that "the fruit diet is a positive injury to both mother and child, giving them both the colic after the child's birth." Facts say the doctor is mistaken.

Let us examine what the fruit diet does. Both by what it excludes and what it furnishes it prevents indigestion and nausea, or morning-sickness, it avoids the dangers of plethora, and it prevents too great a hardening of the bones of the embryo, thus rendering parturition more easy. Will the doctor pretend that any of these avoided conditions are ones necessary to the good health of either mother or child? If he does he simply proves himself unworthy to be heeded. And the hard, incontrovertable facts go to prove that colic is unknown by either mother or child when the fruit diet is faithfully adhered to.

If you have occasion to test the virtues of this diet, do it without fear, feeling assured the *theories* of any doctor under the sun can never hurt you while the *facts* are all in your favor. I hold such an undoubting faith in the efficacy of the fruit diet in pregnancy, that I believe it is capable of revolutionizing all the conditions of maternity, and I might almost add, of removing the primal curse which declared to women, "in sorrow thou shalt bring forth children." The homeopathist might here exclaim, *similia similibus curantur!*" as Eve got into trouble by eating an apple, so may she get out of it by eating another.

Whatever course of diet or exercise serves to render pregnancy a state of health and comfort and parturition easy, must be a correct and natural course. Pregnancy is a state of health, not of disease and suffering; and those who declare it to be the latter libel their Creator.

Yours truly, MRS. E. B. DUFFEY.

TEMPERANCE AND LIFE INSURANCE.—In London there is an institution which insures lives of teetotalers, and during the last five years, including 1870, the mortality among abstainers was twenty-six per cent. below the average, while in the general section, including all, it was only seven per cent. below the average.

IS ALCOHOL A FOOD?—Many claim that alcohol is a food, and so admissible. Even if there is some force stored up in alcohol, the amount is very small. Alcohol is made from sugar. When it is made from grain the starch of the grain is first changed to sugar and then to alcohol. When sugar ferments it forms two products in nearly equal quantities, one is carbonic acid and the other is alcohol. Now there could not be anything like as much force in the alcohol as the sugar; just as much would be abstracted as was lost in its conversion to carbonic acid. So it would be better, even if alcohol had no bad effects, to eat the sugar or grains that produce it. There is ten times as much available force in a glass of milk as in a glass of alcohol, and no poisonous qualities. In

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nearly all experiments made it has been proved that alcohol depresses vital force, and when it increases it, it does so in the heart, where least wanted. It sometimes makes men think they are stronger and braver when they are really weaker. Even a drunken man thinks himself strong and rich.

HYDROPATHIC TREATMENT OF INFLUENZA IN HORSES.—One of our subscribers—G. G. Lobdell—sends us some interesting experiments in the treatment of his horses according to the hydropathic methods. They are well worthy of attention:

"As requested, and for the benefit of those interested, I herewith give you a description of my method of treating the above disease, which has prevailed during the past winter, and the result of the writer's treatment of it. The symptoms which characterize this disease, so far as my observations extend, and which have been confined to my own horses, are loss of appetite, dullness, more or less debility, and great weakness—which is manifest more particularly in the posterior extremities; due, I think, to partial paralysis—pulse quick, from forty to forty-five, but generally weak, respiration accelerated.

"Sometimes they are taken with a chill, and sometimes very marked indications of inflammation of the lungs (pneumonia) are soon manifest. In some there is a slight soreness of the throat, accompanied also with a slight cough and slight discharges from the nose. The attacks have always been sudden, and without any apparent premonitory symptoms. The animal will appear perfectly well at night and be found sick in the morning. Some appear more affected across the loins (partially paralyzed) than others.

"Those of my horses which became sick first were taken during my absence from home, and were given medicine and rubbed with mustard. Those that got medicine and recovered were much longer in getting well than those that did not; and one, the Hambletonian stallion, Harbinger, died. All that have been taken since (twelve) have been treated with perfect success with the hydropathic or wet pack, which I apply as follows:

"I use an old bed quilt that will completely envelop the breast and body, cut it in two slits, so it will fit around the fore legs when placed under the body and so that it will lap over on the back. Around this I put common horse blankets, the whole secured well by a plowline or surcingles; the intention being to envelop the whole body, breast and lower part of the neck closely and completely with the wet quilt. If the throat is affected I put an additional pack around the throat, or have the quilt long enough to cover the throat. The quilt should be taken off and rinsed every three hours, the animal washed thoroughly with water, not warm, but of a temperature suited to the degree of fever, so as not to produce chilliness; then the animal thoroughly rubbed with straw, or a cloth, and the pack renewed. The pack I usually wet with water of a temperature such as used by women in washing, but not so wet as to drip.

"My horses have not been disposed to lie down until they get better. As soon as I discover the first symptoms of sickness I put them in a pack and continue it, with or without intermission, as the violence of the attack indicates is necessary, or until the pulse and breathing are better. If not very bad, I use the wet pack during the day only, and a dry pack at night. I use great care in feeding until they are entirely recovered; give scalded bran and oats in small quantities, and all the water they will drink and no medicine whatever.

"This disease cannot be attributed to want of proper food or care; for most frequently it attacks horses in the best condition, and those that have been treated with great care. I shall not attempt to assign a cause for it. It may be atmospherical, or due to a blood poison; but from the great success which has followed this treatment, as well as from the symptoms, I believe that it is inflammatory in its nature. have used the pack with like success in inflammation of the pleura, inflammation of the lungs, founder, and inflammatory rheumatism. I have been asked: "Do horses have inflammatory rheumatism?' I answer, yes. I have treated

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as clear a case as was ever manifest in a human being. I believe the treatment beneficial in all diseases arising from blood poison or indigestion.

"Those of my horses that have been packed—giving them one pack each day for two or three days—have not had the disease.

Is Alcohol a Stimulant, or What?—The other day at a temperance meeting we heard some interesting discussions respecting the nature of alcohol. Dr. Smith, of the Board of Health, said it was a stimulant; Dr. Willard Parker said it was not a stimulant but an irritant; Mr. Mowatt declared it to be neither, but a narcotic; Rev. Dr. Prime said it was first a stimulant, then an irritant and last a narcotic. Wonderful agent this alcohol! It seems to be all things to all men. In 1629, John Grove said of wine: "I comfort and preserve, let this be my character; I am cousin-german to the blood, I repair the debility of age, revive the spirits, exhilarate the heart and steel the brow with confidence." Before this, however, Shakspeare said: "O thou horrible spirit of wine! if there be no other name to call thee, let us call thee devil."

Cheap and Desirable Homes.—For the purchase of cheap and desirable homes Alexander county, in Western North Carolina, affords most excellent opportunities. The prices of good lands (unimproved) range from two to five dollars per acre. Improved lands, of good quality, from five to ten dollars per acre, according to improvements. These lands are admirably adapted to the successful cultivation of nearly every kind of cereal and vegetable; and there is always a ready market for the products of the farm. Most of the fruits of a temperate climate succeed remarkaby well. There is evidence of the existence of several kinds of valuable minerals in this county; while the water-power afforded by its mountain streams is sufficient to drive nearly, if not all, the machinery in the State. There is also a very large supply of valuable timber, such as pine, oak, hickory, ash, whitewood (the tulip tree), black locust, chestnut, maple, cherry, beech, birch, black walnut, etc. Then there is an abundant supply of pure, soft water, as well as two sulphur and five chalybeate springs of excellent quality. One of these sulphur springs is located three miles from the beautiful little town of Taylorsville, and is said to be one of the best in the country. Two of the chalybeate springs are about a mile from the same town, and their waters are also claimed to be of superior excellence.

Taylorsville is the county seat of Alexander, and is located about the center of the county. Its population probably does not exceed one hundred and fifty; but it is, nevertheless, a thriving little place. It contains a courthouse, five stores, three churches, one masonic hall, and two flourishing schools. The scenery round here is varied and grand. The climate is almost unrivaled in point of salubrity. Indeed, the writer believes it to be one of the most suitable places on the American continent for consumptives and other invalids, and he has no doubt that the time will come when the high lands of North Carolina will be numbered among the most popular health resorts of the world. The pure, dry mountain air in summer is always delightfully cool and invigorating, while the winters are comparatively mild for the latitude.

With these and other advantages, too numerous to be mentioned, it is to be hoped that this mostd elightful and health-giving region nature has done so much to adorn, will at no distant period be brought into notice and appreciated as it justly deserves. M. Benfield.

Teetotalism and Health.—There is in England a Forester's Lodge, which in 1869 had 120 members. Twenty-two were teetotalers. During the year sick members received ninety-seven pounds sterling. Ninety-five and three-quarter pounds went to the non-abstainers and one and a quarter pounds to the teetotalers. In 1870 there were 136 members

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and twenty-five teetotalers. The sick this year received ninety-one pounds, and less than three-quarters of a pound was given to the teetotalers. In 1870 there were 150 members and forty-five teetotalers. Sixty-five pounds were given to the sick, but the teetotalers did not receive one cent. Their share was nearly one-third of the whole.

EXPERIMENTS WITH ALCOHOL. — Dr. Parkes and Wcolowicz in some experiments upon the pulse of a strong, healthy young man, found that in twenty-four hours, when his drink was water, the heart beat 106,000 times. Then he was subjected to experiments to show the effects of alcohol. With one ounce of fluid alcohol in twenty-four hours the heart beat 430 times more; with two fluid ounces it beat 1,872 times more; with four fluid ounces it beat 12,960 times more; with six fluid ounces it beat 18,432 times more; with eight fluid ounces 25,488 times more. This gives an average of thirteen per cent. more work done by the heart during the alcoholic period, than on water. After the alcohol was discontinued the heart's action reacted and it beat with great feebleness, showing its nutrition had been impaired.

Does alcohol make men work easier? Dr. Parkes, in some experiments on a soldier to establish the use of alcohol as food, gave a strong, healthy man only water for three days and kept him digging in earth as hard as he could. The mean number of beats per minute was 66. The soldier then worked three days with the addition daily of twelve ounces of brandy. During this period the pulse beat 71 times a minute. The amount of work done was about the same in each instance, and the excretions did not differ much. To find out whether the man worked on brandy with more ease than on water, he was asked to note his own feelings. He commenced with the belief that he could work better with the brandy, and ended with an entirely opposite conviction. During the first two days he said the brandy, he thought, gave him spirit to think he could do more; but when he came to do it he was less capable than he thought. On the third day he was hot and thirsty, had palpitation, was obliged to stop frequently because his "breathing was not good." He could hardly refrain from throwing down his spade and stopping work.

SEA-SICKNESS.—Sir James Anderson in a work on sea-sickness, says: "For this disease avoid brandy, but ease the stomach first with warm water, then with cold."

A STANDARD TEMPERANCE PRIZE ESSAY. —At the late National Temperance Convention the subject of a standard temperance work was presented by Job H. Jackson, a member of the Society of Friends, of Pennsylvania. Mr. Jackson stated that he had secured $1,200 to aid its publication, and asked the co-operation of the Convention, which heartily endorsed "the former utterances of the National Temperance Society concerning the imperative demands for such a work," and appointed a committee to secure it.

The committee have decided to divide the work into three parts, and to offer two prizes for each of the three essays, to be open to all writers who choose to compete therefor, in this and other countries:

1. The scientific; embracing the chemical, physiological and medical aspects.

2. The historical, statistical, economical and political.

3. The social, educational and religious.

The fund at present at command, through the worthy efforts of Mr. Jackson, enables the committee to announce two prizes for part first, the scientific, viz.: For the best essay, adjudged satisfactory, the sum of $500 will be paid; for the second best essay the sum of $300 will be paid. Accepted manuscripts to become the property of the National Temperance Society.

Among the topics which the committee suggest that the scientific essay should include are:

1. What is alcohol? Is it a poison? Is it food?

2. What becomes of alcohol when taken into the human system?

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2. What is the physiological action of alcohol on the living organism? Does it increase or impart force? What proofs can be given of either action?

4. What are the consequences of the use of alcohol on the integrity of the system and the duration of life?

5. What effects has its use on progeny?

6. Is alcohol a medicine? If so, in what diseases and form is it beneficial?

The offers for the scientific essay will remain open to all competitors till January 1st, 1875. Manuscripts (with the names and addresses of the writers by whom they are forwarded for competition enclosed in separate, sealed envelopes, not to be opened till after the award has been made), should be forwarded to A. M. Powell, 58 Reade street, New York.

HINTS ABOUT BAKING.—The most difficult of the young housewife's duties is that of baking. Food prepared in the best manner may be ruined by a fire which is either too hot or too slow during any part of the process.

There are countless recipes for the preparation of food, but very little instruction as to the manner of baking it. Each one must learn by experience, and there are more provoking failures in that direction than any other; and some, although they learn the facts, never learn the whys and wherefores of success.

I used to think that to bake anything well the oven must be as hot as it could be without burning the article to be baked, all the time it was baking. This is not the case with anything except crackers and cookies.

For biscuits the oven should be equally hot when they are put in, but should begin to cool a little before they are taken out; this makes them very light, but one has to watch to keep them from being scorched; eight minutes are enough to bake them; if baked with such a fire as that required for bread they are heavy.

For gems made of Graham flour and water, or for corn bread, the oven should be very hot; but the fire should have been built some time before they were put in, and begin to go down by the time they are light; for if the oven remains as hot as was necessary to make them rise, they will burn before they are thoroughly cooked through.

Bread requires a much slower fire, but it should be even and steady from first to last.

Cake requires a still slower fire than bread; but it must not be too slow or the cake will not be thoroughly cooked through, and will fall when taken from the oven. If the fire is too hot at first it will crust over before it is light, and burst through the crust and rise rough and homely. If the cake is large, some nails or other bits of iron should be placed under it and a paper spread over it, else it will scorch before it is cooked through. Any kind of bread or pastry mixed with water requires a hotter fire than if mixed with milk.

Fruit pies require a hotter fire than bread, but steady from first to last; if too hot at first the crust will cook before the fruit does; if too slow toward the last the crust will dry up before the fruit is done; if too hot toward the last the fruit will stew out before the crust is done. Pumpkin pies require a fire as hot as can be without burning the crust.

Custards require a slow fire, else they will boil and whey out before they are done But puddings require a hot fire, particularly Indian pudding, for they are all the better for being wheyed out.

We talk about hot, quick and slow ovens, but it takes a very long experience to enable one to tell by the feeling, or in any other practical manner, just how hot an oven is until we see its effects on the articles cooked, and then it is too late; and it is impossible to communicate to any one else the precise temperature which is represented by our ideas of hot, quick, etc.

It is a matter of guess-work after all. In fact our whole system of cooking is more or less a patched-up system of guess-work. We have rules and recipes for rich cakes and puddings, but bread of all varieties, pies, butter, etc., are made by guess. And even in those recipes which we have, the ingredients are

measured in all manner of vessels, and no two persons understand alike the terms which designate the quantities.

One of our friends has a stove with glass oven doors. Why could not a thermometer also be attached to them?

I hope to see the time when cooking shall become an exact science; when we shall not only measure the heat of our ovens with thermometers, and know the precise temperature at which they should be for each variety baked therein, but shall also know the temperature at which our yeast and bread-sponge and cream should be kept; when we shall prepare all articles of food by correct recipes, and measure all ingredients in exact and standard measures, which shall be alike all over the country, so that mistakes can only occur when we fail to follow the rules. R. B. HASTINGS.

QUINSY.—I have heard of a very severe case of quinsy being cured by gargling with as hot water as can be borne. The patient could hardly speak, and could not swallow even a little coffee. This was done for two or three hours, and then occasionally during the day. At night swallowing was easy. Next morning the disease was entirely cured. MRS. MILLARD.

FREE MEDICAL COLLEGE.—There were fifteen graduates at the Free Medical College for Women in New York this year. From many sources we hear this institution is taking a high stand as a woman's college. It is the only one free from medical bias, and tuition is without money and without price.

SCIENTIFIC MEN SCIENTIFICALLY STUDIED.—Mr. Francis Galton, well known for his researches in regard to hereditary mental powers, has been pursuing these studies. He made personal inquiries of one hundred and eighty leading scientific men of the day, and on their replies based his conclusions. Most important was the almost persistent combination of remarkable energy of body with remarkable energy of mind. Size of head was considered, and as a general rule was larger than of ordinary gentlemen. Still remarkably many scientific men had small heads, and the small heads were remarkable for activity. Health was a marked feature. Independence of spirit and tenacity of purpose were also most marked characteristics of men of science, and notably a large proportion were men of business, as principals of large commercial or mercantile concerns. The great incentive to science seemed to the author to be innate taste, and in character he regarded the scientific mind as antifeminine. As to hereditary qualities, that of health seemed most essentially due to parentage; and on the parental side the influence of qualities was apparently on the father's side in the proportion of one hundred and twenty-eight to forty-five on the mother's side. A combination of all essential qualities seemed necessary to the production of a man of mark, and that the laws of chances and alternatives came in to give actuality to results. In regard to education the general condition seemed to be that they were not tied down in their studies to particular subjects, but were given to the investigation of many.

INDIAN MEAL A VEHICLE FOR HEAT.—The application of heat to the body as a remedy is very common. Wringing out cloths in hot water, infusions of hops or other plants, and placing them upon the part affected is probably the plan most frequently pursued. This practice is objectionable, because it needs close care to prevent wetting and chilling when cool, and also to be so frequently renewed and reapplied to keep up the due amount of heat. If jugs or bottles of water are employed they are liable to become broken or uncorked, or to leak and deluge the bed. Besides, when water is used as a vehicle for heat it causes moisture, which is undesirable, particularly as it is a good conductor of heat. If sand or sugar is employed the weight is objectionable. In looking about the resources of an ordinary household for a substitute I was led to select Indian meal, as it is generally on hand in the larder

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it is of light weight, not unpleasant in odor, and particularly because it holds heat for a long time. This latter fact I noticed when a mere boy, finding that corn meal would, after grinding, bear several miles' transportation, and after delivery and deposition in the bins of the granary would for hours still be warm from the friction of grinding. When, therefore, it is desired to apply dry heat to any person it is only required to place a quantity of the Indian meal in a baking-pan on a heated stove, and stir constantly till thoroughly warmed. It should not be burnt. It can now be put into woolen sacks and tied up and applied as a hot bottle usually is; or into large flannel bags if for the abdomen. In a case of successful resuscitation of a new-born child, the heated meal was poured into an oblong chopping-tray and a flannel cloth laid over it and the infant in it. The cloth yielded, and the child was partly buried in the warm meal. It is found that the meal retains its heat long, and when it cools it does not chill, which is a very important consideration. Two sets of bags or wrappers may be provided, so that while one is being applied the other may be heated. The meal is not weighty. The aroma of it when heated is rather agreeable than otherwise. It is now my favorite vehicle for applying heat.

E. Cutter, M. D.

Why is It?—At a recent meeting in Maidenhead, Eng., Mr. Benyan, M. P. said: "It well known that a north country laborer can do twice as much work as a South. Why? The North lives on bread and meat, the South on bread and beer."

Some New Books.—We have from G. P. Putnam's Sons several new volumes, of interest to very large classes. First comes "The "Education of American Girls," by Anna E. Brackett, which we should like to see in the hands of every parent who has daughters to educate. If half a million copies could be distributed to such within the next year, we should have a new era in education. From the same house we have also, "Elements of Zoology for Schools," "Building Construction of Brick, Stone and Slate," by R. S. Burns. "Building Construction," showing the employment of timber, lead and iron work in the construction of buildings; and "Building Construction of Timber," all by the same author. We do not doubt they will be found very useful to all concerned.

From Geo. J. Moulton we have a new edition of "Conjugal Sins," by Dr. Gardner. This book has been out of print for two years, and is now revived and before the public again.

From the London Vegetarian Society we have, "Primitive Diet of Man," by Dr. R. Lees, and a condensed edition of Smith's "Fruits and Farinacea," by F. W. Newman, M. A., both valuable additions to the subject of food and diet, and worthy of extensive circulation.

Dr. E. D. Babbitt has sent us his little "Guide to Health." It is chiefly devoted to showing how to treat certain diseases by means of animal magnetism, and as such is peculiarly interesting. This is a subject in which there is much to learn, it being a new and unexplored field. It is designed for the common reader, and sold for $1.

The Galaxy, which is always full of good things, has been publishing several articles lately on "Woman," by Junius Henri Browne. In the last article we find this paragraph:

"The holiest, not less than the greatest men, have owed their inspirations and noblest acts to women. Any attempt to leave her out inaugurates chaos. The most constant and devoted companions of Jesus were women. They comforted him in his sorrow, cleaved to him in his darkest hours, were his true disciples. No swerving in them, no subjection to fear. When the apostles fled they stood firm. They were earliest at the cross, latest at the tomb. Even in that age the women endured, and the men faltered and eulogized themselves. Not a woman was perfidious, not one denied her Master."

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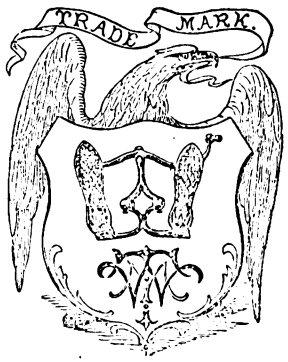
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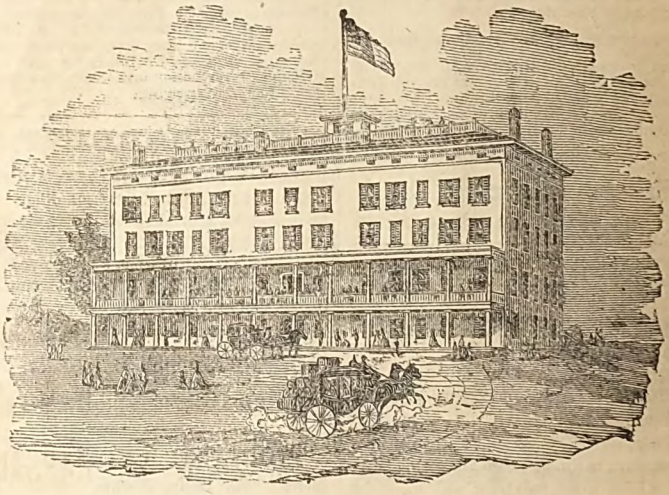
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THE CULTURE OF BODY AND MIND.

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ESSAYS ON SANITARY AND SOCIAL SCIENCE.

(Number 6.)

The Relations of the Air to the Clothes we Wear.

BY DR. MAX VON PETTENKOFFER.*

THERE is no doubt that popular lectures on scientific subjects will not impart really competent knowledge, and will not form experts. Therefore it will be maintained by many that such lectures produce more evil than good, creating, as they do, and augmenting that dilettanteism from which our period is already suffering. In our schools also this dilettanteism is gaining such dimensions that one might get thoroughly frightened at the immoderate expansion of young people's knowledge, were it not for its small depth, which lessens the danger, and for the fact that the forgetting keeps pace with the learning. Accept my open avowal, that I also am unable to invalidate the objection that popular lectures on scientific subjects are not able to impart a really competent knowledge and do not form experts.

SCIENTIFIC EDIFICATION.

But I believe that this does not matter, and that they have no such purpose. They are neither an exhaustive scientific, nor a practical instruction, but a scientific edification and elevation, which are to raise our minds and hearts and to affect us like listening to good music—to a symphony, the purpose of which is certainly not to make musicians of all the listeners. It is sufficient to feel the harmony which lies in the nature of good music. There is harmony in all our knowing and doing, our aiming and striving, as far as there is truth in them, and fortunately the sense for perceiving harmony is as widely spread among mankind as the sense for music. This harmony, which pervades every truth, ought to be brought home to the consciousness and feelings of everybody, so that

* The Crown Princess Carola, of Saxony, invited Professor Pettenkoffer, Professor of Hygiene in the University of Munich, to deliver a course of lectures before the Albert Society at Dresden. This is an exclusive ladies' society, and the lectures are very high in tone and new in material, so we propose to publish them for the benefit of the lady readers of The Herald of Health. If other than ladies are benefited by them we shall be very glad.—Ed.

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the greatest number may rejoice and become interested in it, that we may approach new subjects, and perhaps make them our study; or that, at all events, knowledge and resulting sympathy may induce us to lend our help to those men whose profession and calling requires them to enter more minutely and exactly into the subjects in question. In this respect popular lectures have a high and serious mission. It is their mission to create correct general ideas, to facilitate our grasp of them, to awaken and spread a certain love for different tasks of mankind and of the period, to form ties of friendship between things, ideas, and men. Sympathy and sacrifice cannot be expected or asked from us, if their objects are unknown to or badly understood by us.

AN INCESSANT WANT.

One of the incessant wants of man is air. We want air mainly to nourish us and to keep us cool. The quantity of air inhaled and exhaled by an adult in twenty-four hours amounts on an average to about 300 cubic feet, or 2,000 gallons. What we take in and give out during twenty-four hours in the shape of solid and liquid food, occupies on an average the space of five and a half pints, which is equal to one three-hundreth of the volume of the air passing through our lungs. It will astonish you to hear, perhaps for the first time, that this amounts to 730,000 gallons in one year, and to be reminded of that continuous work which goes on day and night—a never ceasing bellows-blowing, by which the organ of our life is kept in play. Of course the quantity of air flowing round the surface of the human body is greater than that. Do not object that air is something so light that it need not be taken into account. It has some weight; water certainly is 770 times heavier, but our daily 2,000 gallons have for all that a weight of twenty-five pounds avoirdupois. Still, as it is not my intention to dwell here upon the subject of our oxygen-alimentation, I will to-day consider only the second use we make of the air, the cooling of our working machine.

UNIFORM TEMPERATURE.

You all know that life is bound up with chemical processes, kept in continual activity through the ingestion of solid and liquid food, and of oxygen from the air. One of the conditions for the normal performance of these processes is a definite temperature, above and below which they (although not brought to a standstill) go on differently, they leave off performing the functions of normal life, they lead to disease or death. With man this uniform temperature of his organs is one of the most essential conditions of life. The blood of the Negro, living in the torrid zone of the equator, is not by one fifth degree warmer than that of the Esquimaux in the highest north at the coldest time of the year. It is always 99½°. The extremes of temperature under which human life exists are 95° to 104° F. in the tropics, and and 57° to 84° under freezing point in the polar regions. There are even differences of seventy-two degrees in the mean monthly temperature of some countries, and yet the organs of man are everywhere of the same temperature.

By what means is man enabled to meet such colossal differences? What are his weapons for sustaining this gigantic struggle?

Let us look a little nearer into the absolute quantities of heat the living organism has to manage. The chemical processes going on in an adult person within the space of twenty-four hours, produce about 12,000 caloric units. By caloric units natural philosophy designates that quantity of heat which is necessary to raise the temperature of one pound avoirdupois of water by one degree of Fahrenheit. By the heat produced by one person during one day about 600 gallons of water could be made warmer by nearly two degrees, or seven and one-third gallons could be heated from freezing to boiling point, from 32° to 212° F.

Under certain conditions man produces more or less heat; for instance, according to the quantity of food he takes, or the degree of muscular exertion he undergoes, such deviations from the mean amounting at times to fifty per cent of the whole quantity; but it is always the task of the body, and a strict condition for the maintenance of health, to keep the heat of the blood substantially the same, or at least within two degrees.

We have to look upon ourselves as warm and humid bodies placed within a cooler atmosphere. Such bodies lose their heat in three different ways: 1. Radiation. 2. Evaporation. 3. Conduction. This triple arrangement is of great advantage for the heat department of our organism, inasmuch as the existence of these different routes allows of a delicate regulation —that, for instance, which we lose in a given case by radiation can be made up by diminution of loss through the other routes, and *vice versa*. The losses by radiation and by conduction are the most constant under equal conditions, and evaporation of water is the principal means for equalizing differences resulting

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rom varying production of heat, or from difculties of the other two routes. Allow me to lustrate this by drawing your attention to me every day phenomena.

You arrive, for instance, in a hotel after a ourney during a cold winter's day, and have t once a fire lit in your room. Let the fire be ver so bright, the thermometer even rise to a eassuring degree, you must stick to the fireplace—the room does not get warm. If you ontinue to live in the same room and have the ire kept in, it will by-and-bye get comfortable, ven if the thermometer in the room should tand lower than on the first day, and you will hink quite correctly that the room wanted ime to get warmed through and through. Before that had taken place, the loss of heat by ncreased radiation into the incompletely warmed space made itself sensibly felt in the eating department of your body. Radiation s the stronger the greater the difference of temperature between two bodies. Surrounded as you are in a room not only by air, say of 68° F., but also by walls, furniture, etc., which tand perhaps at 38° to 40°, your body radiates its heat particularly toward those cooler objects till they also get warm. For a room to be warm it must get warmed with all which it contains.

LOSS OF HEAT.

Let us now look at the contrary case, when our loss by radiation is uncommonly limited; for instance, in a thronged room on a warm and moist day. You feel an oppressive heat, and scarcely trust the thermometer, which marks only 68°, perhaps your favorite temperature. Quite correctly, then, you will accuse the throng of people, and retire into an adjoining room, where you find the air delicious, and seem to receive new life. There, again, the thermometer is suspected by you, as it is scarcely different from its colleague inside; and if the air in the two rooms were to be examined eudiometrically, the difference would be so small as to leave unexplained the difference in your sensations. What, then, causes the difference? It is the suppression of your lateral radiation of heat when you are in the midst of other equally warm bodies; your receipts and expenditure by radiation cover each other, and the cooling of the individual limits itself to the two other routes, conduction by the air moving round him, and evaporation of water from his surface. On such occasions the pores of your skin pour fourth a quantity of water, and at the same time you instinctively try to increase your loss by conduction, and, if possible, by evaporation, and take to fanning in order to facilitate the departure of your rising heat by the two open routes.

The loss by radiation can be very considerable under certain circumstances; fifty per cent. of the whole quantity of heat generally going that way, it is obvious that radiation deserves our full consideration. Particularly an unequal radiation may be very injurious, such as takes place when a person is sitting or lying near a cold wall which is not covered by some bad heat conductor, or near a window, etc.

On school forms the exposed sides of the first and last pupils are always more cooled than the sides directed toward their neighbors. In this respect there are numbers of practical points, which are far from being sufficiently taken into consideration.

Let us now consider some instances in which the abstraction of heat by evaporation is predominant, or pre-eminently felt. The best known is that experiment by which one tries to learn the direction of the wind when the air appears calm and the sky cloudless. The moistened forefinger feels colder on that side which looks towards the wind, because more evaporation takes place there. The experiment does not succeed so well when the air is moist, because the moisture in the air prevents further reception of moisture by it; in our case preventing the evaporation from the moistened finger.

Our organism acts similarly in all cases where there is an increased production of heat in our body, or where less heat is sent away by the two other routes. It has the power of dilating or narrowing the small blood-vessels in our skin and internal organs. The blood-vessel nerves which govern this motion are not subject to our will, but liable to be excited by external causes. When a person blushes he gives off heat, because more blood rushes into the dilated blood-vessels of his cheeks and periphery generally, and more heat leaves the body. Under similar circumstances the whole surface of our body becomes fuller of blood and warmer; there is more heat to radiate and to be conducted away, and to be consumed by increased evaporation of the watery part of the blood.

The great value of evaporation for the cooling of our body can be estimated by calculating that as little as fifteen drops of water requires two and a half caloric units to be changed into vapor.

A GREAT APPARATUS.

We have at Munich a great apparatus for studying the process of respiration. It was

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given by the late king of Bavaria, Maxmilian II, to the hygienic department of the university. Professor Voit and myself have, by aid of this apparatus, investigated the quantity of water evaporated by men and animals during twenty-four hours. The constant result was that, under other similar circumstances, the quantity of evaporated water always rose in proportion to an increased metamorphosis of tissue, whether this increase was the consequence of increased nutrition or of muscular exertion. We have experimented upon men at rest and at work, and we have found that on a day of rest they usually evaporated through lungs and skin about two pounds only during twenty-four hours, and on a day of hard work four and a quarter pounds of water. In the first instance about 2,016 caloric units, in the second 4,480 had to leave the body in consequence of evaporation.

This explains to you how it can be that even with the hardest work our blood will not become warmer, but sometimes even cooler. The last observation has been made quite recently, in mountaineering expeditions. Professor Lortet, of Lyons, found when he made an ascent of Mont Blanc, that the temperature in his mouth and armpits was less than normal, and became normal only when he was at rest. On such high mountains the lessened pressure of the atmosphere favors the peripheric circulation; there is a rush of water to the surface, and its evaporation takes place more readily, and increases with the altitude. At great heights persons in a balloon constantly complain of great dryness in the mouth.

ECONOMY OF ANIMAL HEAT.

Professors Voit, Recknagel and myself are just now occupied in investigating the economy of animal heat, and we have found that after six hours' hard work the person leaves the apparatus in a cooler condition than when he went in, or after he had been at rest in the apparatus for the same space of time. Of course the ventilation of the apparatus must work well and send per hour about 11,100 gallons, or 1,800 cubic feet of air through the chamber, else less water and less heat depart by evaporation.

MEANS OF COOLING OUR BODIES.

You see what powerful means of cooling our bodies we have in the increase of our peripheric circulation, and consequent evaporation, at a time when the other routes are not open sufficiently; but you see also how dangerous this means can become if it is employed at a time when considerable quantities of heat depart on the other routes. If, heated and damp, you enter suddenly a cold space, where radiation increases at once, and a good deal of heat is also yielded by conduction to the cold air, you are in great danger of contracting an illness by the abnormal losses of heat and the violent and sudden changes in the circulation. But if you undergo such changes slowly and gently, the three routes open themselves harmoniously. Our organism is a faithful and clever servant, who helps himself and his master, provided he is not hurried and ill-treated. When I come to speak of ventilation I shall not forget to speak to you of currents of air called draughts.

The third route, that of conduction, by which we give up heat to the air, is also of great importance and must in some circumstances replace the two others to a considerable degree. As long as our body is warmer than the surrounding air this air gets warmer at every point of contact with our body, but at the same time lighter; and as such it is displaced by colder and heavier air, which in its turn gets warmer and lighter, and so on.

Each person standing in the still air of a room causes in this way an ascending current of air, just like a heated stove. A very sensitive anemometer placed between coat and waistcoat shows the existence of this current, which is strong enough to set the little wings of the instrument in play. The air in this room appears quite still, and yet it is in thousand-fold motion and ceaseless restlessness; but happily our nerves are not aware of this, just as a shortsighted person may deny the existence of some object till his eyes get the assistance of a glass. Whoever of you would be able to feel or see all the movements of the air in this room would probably not be able to stand it. A correct idea may be formed about it by the action of smelling substances. If, for instance, an escape of gas were to take place in a remote corner of this large room you would become aware of it almost immediately all over the room. Our nerves are happily so organized that they begin to feel the motion of the air only when it amounts to about three and a quarter feet per second.

IGNORANCE OF OUR NERVES.

You may have some doubt about this ignorance of your nerves, because the proof lies not in our immediate perception, but in conclusions from other observations; but you may easily convince yourself that is so. It is the same thing whether you move your hand at a certain rate through a still air, or whether air moves at the same rate round your hand.

you will find that you do not feel anything, no resistance, no coolness, if you move your hand at less than nineteen inches per second.

MOVEMENT OF THE AIR.

I take this opportunity to draw your attention at once to the average movement of air out of doors, a subject very imperfectly known to most people, but which you must understand well in order to have a correct idea of the real difference between being in a room or in the open air. The velocity of the air is measured by an instrument called an anemometer, a description of which you can easily get at. In our temperate climate this velocity amounts on an average to about ten feet per second. This would make about seven miles per hour. Imagine a frame about the height and width of a human body, let us say it measures about six feet by one and a half, or nine square feet. If you multiply this by the average velocity of the air, you will find that in one second ninety cubic feet, in one minute 5,400 cubic feet, in one hour 324,000 cubic feet of air flow over one person in the open. I shall come back again to these numbers when we have to consider the subject of the ventilation of dwellings, but you will already understand that it is not too much if 2,100 cubic feet of new air per hour and per bed, are considered necessary in the ventilating arrangments of hospitals, etc. This quantity, which appears large, is after all only about one one-hundred-and-sixtieth of the quantity of air which comes in contact with a person in the open at the above stated average velocity of the air.

You see, therefore, that we give off more heat by conduction in the open air than in a room, and in the latter proportionately more by radiation and evaporation.

The power of conduction is best appreciated when we change the air for some other fluid medium which is a better conductor than air, and more capable of absorbing heat—I mean water. In air of a few degrees of heat, we can feel pretty comfortable with moderately warm clothes; but if with the same amount of clothing we were to get into water of the same temperature we should feel painfully cold, and should probably be frozen to death in a few hours, although our loss by evaporation would have ceased entirely, and that by radiation nearly so. In hot climates, therefore, a daily bath is of great service for the necessary cooling of our body, even if the water is not cooler than the atmosphere.

In the air also the loss of heat by conduction is the greater the lower the temperature and the greater the velocity of the air which flows around us. This explains on the one side, why it appears superfluous in a calm and cool air to make use of a fan, while this expedient acts so beneficially at a higher temperature; and on the other, why, as a rule, a warm air in motion appears much cooler than a calm one of equal temperature.

AFTER A THUNDERSTORM.

Think of the sultriness before a thunderstorm, as long as the air is at rest, and how differently we feel as soon as the first wind rises. The air is not yet cooler, not less saturated with vapor than before, and still it deprives us of so much more heat that we deem it less sultry, even cool, only because it travels over us faster.

When we fan ourselves in a hot and damp air, the same takes place; then also a greater amount of air passes over us in a given time than if we leave the air to its own motions. The fan changes nothing in the temperature and moistness of the air, it only increases its velocity, and in consequence the abstraction of heat, and thus affords us coolness chiefly on the uncovered or only slightly covered parts of our body; therefore ladies have more reason for using it than the stronger sex.

As long as the air is our surrounding medium, an increased evaporation associates itself with the increased loss by conduction, at least as long as the circulation of the blood in the skin remains active and the air is not saturated with moisture. The fan scarcely ever cools by increased conduction alone, but also by increased evaporation. Therefore fanning with dry air is much more cooling than fanning with a moist air of equal temperature. We all know how much quicker wet roads and wet clothes dry when there is a good wind. However rapid the motion of moist air may be it does not dry. When our body is bathed in perspiration the fuller condition of the skin occasions an increased transfer of heat from the dilated blood-vessels to the surrounding air by conduction, but generally also by evaporation.

In southern climes, at the hottest and moist time of the year, when the body cannot lose much heat by radiation towards colder objects, when the temperature of the air approaches and even surpasses at times that of our blood, the European often feels the heat to suffocation, and besides the use of the bath he has no other practical remedy than the fan and the shade.

SHADED AIR.

In the shade the air is not only cooler, but

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also more in motion. The difference of temperature between a place sheltered from the rays of the sun and a neighboring one exposed to them, produces a motion, a current, because bodies of air of unequal temperature are also of of unequal weight. They are not in equilibrium, and seek to re-establish it by motion. Any one may easily convince himself thereof who, on a hot day with calm air, walks alternately over places exposed to the sun and sheltered from it. As soon as he comes into the shade of a cloud, a house, or a tree, he feels at once a soft wind rising. The shade not only protects us against the direct solar rays, but it increases also the ventilation of the shady place.

ACTION OF FANS.

Ths fan acts on the same principle. The Pankah in the bungalow, by increased conduction and evaporation, keeps the blood of the European at its normal temperature of 99½°. When the temperature of the air rises to 140°, when the walls of the bungalow are no longer cool enough to provoke radiation from the heated human body, man is reduced to cooling by evaporation. It greatly depends upon the state of dryness of the air how far he succeeds. The drier the hot air is, the better is it able to withdraw water from the skin, from the respiratory organs, from the wetted floors, and consequently the more heat from the human body The moister it is the less it is able to act thus.

In order to give you an idea of the quantitative differences in play, we will consider the losses of heat by respiration as they take place at different temperatures and different conditions of moisture of the air we draw in. In twenty-four hours the quantity of this air is on an average 2,000 gallons. It has been calculated that by the process of respiration a person loses 1,172 caloric units when the air is at 32° and quite dry, 1,116 when it is half saturated by water, 1,060, when it is completely so. The difference between the two extremes is only a small percentage of the whole loss. But when the temperature is 86° the above numbers would be respectively 1,096, 760, and 420.

MOIST AND DRY AIR.

A comparison of the losses of heat by the respiration of an absolutely dry and absolutely saturated air at 32° and 86° F. is highly instructive. At 32° and dry we lose 1,172 caloric units; at 86° and dry we lose 1,096 caloric units —difference only 76 caloric units. At 32° and saturated we lose 1,060 caloric units; at 86° and saturated we lose 420 caloric units—difference as much as 640 caloric units.

The different states of dryness of the air appears thus to be of a greater moment than the difference of temperature, and this is the reason why our sensations do not always coincide with the thermometer. You readily understand how much more difficult it is to manage one's heat-household in a hot than in a cold climate. Our means for warming ourselves are better than those for carrying off our heat. Therefore the European race has had a hard fight under the equator. The working power of the body depends on a certain amount of consumption, by which a certain amount of heat is necessarily created, which has to leave the body in a regular way. The Hindoo who has to draw the European's Pankah bears the heat better in proportion as he takes less food and creates less heat in himself, but then his working power is also quite proportionate to the total of his consumption.

DEGENERACY IN HOT CLIMATE.

The European's struggle in a hot climate and his dangers of a degeneracy will remain the same as long as he has no better means of cooling himself by some or all of the known three routes. Houses with thick stone walls are tolerably efficacious. These walls rarely get warmer than the average temperature of the year. They cool the air which comes into the house, and act on the inmates in the way we have seen when speaking of the room which is not warmed through and through. A good means would be some contrivance by which the air in the house could be deprived of its water.

DYSPEPSIA REMEDY.—The following remedy for dyspepsia is said to be very effective in some cases: "Sweet cream or sweet milk, the richer the better; use as often as convenient. Whenever any burning or sour sensation at the stomach appears, drink half a pint of sweet cream or milk, and relief is evident. Make free use of it at meals. Total abstinence from the use of tobacco, coffee, strong drink, or anything very sour, must be strictly adhered to. Coffee being the worst of all things for dyspeptics must be entirely avoided." Dyspeptics should also remember that as their troubles come from *over-eating*, or eating irregularly, or some *abuse* of the stomach, the matter of a *limited* diet of nourishing food, taken regularly, is quite as important as anything in the shape of medicine.

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The Summer Rest.

BY FRANK M. HALL.*

And he said unto them: "Come ye yourselves apart into a desert place and rest awhile; for there were many coming and going, and they had no leisure, so much as to eat."—St. Mark vi, 31.

THE annual summer hegira has fairly begun. The heat, unusual to June, has given it this year a premature initiative. A considerable portion of our American people are now embarked upon the pilgrimage—not altogether, as I shall attempt to show, an unholy pilgrimage—to one or another shrine of the twin godlesses, Rest and Health. Shutters closed, doorbells muffled, avenues quiet, trade dull, churches half empty or "closed for repairs," tell significantly of a people that have turned themselves out of doors; and that, to be found, must be hunted by railcar or steamboat, along the sea-shore or mountain side, or in forest depths. Every one that has not yet set out upon this pilgrimage is either preparing for departure, or else is vainly endeavoring to satisfy himself that he prefers to remain at home.

"Where are you intending to spend the summer?" "Where have they gone?" "How long do you expect to be away?" Small talk like this gives to social intercourse such zest as it has just now. Of course the press, that ever-watchful guardian of the moral and social welfare of the people, is making the customary ado about it, all the religious journals being especially active in urging on a chronically recurring hue and cry against the extravagance, the restlessness, the frivolity and fickleness which, they assume to say, are produced and aggravated by this growing custom of leaving home for the summer. In regard to the evils of many a sort that are fast clustering about it, one can hardly doubt; certainly they are too patent, too grave, too manifold to be denied; but in regard to the custom itself, not only is it not unavoidably hurtful, but neither is its cause entirely superficial. It is not a mere fashion, an ephemeral freak to flutter its day at the behest of conventional caprice and perish. It has some very deep roots, any one of which, I imagine, will suffice to keep it perennial.

The name of one of these is climate. Whether it be, as some will have it, that our air has too much oxygen, making too hot and rapid our life-waste, or that it lacks a due proportion of aqueous vapor, or that it is subject to sudden and extreme caprices of temperature, one need not here attempt to determine. Empirical observation demonstrates, and I suppose no thoughtful observer doubts, that there is *something* in our atmosphere which gives an excessive stimulus to the life-producing process—of necessity, therefore, to the life-consuming process also. Evidently, too, this climatic cause begets and intensifies other causes that operate in the same line with it; as thus excess of stimulus, even of that which inheres in the air that is breathed, must react in a depression proportionate to the exhilaration; and this depression begets a craving for some artificial stimulus that shall lend an impetus to the flagging energies again. Under this category enter not only what to many are the only agents recognized by the name of stimulants, the brood of narcotics and alcohol, under its various disguises, but quite as truly also the unnumbered expedients with which our American life abounds for supplementing artificially a life-force that is felt to be inadequate to its task. And each of these artificial stimulants is followed by its depression as inevitably as is that great natural atmospheric stimulant whose reaction, leaving us in the lurch, has driven us on to use such unnatural substitutes.

By this piling of Ossa on Pelion, and weight after weight upon these again, the life-strength is ground out very fast. We are under a constant pressure to overdo everything that we touch.

Another root out of which grows the summer exodus is the pressure that comes of newness and crudity. Nothing is as it is to be. Everything is an open question. Of all our cities one only counts itself to have yet attained such a round solidity of perfection as is symbolized by its pseudonym, and of that one the self-complacent content covers only attainment in matters æsthetic and scholarly; in material growth and attainment even Boston—old and well at ease—is living largely in the future. The occupation of our territory has but fairly begun. To take possession of this, and to create something out of nothing in it, is a task that is continually drawing all our powers out to their uttermost tension. And not only the huge task to be done, but how to do

*A sermon delivered at the Little Mountain Club House, Lake county, Ohio, in June, 1873.

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it, is adding to the strain. Our plans of organization and execution in every field of activity are unavoidably subject to constant readjustment. We are feeling our way by the light of exigencies as they arise, with all the laborious and wearing uncertainty that attends a bold forced march in the night. We are creating precedent and acting upon it before it has taken shape, experimenting, discussing, remodeling, building up and tearing down, and building up again as we push on. Thus are we put under the tripple pressure of creating a past to be guided by, of mastering a tremendous present, of anticipating in our action now the needs of a future that cannot even be predicted.

Once more, a third cause for the phenomenon that we are endeavoring to estimate, is the leveling influence of the theory on which republicanism, as we have it, is based, that "all men are created free and equal," that is, that "every man is as good as any other man." The theory has never been, perhaps never will be, perfectly and fully carried out, even by ourselves.

But it is rather remarkable than otherwise that for now nearly a hundred years we have adhered as closely to it as we have, advancing in the direction of its full realization instead of receding from it more and more, as one who could have foreseen the vastness and complexity of our national development might have supposed us likely to do. The result, or at least one conspicuous result, of its working is that every man's individual fortunes, like our general polity, are in a formative state, always in anticipation. No man counts himself to have yet apprehended, but forgetting those things which are behind reaches forth continually after those things which are before.

Rest, content, peace, such words as these belong not in our vocabulary; we retain them, indeed, in our dictionaries as mementos of what were once the possession of our fathers on the far side of the water; but the sweet thoughts for which they stand, like some timorous bird that has wandered from its native zone, fluttered and startled by our fretful turmoil, have spread their pinions and flown back to their original seats.

The absence of primogeniture, or any law of entail by which a fortune once built up can be fixed in perpetuity, prevents the withdrawal from the mutual struggle for advancement of those whose fathers went through it all. The son, or at the farthest remove possible the grandson, must take up the strain and tussle precisely where his immediate progenitor encountered it, and from the foundation upbuild all new again. It is a war that knows no discharge. No access of raw recruits puts any on the retired list. Thus by our polity, by our position, by the very air we breathe are we pushed on to an excess of strain. We are the worst overworked people that the sun shines on. It is hardly possible to exaggerate by over statement here.

Now it is evident what must come of it all unless this resistless pressure upon the life-force can be lightened by opening waste-locks and weirs to diminish the strength of the tide; that is, a shattering of fiber in the individual and in the nation, premature decay, paralysis of the body politic and of the man.

Just as surely as the process goes on unbroken shall we become likewise the worst used-up people that the sun shines on.

There are not wanting those who would seek to apply some sedative to the difficulty by urging upon us moderation and the adoption of more placid and equable methods of approaching and dispatching work.

Hygienists have been counseling this remedy, ever since the over-wearing tendency of our American life became apparent. So have the medical profession, the pulpit, the press, the writers upon sociology and political economy, with small result thus far. The cause would seem to lie too deep for the reach of any such surface remedy—that is, in the fire and intenseness of our Anglo-Saxon and Teutonic blood, aggravated by the physical and political conditions that have been named. Tell a volcano to keep cool, advise a hurricane to calm itself, ask an earthquake why it makes so much ado, but do not expect an American to approach his work by gradual stages and by processes that are other than exhaustive. Lord Palmerston, when required by public exigency to prepare an autograph dispatch, could be content to have his desk and paper at one end and his inkstand at the other of a room thirty feet in length, requiring him to pass and repass the entire distance every time he wished to fill his pen. He would gain time and self-composure that he might so compound his epithets and modulate his periods as to compass what Talleyrand had said was the one great end of language—"to conceal thought." Why hurry therefore? Let the vexation or the threat have time to cool along the pen.

The dispatch whose slightest unguarded word might create inflation or collapse throughout the entire commercial world, could well enough wait a few minutes more. So the sixty

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eet of leisure might well enough be used to 'beget a temperance that should give it smoothness." More helpful such equipoise and conservation of force as this toward keeping the peach-bloom in his cheeks and the young vigor in his step, than all medicines and doctors' wise saws. What with this knack of doing work reposefully, and what with hounds and horses and long walks, we know at least he kept the spring of youth at seventy-five. But then that was in the Foreign Office in London. He was an Englishman. Who ever knew an American executive or an American merchant to do from choice the like of what he did? Lord Russell, too, when Prime Minister, could be seen out of office hours in Hyde Park frolicking with the children, more boy than man; but he was an Englishman, too. It seems not to be in us at all, the possibility of wearing the yoke lightly. It is out of our nature to intersperse amusement with labor, to turn from the one to the other often and easily all the year through, putting a solid bar of unalloyed relaxation between day and night, so welding the days more firmly and making them all golden. It blows hot or it blows cold with us straight on. "While we live, let us live," the enervate Roman of the later Empire was fond of quoting from an earlier poet. We go to the opposite extreme and make our motto, "While we live, let us work."

Now, I think, that in this tendency of ours to mass labor and leisure apart from each other instead of interblending the two all along, we may discover the working of an instinct that tallies with the peculiar feature of our climate.

Believing that the same God, who by the breathing of his Spirit through the written word whispers still small voices in the heart, speaks also in snow and storm and cold and heat. I believe it to be clearly written in our climate that the lassitude of July and August were put into our year as a counterfoil for overwearied lives to use against the glow and stress of a too exhilarating winter. Increasing activity of the nervous energies in those who do the thinking, the writing, the contriving, the leading for the people, demands unbroken leisure for replenishment and recuperation somewhere; and these two months, with their burning wilting heats are wedged into the year like a double note of warning, saying to each, "Now you *must* take it." Our people by a sort of instinct are feeling their way to a recognition of this law, and in these summer flights from business and routine, and the exactions of society, and the cares of home establishments, are conforming their practice to its dictates. I hold it, therfore, to be exceedingly superficial and flippant in the Christian press or the Christian pulpit to attempt to plant itself in the way of a tide like this, that has all nature back of it. Better, it would seem to me, that the Church should deal with it as she tries to do with dancing, card-playing, opera-going for example—things that having some nucleus of good are in danger of gathering, and do often gather round them accessories which are evil—namely, attempt to prevent or eliminate the evil rather than make an indiscriminate onslaught upon good and bad alike.

The summer vacation has come to be the fashion, and what is called society is like Wordsworth's cloud "which moveth altogether if it move at all;" so sure as general preference acquires the prestige of fashion will thousands of the weak-headed and empty-hearted fall into its wake from sheer devotion to conventional law. So, doubtless, there will be upon the wing this season, as in other years, infatuated, foolish insects of fashion men and women so far from being worn that they have never yet learned what sort of a sensation it would give one to do some small thing for ones self or for the helping of another. Dawdlers will be abroad, idlers, busybodies, retailers of imaginary grievances, occasionally—occasionally, I say, for the species is less numerous than the satirists would have us believe—occasionally a clergyman of the cream-cheese variety airing his cloth and his kids in mock recuperation of an exhausted intellect whose presence in him would otherwise have escaped detection. These are the hangers-on upon the summer rest, gathering together like the jackals where the carcass is.

But the true army of strength seekers are far other than these. During the coming weeks will be absent from their homes repairing waste and inhaling new vigor to blossom out by-and-bye in words and works of blessing for us who remain at home a host of genuine devotees to the service of their kind in the office, in the school, the home the church. Mothers, worn by excess of long fidelity, whose children have already risen to call them blessed; mourners, whose tears refuse to dry amid the too familiar traces of the loved one that is gone; saintly invalids whose failing power to do makes doubly precious the benediction of their holy will to suffer; lawyers who by staunch and persistent work—the only sure pledge of success to the lawyer or to any other aspirant—have fairly earned all the fresh force that they

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can gain from canoes or hunting traps or hemlock woods; teachers with vitality fretted out in constant care of the countless infinitessimals that makes up education, capitalists and operators with whole cities building in their brains; the drudges at the desk pen weary, rarely, for an uncertain respite only; the physician, galley slave of all the rest, and even here and there an earnest, faithful clergyman, supposed by those who do not know to have worked for only one day out of the seven. I say that these and such as these will constitute the main body of those who will be absentees for the weeks to come. You know that they will, better than I can tell you, for representatives of many of the classes I have named come day after day to join you here. We, who remain in the city to keep the wheels of business and of social and religious life from coming to an utter stand-still, miss them from their places there, and not least from their places in the church.

Others, too, will soon leave us for a time We shall miss them all—not their presence only, but their help in every Christian labor more. Benevolent enterprise will stagnate for many weeks to come, and the Church's common activities will be hardly more than kept in motion. We who stay to blister on the pavements would very likely be somewhere else than there if business or family cares would but loose their grasp upon us, or if money would come and bid us choose to our liking.

The same causes that send others to drink elixir from the salt sea air, to climb the grand old rock-ribbed, hemlock covered hills, to loiter along the upper lakes, or to push into the primeval forests, relax and enervate us also who are tied to the old routine. They not only make us feel like falling back somewhat from the high tension of enthusiasm to plod along upon the strength of a cold sense of duty, but they make it wise and needful for us so to do. The *ennui* that we read upon the jaded, listless faces of those about us on the street, and that we feel must be legible enough upon our own, reminds us that God has assigned to August no less than to January its appropriate office—to the one a burden of ceaseless, hopeful, glowing activity in every good work, to the other its burden of enforced slackening of mental strain. And it tells us, too, that if we overfraught brain-workers scorn the warning and attempt to turn our enervate August into a brisk January, God's law here as elsewhere will be its own executioner and await us ahead there somewhere with the stroke that our own temerity has forged. Could you be in your city home to-day, you would very likely hear one and another lamenting—it is quite the fashion with many at this time of the year—and you would perhaps hear such lament that "Zion is languishing" now, that "all her ways do mourn," that "none come to her solemn feasts," that there is no interest in religious efforts, and but little doing in God's service; and all this because so many of the Church's strongest, ablest workers will every year at midsummer take themselves away from the sphere of religious effort in their own home neighborhood to waste in costly idleness a wealth of hours and money that should be consecrated to ministrations of mercy and love. The doleful threnody has a very pious seeming; but if you will hearken closely, as a tuner might for a false note in the organ, you will detect in it, I think, a croak of cant, with just a slight rasping undertone of envy.

Do not be over saddened by such lamentations. Even Christians have bodies to care for as well as souls. Whatever may be hereafter, we are not yet disembodied spirits. The physical is the basis of the spiritual—is besides the store of force from which the spirit draws its power to work. The intenser, then, the activities of the soul, the more imperative the need to replenish the store which feeds its energies. Every choice for the right where interest and duty clash, every battle with temptation, every forth-putting of active charity and sympathy with the suffering and sinning costs expenditure of physical vitality. Virtue goes out of us into it. The best Christian is he who most gives forth his life into the life of all. He then is the greatest Christian who, thus giving, has most life to give. But continual giving forth exhausts. The source of power must be recuperated, re-supplied, else the religion of the man dwindles into a vacuous, flaccid, effete goodishness. It lacks body. "Zion" then is not "languishing" just now more than these midsummer heats entitle her to languish. God has some care of his church yet, and knows what is best for her. Her force is just now wisely quiescent, precisely as at this time for weeks, you have observed, all vegetable growths that come from perrennial roots are at a standstill, making no more growth. The ivy, the syringa, the maple—looking at them *now* you might suppose that their attainment for the year was ended. Wait till this time of suspended animation, this restful repose of theirs is over, and with the coming of the first September rains you shall see fresh green start out, reach forth and upward to summon and force

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out to the utmost verge of every little twig the strength that shall make and fasten there the bud that will hold to its place the winter through.

Good friends, I have presented crudely what seems to me a reasonable justification of your being here in this cool and calm retreat, basing that defence on the high ground of the augmented power for all noble and holy living and doing that is to issue from the tonic rest it gives. Will you make good my prophecy for you in the months, in the years to come? Will you go down by-and-bye from the mountain freedom into the harness of business and domestic life and care and of society to put the strength which this bracing air has lent you into Christ's best and bravest work? Will you help Christ's poor with it? Will you invigorate the feeble resolution of the tempted? Will you breathe hope, like a fresh breeze from the hills, into the stifling air that thickens and clogs round the suffering and the sorrowing? Will you make sure that out of rest comes more activity for the right, out of repose stir for all that is good, out of enjoyment now more capacity for usefulness and devotion to God's service in the welfare of his trouble-tossed, sin worn children?

So doing, you may well "rest and be thankful" and looking back upon these hours of leisure when they are gone, may conscientiously and without reserve thank God that he has given you another happy and restful vacation.

Phthisis Pulmonalis, or Pulmonary Consumption.

BY W. G. BARKER, M. B., LONDON. (*Third Paper.*)

THE TREATMENT.

THIS may be divided into the hygienic and medicinal.

1. *The Hygienic.*—A careful consideration of the causes of consumption will give to this part of the treatment a large degree of prominence, for it is by the avoidance of these and the substitution of conditions of an opposite character, that we shall best secure immunity from it; and even when the seeds of the malady have been, as it were, sown in the system, if this be not too far advanced, attention to those rules by which the body is maintained in a healthy condition will be found to offer the best and often a certain remedy. By pursuing, therefore, in detail each separate cause, as previously given, we shall readily be able to comprehend the most appropriate treatment.

1. *Hereditary Predisposition.*—But little further than has been already advanced need be said on this question; I will merely repeat that it is our duty to adopt every means calculated to lessen this, the greatest of all the sources of pulmonary phthisis.

2. *Dyspepsia.*—The hygienic treatment of this subject as a cause of phthisis is so intimately associated with the dietetic and medicinal that it is thought best to leave its consideration till we come to those parts of the treatment of this disease.

3. *A Free Supply of Pure Atmospheric Air.*—There is no subject in connection with the treatment of phthisis of greater importance than this; every means, therefore, should be adopted to obtain it in a state of the most absolute purity, especially in our dormitories. For some years it has been a stereotyped observation with me, that we bestow a great deal of attention on the ventilation of our bed-rooms after we have left them, and very little whilst we are in them. Let any person by way of experiment pass out of his sleeping apartment for a few minutes in the morning, the doors and windows of which have been closed throughout the night, and then re-enter it, and he will have abundant evidence, from the odor, of the impure condition of the atmosphere he has for some hours been inhaling. The remedy for this is both safe and easy of application, viz., to leave the window open at the top for an inch and a half or two inches both day and night; or a part of the window may be made of perforated glass or zinc, or one or two or more air-bricks can be placed in the outer wall. This will keep the room sufficiently aired during the night, and all that is necessary in the daytime in addition is to throw the door open, and the purification of the atmosphere will be complete.

I have been accustomed now for two or three

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years to adopt the first method, and with most evident comfort. I first experienced the advantage of it whilst suffering from considerable mischief to the upper lobe of my left lung; whether of a phthisical nature or not is a matter of doubt. It is sufficient to say that I am now quite well, but at that period I had night sweats, a rapid pulse, quickened respiration, a severe cough, and expectorated blood; and at about two o'clock in the morning my bedroom, although large and lofty, felt so suffocative that I was compelled to get up and open the door, and sometimes the window, before I could be relieved; but by keeping the window open in the way described the necessity at once ceased, and I had a long, tranquil and refreshing sleep, and with it a cessation of the night-sweats and other unfavorable symptoms.

In making these observations, however, it should be recollected that I am speaking of the *hygienic* treatment of pulmonary phthisis, or the art of preventing this disease; and of all the means for preventing it, or, in its early stages, of restoring a patient to health, I consider the free supply of pure atmospheric air, especially during sleep—in which, upon an average, we pass one-third of our lives—is one of the most effectual; but when the disease has reached the second or third stages there may be a variety of circumstances and seasons in which the exposure may be unadvisable or even injurious. I doubt very much the desirability of a communication with the chimney, either at the fireplace or by a ventilator, for the air in it—which without a fire as frequently passes down as up—is sure to be commingled with dust, and is often of a very impure nature. Nor do I think an interchange with the hall and staircase at night, when the outer doors are closed, either safe or sufficient unless the water-closets have an arrangement of their own for ventilation, and are separated from the interior of the house by at least two doors. Under other circumstances the poisonous gases, which, notwithstanding all our care, force their way into the closets, will be sure to reach the other parts of the establishment.

On the apartments occupied during the day less attention need be bestowed, for the frequent ingress and egress of persons, and the doors being unclosed a large portion of the day in summer; and the open fireplace in winter, towards which, when in use, a current of air is constantly passing, are usually sufficient to ventilate them effectually, except in the evening, when with closed doors, and especially if gas be used, the atmosphere of a room frequently becomes impure and oppresssive; the door, therefore, should be occasionally thrown open to give a fresh supply, as well as reduce the temperature.

4. *The Avoidance of Unhealthy Occupations or Amusements.*—That a large degree of the mortality from pulmonary phthisis arises from these causes the records of our consumptive hospitals and mortality tables abundantly show. By the careful avoidance of them, therefore, or, if that be impossible, of the pernicious influences with which they are associated, we may hope to accomplish a vast saving in human life; for it has been found that the baneful effects of these occupations are the result, not so much of the industrial pursuits themselves as of the preventable conditions with which they are connected. The reports before referred to upon this subject by the General Board of Health in 1858 and 1860, and another in October, 1864, by a commission appointed to inquire into the sanitary state and influence of mines, all tend to prove that it is mainly from deficient ventilation that the mortality arises; and this is in strict accordance with the most recent philosophical investigations on the process of respiration, by which it has been shown that where the atmosphere is contaminated with a very moderate amount of carbonic acid it seriously impedes the exhalation of more; and in that way contributes not only to the deterioration of the arterial blood by its retention of the carbonic acid, but also by the insufficient absorption of oxygen impedes the due elaboration of the blood-plasma so essential to the healthy performance of the varied vital processes both nutritive and secretive, that are constantly going on in the system.

Hence it is of the highest importance to those engaged in these pursuits, as well as the duty of their employers, to attend to this; and it is quite certain that a large reduction of mortality will follow. On the other hand, it is most desirable that those who are blest with an abundance of this world's goods should give to this question their earnest attention, and avoid those recreations and amusements such as balls, theatrical and musical entertainments, which, from overcrowding, are not only associated with bad ventilation, but likewise rapid alternations of temperature, late hours, etc., all of which are so injurious to the consumptive.

5. *Personal Cleanliness.*—To the observations that have already been made but little need be

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lded, further than to state that attention to .is may be considered as one of the means by hich the body is maintained in a healthy con- ition, and for the purpose of warding off the isease. Sea-bathing is a grand prophylactic, or sea water contains a variety of ingredients iat exert a most beneficial influence over the inctions of the skin, stimulating their glandu- e and promoting the excretion of effete ma- erials, and thus tend to the purification of the lood and, by its bracing effects, to the general ivigoration of the system; when, however, his cannot be used, as in confirmed phthisis, specially in its more advanced periods, sponging he body with cold or tepid sea water, or the se of the tepid bath, according to the stage of he disease and the condition of the patient, is nost desirable.

6. *Bodily Exercise in the Open Air.*—It is well nown that nothing is so conducive to the naintenance of the system in health as muscu- ar exertion in the open air. It is not sufficient hat this should be performed in the house, for un-light, change of scene, and the higher de- gree of purity of the external atmosphere seem essential to the invigoration of the system; nor need this to be limited to any particular stage of the disease, for so long as the strength per- mits and there be no cause to prevent it, exer- cise may be freely taken, and the more the patient is capable of the more likely he is to be benefited. In winter, however, it is desira- ble that this should be done in the middle of the day, as between 10½ A. M. and three P. M., and in summer the mid-day sun should be avoided; the best time being from ten to eleven A. M. and from three till six, or even seven P. M.; whilst in the spring and autumn those hours may be selected that are most agreeable to the patient, but no absolute rules can be laid down on this subject; it should rather be left to the guidance of the physician and the feel- ings or convenience of the invalid.

7. *The Diet.*—Where there is a tendency to phthisis it is of the highest importance that an appropriate diet should be selected, and that this should be taken at suitable intervals; it is from inattention to these points that the dis- tressing disorder, dyspepsia, which almost in- variably accompanies the disease, is so general. I cannot subscribe to the doctrine of "little and often" for food to be taken—in the ad- vanced stages of this disease, when the powers of the stomach, in common with the rest of the system, are nearly lost, and liquids are there- fore required to nourish the body, there is no doubt, from these being taken up through the walls of the stomach by direct absorption, that they should be given at short intervals; but when the digestion of solid food is to be ac- complished and the efforts of the stomach are to be fully called forth (and it is only by such that the healthy nutrition of the body is main- tained), these I am satisfied are best fulfilled by a varied and copious meal taken at consid- erable intervals.

Celsus, nearly 1700 years ago, in his instruc- tions for healthy persons, wrote: "Take food twice a day rather than once, and always as much as you can digest." He said nothing about three times; and although I do not concur en- tirely with this doctrine, or advise it for the delicate and those predisposed to consumption, still it conveys a principle which ought never to be lost sight of in the preservation of health, which should be our chief consideration in the treatment of this disease, viz., that the stomach as a viscus requires prolonged intervals of re- pose, and when this is given that copious, va- ried and nutritive food may be taken with the utmost benefit; indeed I believe it is the only way that the complete nutrition of the system, and therefore an arrest of phthisis can be ef- fected.

But to give these observations a practical bearing, I will observe that whilst I consider that men in perfect health (women seem to need it three times) are best sustained in it by two good meals a day; say a breakfast at 8.30 or nine A. M., and dinner at 4.30 or five P. M., some tea being taken as a diluent about two hours after the last meal is completed; still, as there are many persons with whose duties so early a dinner would interfere, and by whom it would be unwise to prolong the interval be- tween breakfast and dinner, for these I would advise a light breakfast at 8.30 or nine, luncheon at 1.30 or two, a dinner at six or seven, and after an interval of two hours a cup or two of black tea, not too strong, and without food, should be taken, so as to wash out, as it were, the stomach thoroughly, and give to it and the whole system absolute repose during the night; in this way dreaming and wakefulness are avoided, and both are fitted vigorously to per- form their duties in the morning; the one di- gesting with ease and advantage a substantial meal, the other with pleasure performing its mental and bodily labors.

To others the following is best adapted: a breakfast at nine A. M., a dinner at one or two, tea without food at five, and a light supper at

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seven or eight; but where phthisis has actually set in and the disease advanced beyond the first stage, it may be necessary that broth, beef-tea, or milk, if it agrees, should be taken in addition. But at this period no particular rule can be laid down that shall be adapted to every individual or every case; each one must receive special attention; still it may be stated that the diet in every stage, should be of a character that is highly nutritious and easily digested; animal food or fish should be taken once and, in moderation, twice a day, and a large proportion of fatty and saccharine matter ought to be blended with the repasts, and those beverages used that are found to agree best with the stomach and leave it, after the digestion of a meal, free from acidity, flatulence, heartburn or other symptoms of dyspepsia.

8. *Mental Influences.*—Where there is a predisposition to this disease, hereditary or acquired, it is of the highest importance that undue mental labor should be avoided, such as excessive study, the cares and anxieties of business, etc., and depressing emotions should likewise be shunned; these are best fulfilled in conjunction with the hygienic rules enumerated elsewhere, as change of scene and air, cheerful society, and outdoor pursuits, of a nature and degree to invigorate the system without bringing on exhaustion.

9. *Sufficient and Appropriate Clothing.*—When in this disease the low condition of the vital powers, and with it the deficiency of animal heat, are remembered, it must be obvious that sufficient and appropriate clothing is most essential; and from its non-conducting power there is none in this climate equal to woolen. Flannel should be worn next the skin both in winter and summer, to equalize the temperature and allow the free exit of perspiration from the surface of the body; the same flannel, however, should not be worn during the day as at night, and it is very questionable whether it should be used at all when in bed. I very much prefer a cotton dress only, because it is quite easy to keep up the temperature of the body with the bed-clothes, and the good effect of the flannel during the day is, I believe, very much increased provided it be not worn at night. It need scarcely be said that no form of dress, either for men or women, should be so tight as to impede the free movements of the lungs or limbs, and that anything approaching to what is commonly called "tight lacing" should be scrupulously avoided.

What John Larcombe Did with his Peaches?

BY MARY ATHERSTONE BIRD.

"SUCH a crop of peaches I never saw," said John Larcombe as he returned from a ride over his farm. "The trees are fairly bending down under the load of such fruit as these." He took a dozen fine peaches out of his pockets, laid them on the table before his wife, and dropping into a chair tilted it backwards and assumed the attitude so much beloved by his countrymen, with his feet resting against the wall at some height above his head.

Mrs. Larcombe, still young and pretty, admired the luscious fruit and began to share it among her five little ones.

"We ought to be able to make something of them," said John, thoughtfully.

"Well, dear, can't we sell them?" asked his wife.

"Everybody has just as many," he replied; "and the price we could get would be so low it would not more than pay the cost of shipping them. I could make a thousand dollars by them without much trouble or cost, but I suppose you would not like it."

"What do you mean, John?" asked his wife, anxiously. "What is it I should not like that would do so much good to you?"

"Oh! your prejudices are so strong, that's all," he answered carelessly. "And yet, Kate," he added, under his breath, so that the children should not hear him, "when I look at you and those helpless little ones and think that what with the failure of last year's crop and the loss of so many horses and cattle during the winter, I am just on the eve of bankruptcy, and that in a few months I may not have a roof to shelter you, I feel as if I could commit murder or robbery for your sake."

"Oh, John dear, don't talk like that!" exclaimed Kate, starting up and passing her arm fondly round his neck. "But are matters really

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› bad as you say; are you in danger of being ankrupt?"

"I am a bankrupt, in fact, my poor girl, ough not declared so," he replied; "and I can e only one way to avoid a complete smash-p."

"Do tell me what it is, John?" she whispered imidly.

"Those two old stills that my father used re away there in the barn. They are as good s ever, and if I set them up and run them I an make peach brandy enough to set me on ny feet again."

Her arm dropped by her side and she turned way, pale and sick at heart: "Oh, God forbid hat!" she murmured. "Oh, no, no, no! anything but that!"

"And why not?" he said, turning sharply pon her. "It is the only way to get out of the difficulties that are well-nigh crushing all the life out of me, and here are your stupid prejudices put in the way, just as I knew they would be. I was a fool to tell you a word about it till after it was."

"Why not?" she repeated, sorrowfully. "How can you ask that, John? Those dreadful stills ought to have the stain of your father's blood upon them, as well as your mother's tears. And if you run them there will be no blessing upon the money you'll make by them; but your life or reason will be sacrificed, my heart will be broken, and our children be left orphans and beggars."

"Tut, tut!" he answered, almost angrily; "you women always take the darkest view of everything. I shall make it for sale only, and if it will be any comfort to you I'll promise not even to taste it."

"And what of all the men who will become drunkards through your means, all the poor women whose domestic peace will be destroyed, all the wretched children who will suffer unknown evils because their fathers have been led into temptation by your act? Oh, John! if you wantonly dig a pit at your neighbor's gate and he falls into it and is killed, are you not guilty of his death?"

"Don't talk any more nonsense about it, Kate. I have quite enough to trouble me without having to stand your scolding; and just bear in mind that if people are determined to drink they will get drink, whether I make brandy or not. The small quantity I shall make will not be felt among the thousands of gallons that are turned out every year all over the States. Brandy is not bad of itself, and if people choose to misuse it, that is their look-out, not mine."

He took his hat and went out. On his return Kate wisely refrained from reopening the subject of discussion, hoping that calm reflection might bring about a change in his opinions. But alas! when she stole out into the barn later in the day to see whether anything had been done towards preparing the stills for their use, she found the horrid things had been drawn from the corner where they had lain unheeded for many a year, and had already undergone a considerable amount of cleansing and polishing.

John had driven in his buggy to a town about eight miles distant, and when he returned in the evening he was accompanied by a disagreeable looking man, with a bloated face, watery eyes, red nose and an unpleasant, husky voice.

Poor Kate's heart sank within her as she noticed all these particulars. She had been brought up and adopted in her orphaned childhood by John's mother, and it was not without good reason that she was so strongly opposed to her husband's project of bringing those stills into use. She remembered when they were bought, and she remembered also that from that time the once happy and peaceful home had become a hell upon earth. John was away at school with his mother's brother in Maine, and did not return till after his father's death, when he found his mother slowly but surely dying, worn out by years of suffering, and his youngest brother, whom he had left a healthy new-born baby, now a helpless cripple and stone blind in consequence of a terrible accident from fire. He learned no further particulars concerning him. The poor little fretful creature was the special object of Kate's tender, patient care; and when he died John felt only thankful that he was released from a life of misery, and that Kate was free from a burden that had become almost too great for her strength. His former playmate had become very dear to him since his return from school and college; but she was too much absorbed in her self-imposed duties towards her adopted mother and the crippled child to make any return to his passion. But when Mrs. Larcombe on her death-bed entreated her to marry her son and so relieve her mind from anxiety respecting her future lot, Kate dutifully obeyed—married John Larcombe out of gratitude to his mother, and fell in love with him afterwards.

During the eight years that followed it would have been difficult to find a happier couple than they were. Their family increased rapidly, it is true, but so did the means of filling the little mouths that God sent them. And

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when at length an unfavorable season left them with short crops, and a murrain carried off many of his most valuable cattle, Kate resolutely aided her husband by retrenching her household expenses and working harder than he liked to see. It was to save her from this hard toil, and to keep a roof over his children's heads, that he had first entertained the idea of fixing up the stills, and turning to account the abundant peach crop which was the only production of his farm that promised to help him out of his difficulties, for the cereals were again almost a failure. He knew he was not doing right. He knew that his wife would oppose it on principle; but he was doing it for her sake and her opposition made him angry.

When that evil looking man followed him into the house she at once recognized in him all the signs of a confirmed dram drinker. She felt sure he was in some way connected with the running of the stills, and she foreboded the worst consequences from his presence.

John introduced him briefly as Mr. Johnson, come to assist him in settling some business; and shortly afterwards the two men, carrying a lantern, went out together, and she heard them moving heavy things about in the barn. They remained out there the greater part of the evening. When they came in Kate asked no questions, and her husband offered no explanations concerning their occupation. The stranger spoke little, but showed such strong symptoms of sleepiness that John showed him to his room, and soon afterwards retired to bed himself, saying he was tired out.

When Kate, having finished the needle-work she was engaged on, went up to her chamber she found him apparently sound asleep. But John Larcombe was never wider awake in his life. His conscience would not let him rest; yet he dreaded the lecture which he feared his wife was only too ready to inflict on him, and which he knew he should resent, perhaps rudely and roughly. He actually felt already angry and resentful towards her, because he thought she wished to rebuke him and felt he deserved it. But wise Kate knew he was in no mood to be reasoned with at present with any hope of a successful result, and had she known him to be awake she would not have uttered a word concerning the stills, or the objectionable person he had brought to the house.

So she knelt and prayed long and earnestly that her beloved husband might be saved from the commission of what she believed to be a serious crime. She prayed for light to guide her own course, so that she might not drive him to extremities by any over-zealous remonstrances; and finally she prayed that some other means might be opened before them of tiding over the difficulties that threatened them and saving her innocent children from being left without a home.

She remained so long upon her knees that John suspected what she was doing, and felt so exasperated that he was more than once on the point of starting up and working all night upon the stills. But shame kept him quiet. He did not like to own by such an action that he had been shamming. And when his patient little wife crept gently into bed and he felt her pressing her lips to his broad shoulder, and tenderly draw the blanket over it before she nestled down to her own rest, a strong sense of choking constricted his throat, and he tried in vain to swallow the great lump that rose in it. Kate was tired by a hard day's work, and her mind was easier now she had "committed her way unto the Lord," and in a few minutes she was fast asleep.

We are very apt, however, to resume in dreams any subject that has occupied our thoughts during the day, and this was so much the case with Kate on the present occasion that it aroused a habit which she had long outgrown, but which had given her friends considerable anxiety during her childhood, when her sleep-walking pranks had often led her into situations of great apparent danger. John was just falling asleep when he was startled by hearing his wife bustling about the room and talking in a frightened whisper.

"Hide the children! hide the children!" she exclaimed. "No, no; not in the garret! He'd set fire to the house and burn them! Yes, I tell you, take them away to Mrs. Brown's, ask her to take care of them till morning. Make haste! John is coming. He'll kill them if he finds them here. Yes, he will, he will! Oh! don't you know what his father did?" she asked with a piteous wail in her voice that went to her husband's heart. Her words aroused a horrible suspicion. He raised his head cautiously, so as not to lose a word of her incoherent utterances, and listened with trembling eagerness. But Kate remained silent.

"What did his father do?" he whispered, very softly, for he had heard that sleepers will often hear and reply to questions asked in that tone.

"I dare not tell you," she answered, seating herself on the bed by his side. Her large, dark eyes were wide open, fixed, and wholly devoid of expression. Her long hair fell loose

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out her shoulders, and her pale face looked
eird and ghastly in the moonlight.

"Mother made me promise never to tell any
ne; but oh! I wish I might tell John! If he
new it he would not do this wicked thing! Oh,
other! may I tell him?" she exclaimed, look-
g eagerly toward the window.

John looked in the same direction. Was
ere a film before his eyes, or was there a
adowy form standing there in the moonlight?
erhaps it was but a passing cloud that cast its
ade into the room, for as he gazed his vision
ecame clear; the thing was gone, and Kate
rned again to him.

"She has released me from my promise, and
ow I may tell you. But, oh! what a dreadful
ing it is to tell; yet I must, if nothing else will
ve him. It was one night after I was in
d and asleep. I had left mother sitting up
r father, with little Harry beside her in his
adle. I was awakened by the most terrific
rieks, mingled with father's voice swearing and
ursing, as he always did when he was drunk,
nd the baby crying as I had never heard him
y before. He was fairly yelling. I ran down
airs, though mother had told me never to stir
r take any notice, whatever I might hear; but
o one could lie still and listen to such screams
s those. Oh! what a sight it was! There was
oor mother struggling like a mad woman, and
ather holding her fast and swearing and look-
ng more mad than she was; and well he might,
or he was mad, raving drunk. But I hardly
ooked at them, for there on the blazing fire
as the cradle and little Harry in it, screaming
nd writhing among the flames. I snatched
im out and wrapped him in something I caught
p somewhere, for I knew he must be screened
om the cold air, and away I ran to Mrs.
rown's. She took us in and sent for a doc-
or; and I staid by the baby night and day for
don't know how long, and I thought of noth-
ng but him. At last the pain left him, and
nen I slept; and they said I was very sick, too,
ut I know nothing about it, only when I
ame to myself rightly I found that father was
ead, of delirium tremens. Mother never got
ver it, though both she and Harry lived on for
ix years. And now if John takes to making
randy he'll do as his father did, and become
drunken maniac, besides all the evil he wil
ring upon other people. I would rather he
hould do as he said, and murder one man for
is money than bring scores to ruin and mis-
ry. There would be less mischief done.
Lead us not into temptation, but deliver us
rom evil.' I have prayed for my dear hus-
band, and now I leave him in the care of our
Heavenly Father."

Her head drooped upon breast and her sleep
became calm and natural.

John got out of bed and laid her tenderly in
the warm place he had left. Then he dressed
himself hastily and went down stairs. A short
time afterwards Kate was awakened by the
sound of a sledge-hammer beating upon hol-
low metal, which evidently proceeded from the
barn. The clock struck one as she awoke. Her
natural conclusion was that her husband and his
assistant had not waited till daylight to begin
putting the stills in order, yet she could not
help going down to see what they were at.
The barn door stood partly open and a lantern
was hanging on a beam. By its light she saw
her husband battering the great copper vessels
into a shapeless mass.

It cost her a very hard struggle to keep from
running in and embracing him; but she
thought it best to leave him to tell what he had
done, and so she hurried back to bed and lay
crying for joy, and offering up fervent thanks
to Him who had heard her prayers and turned
her husband's heart from the sin he had con-
templated.

But when John stole gently to her side,
breathing hard with the violent exercise, hot
and dusty from the turmoil he had created, she
could control herself no longer, but clasping
him round the neck she told him she knew what
he had been doing.

It was then his turn to confess all that she
had betrayed in her sleep. "It was quite true,"
she said, that "mother," (as she always called
her adopted parent), had exacted from her a
promise never to tell any one—especially John
—of the barbarous action of which her hus-
band had been guilty; but as she had broken
her word unconsciously she felt quite safe from
all self-reproach on the subject.

The next morning John briefly told his vis-
itor that he had abandoned his idea of running
the still, paid him for his trouble and dismissed
him.

No special miracle rewarded John Larcombe
for the sacrifice he had made. On the con-
trary, his affairs for a long time looked gloomier
than ever; but he kept up a brave heart, and
never felt even a momentary regret for what
he had done. Neither did he harbor a thought
or seek to carry out a project unknown to his
wife, for he knew she was more likely to see
and adhere to what was right than he was.

Acting on her advice he sold the stills as old
copper and bought a fruit-drier, by means of

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which they turned their peaches to a better account, morally though not pecuniarily, than if he had converted them into liquid poison. By slow degrees and hard toil he overcame his troubles, and secured to his loved ones all the comforts for which he had been tempted to make so fearful a sacrifice.

The Defense of the Women.

BY HELEN BARRON BOSTWICK.

Say the scoffers to the women: "Things have reached a fearful pass;
Quiet men caught in a riot by the women raised *en masse!*
Mingling with the brawling rabble, surging through the city streets;
Lo, the queen deserts her kingdom! Lo, the rose forgets its sweets!
Haply at their lonely firesides sit the husbands sad and sore,
Children crying for their mothers singing at the grocery store!"

Say the women to the scoffers: "Nay, what is it that you hear?
All the air is full of praying, we but voice it to your ear.
Prayer is best where need is greatest—from its hot and muddy pool
Takes the lily any soiling on its petals sweet and cool?
Better is a queen's robe drabbled than a queen's robe gathered up,
Scornful of a shivering sister robbed to fill a poison cup.
Sadder than the children crying for a mother singing psalms,
Are the hapless children shrinking from a reeling father's arms."

Say the doubters to the women: "Fiercest fire will shortest burn;
Loyal feeling overheated, ends in coldest unconcern.
Slowly creeps the swelling acorn upward through the yielding sod;
Slowly forms the starry diamond, slowly grind the mills of God."

Say the women to the doubters: "These are words of strength and power,
Yet they need a new baptism for the pressure of the hour;
There are crises in all histories, where the wisest word to say,
Is 'Stand by, ye men of maxims; let God's whirlwind clear the way!'
If the mills of God grind slowly, they are grinding while we sleep;
Every age the grist is finer, every age *its own* must keep."

Say the rulers to the women: "You may sing, exort and pray,
Take your tea or knit your worsted, in a mild and legal way,
On the sidewalks of the city, so you make no lengthened pause;
But to congregate in numbers is to violate the laws."

Say the women to the rulers: "Are your skirts, then, very clear?
Have you all the city statutes executed without fear?
We with scrupulous precision will your ordinance obey,
Stand not on the public crossings nor obstruct the common way.
Round and round, in solemn circles, praying, singing, we can go;
Or in orderly procession, stately marching to and fro.
Then, O Rulers! very courteous, one request we make of you:
If you deem our work unlawful *give us lawful work to do.*"

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Ozone—Its Effects and Value.

BY REV. CHARLES H. BRIGHAM.

THE proportions of the chemical elements in air are nearly constant. A slight difference in the amount of carbon and watery vapor may be detected in the air of different seasons of the year, hours of the day, or localities. Yet, in the main, air to the scientific analyzer is the same thing whether it is examined at one time or another, or from one place or from another place, from the height or from the plain, from the street or from the chamber. Pure air contains always the same proportion of oxygen and nitrogen held in the same chemical union. Yet everybody knows that there is a difference in airs even when they are chemically clean and pure; that the mountain air is not the air of the valley, that the sea air is not the air of the prairie, that city air is not the air of the country even when city streets are wide and there is no breath of plague in them, that house air is not out-door air. Every one feels the change of air in going to the country from the town, though a bottle of town air and a bottle of country air may yield precisely the same results in the crucibles of the laboratory. Every one knows that even the most careful ventilation cannot make the air of a chamber as exhilarating as the air on the breezy hill which overlooks the house. This fact was long the chemists' puzzle and vexation. How to account for this strange difference, how to catch this invisible and imponderable spirit of the air, which so obstinately refused to tell its name or to take its place. Some called it a difference of electrical condition; but that explanation was not sufficient, and was sometimes incorrect. Evidently there was something more, which the senses could apprehend, even if there were no scales delicate enough to measure it.

We owe the discovery of this secret of the atmosphere to that watchful and ready sentinel, whose service is not less faithful and worthy that it is so often ridiculed. The *nose* is the real demonstrator of this subtle spirit. According to the old plantation song the Lord was able to recognize his beloved race "by the smell," and so the smell revealed the mystery of this influence in the air. "Ozone," the name for this influence, given by the famous inventor of "gun-cotton," means the odorous substance which is smelled; by no means, however, indicating that it is sweet-smelling or is a perfume to be desired. The odor is of bad rather than of good repute. It is the smell of thunder and lightning; a real smell, grotesque as the impression of such a union seems. For the artillery of the heavens has its smell as much as the artillery of the battlefield below. There is not only the flash and the report, but there is also a sensible tone in the air which the nostrils appreciate. "*Ozo*," to emit odor, is the Greek verb which is used to describe this attribute of the vital breath, the oxygen of life.

We have no space here to tell the story of the discovery of ozone, or even to catalogue the names of the eminent chemists who have in the last thirty years followed Schöenbein in their experiments upon this fascinating rival and companion of the electric fluid. Is not all this told in the handsome octavo published in the last year by Dr. Cornelius B. Fox, who has gathered in a concise and systematic survey all that has been found out concerning ozone, its properties, its sources, it effects, its relations to gases and to tissues and to sensations? One who writes about ozone may find more than he can use in this storehouse of facts. Yet the subject is not here exhausted; for neither Fox nor any one else has yet been able to see or say what ozone *is*, to tell its essence, any more than the wisest psychology has revealed the substance, the essence of the soul. Only some attributes are disclosed; enough to stimulate curiosity but not to satisfy desire. The one question that Dr. Fox does not answer is the fundamental question: "What is ozone?" He can only meet this by stating rival theories, and telling how ozone is procured and how it shows itself. Some sceptical minds will conclude, in this lack of ability to tell what ozone is, that it is really a chemist's fancy, and must be classed with the "humbugs" of science.

But anything has reality which you can make and can detect. And no fact is better demonstrated than the possibility of producing ozone, and of estimating its quantity. Ozone is related to oxygen either as sister or daughter. It is oxygen in some new combination and with some new property. It is oxygen plus something else, oxygen more active than its common state; some might say oxygen more highly electrified. For a close relation between ozone

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and electricity has been established, as close almost as that with oxygen. Electricity produces it, electricity multiplies it. The lightning makes it, the galvanic current makes it; it is generated and stored by the same force which gets oxygen out of the water and decomposes fluids and gases. Ozone is a child of the lightning.

That ozone is not oxygen, however, is proved by the contrast in some of their properties. Oxygen has no taste, ozone tastes, as one writer expresses it, like lobster, and might make the fortune of some enterprising caterer who should provide it cheaply as an adjunct of salad. Oxygen has no smell; ozone smells like—well, we will leave that to the imagination of the reader—not like heliotrope or rose. Oxygen has no action on gases, ammonia, phosphoretted hydrogen, or muriatic acid, in its free state in the atmosphere; ozone acts strongly upon all these. Ozone colors litmus paper, ruins India-rubber, tarnishes silver, bleaches; which are not powers of simple oxygen as it is found in the atmosphere. Dr. Andrews, who has made a study of it, says that it is more than three times as heavy as oxygen, a difficult fact to prove. It colors metals with great force and rapidity, changes black to white in a compound of lead, yellow to red in a compound of potassium. It polarizes gold and platinum. Indeed new experiments are continually revealing more properties of this energetic influence, and the scientific societies have in each meeting more wonderful things to say of it.

In a journal like our own, what is most important to know of ozone is its connection with the sanitary condition of societies and places, its effect upon health and disease. How far is it a remedial agent? How far is it a purifying agent? Is it desirable to have more of it, or to have less of it? Can we get it by artificial means? Can we put it into the atmosphere, by our contrivances, or bring it out of elements ready to our hand? These are practical questions, not so well settled as the chemical questions of its properties and manifestations. For it is by no means yet decided that a highly ozonized atmosphere is, on the whole, more favorable to health and life. California, where the air has so much of the stimulant, is not by any means a land where physical existence is all luxury and there are no aches in the limbs or ills to the flesh. There are troubles of the throat even on the shores of the sea and in the ozonic aroma of the salt air. If deficiency in ozone seems to indicate some diseases, redundance of the influence seems to give rise to other diseases. There is goitre in the bracing air of Switzerland, and small-pox is said to be more fatal where it is fed by this quickener.

Unfortunately doctors differ widely as to the physiological effects of ozone upon the human body. That it acts upon the blood in some way is probable, but what special disease it causes, or what special disease it heals is not yet ascertained. Some say that in an air which lacks ozone rheumatisms may be expected, and it is asserted with great confidence that the cholera is likely to come where ozone is wanting. There is a reason for that assertion which we shall presently mention, but it has not been fully proved by observations. Others say, on the contrary, that the irritation of this pungent gas will show itself in skin disorders, will send out blotches, eruptions, and fire on the cheek and forehead; that ozone poisons the blood while it stimulates, and is to be classed with gin and whisky. Not enough is yet known of its medicinal effects to bring it fairly into the pharmacopœia; and happily it cannot be kept on hand by the druggist, cannot be rolled into pills, or bottled for future use. Sunshine may be stored away in coal beds, but ozone is slippery and disappears mysteriously, like the ice of carbonic acid. Only general assertion can be made concerning ozone in pathology, that on the whole, other things being equal, a lack of this influence in the air weakens the constitution, takes force out of nerve and muscle, and so predisposes the system to take on disease, and makes contagion more dangerous. Dr. Wildmann, of Halle, indeed, in his work on oxygen and ozone and their effects as remedies, seems to find that the inhalation of ozone has some peculiar remedial virtue; but as yet no disease has this standard antidote fixed to it.

More certain is the effect of ozone as purifier in the air. No fluid acts more positively in decomposing and dispersing offensive substances. If its own smell is positive, it speedily drowns other more disgusting odors, and substitutes what is comparatively sweet and clean. It puts ammonia and sulphuretted hydrogen, the odor of the stable and the pit, out of the way more effectually than the chlorides. No disinfecting substance works so swiftly and so thoroughly as this attenuated shade of a substance. Dr. Fox quotes Schöenbein as saying that "air containing *one three million two hundred and forty thousandth* of ozone is capable of disinfecting its own volume of air filled with the effluvia evolved in one minute from four ounces of highly putrid flesh!" Surely no

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marvel of homeopathic theory or practice can match this statement. It goes beyond the fiftieth or the one hundredth dilution.

And ozone not only gets out of the air the poison of putrid flesh and noxious gases, the effluvia of sinks and drains and fetid pools, and decaying organisms, but it is said also to get out of the air the floating animalcules, the invisible creatures which are taken into the breath of animals and men and become germs of disease. Now that it is admitted that epidemic disease, which was once called contagious, is so often propagated in this diffusion of bacteria and microscopic specks of animal life, anything which can cleanse the air of these plagues will become a health-giving agent. In fact, Dr. Fox asserts that this is really the great disinfecting agent in the universe, doing the principal work in neutralizing the pernicious effects of the decomposition of animal life, and the multiplication of poisons in the air which otherwise would make the earth unfit to live upon. It is this business of disinfecting, moreover, that keeps down the quantity of ozone and saves it from becoming in its turn a peril to life and health. While it abolishes putridity and spores of disease it loses its own being, and undergoes transformation. If ozone had not corruption to prey upon it would prey upon life, and bring the evil it would cure. In this sense, therefore, it is homeopathic as well as in the effect of its infinitessimal molecules. Experiments have been tried to show how quickly it kills. Dr. Ireland, Dr. Schwartzenbach and Dr. Hoppe are quoted by Dr. Fox as saying that ozone after a little time is fatal to some of the rodents. A rabbit will die in two hours in breathing air that has only a two-thousandth of its weight in ozone; a mouse dies at once with one-third of this small infection of ozone. Rats are quickly exterminated by it. It would be a happy thought to invent a rat and mouse trap which should invite by an ozonized bait, and obviate the need in the house of the "harmless, necessary cat." Will not some Yankee set himself to work to utilize these experiments of the German physiologists on rats and vermin? If ozone is not medicine, it may become a cheap and convenient destroyer.

Purification of the air, then, is the present sanitary work of ozone. It is settled that, on the whole, though a little of it may kill rats and rabbits, and an over dose of it may kill men and women, in reasonable proportion it makes the air more elastic, more quickening, fitter to breathe. There is more life in an ozonized atmosphere than in an atmosphere which lacks this invigorating influence. The difficulty is to get the ozone where it is most wanted, in they haunts and habitations of men. It is not always convenient for Mohammed to go to the mountain. Nature is always reproducing the lost supply, but the supply fails where we wish most to find it. It is most needed in flat places where there is stagnant water near, and are exhalations of malaria, though some writers deny that it has any effect in removing this malaria. It is needed in chambers where there are sleepers, and in work-rooms where the air is close and is poisoned by many breaths. It is needed in school-rooms and in churches. The prayer, "Come Holy Spirit," has more reason when it calls for more ozone, which has a better fragrance even than the precious ointment that ran down upon the priest's beard. Can we get more ozone in the cities, in the public buildings, in the houses of labor and in the houses of prayer?

Thunderstorms are generators of ozone, so it is supposed, though Relshuber thinks that the amount of ozone which is left after a tempest depends more upon the quantity of rain which has fallen than upon the abundance of the lightning. It is agreed that there is more of it in the air in the winter months than in the summer months, in the wet season than in the dry season, in cold weather than in hot weather, at morning and evening, and even in the night, than at noon. In this respect it goes with electricity, for it is a common mistake to suppose that electricity is more abundant in summer because thunderstorms come in summer. As a rule the air is far more electrical on a tingling frosty day than upon a sultry debilitating day. According to observations made in Germany, the average of ozone is nearly double on snowy days, and is considerably greater on rainy days than it is on clear days. Fog is unfavorable to its production, but a driving snowstorm greatly promotes it. This may, nevertheless, be the effect of wind in clearing the air. The authorities differ widely in their conclusions about the winds which are ozone producers, some assigning more to winds from the east, others rating more highly winds from the west. Cold winds bring more than hot winds; and those whose houses are exposed to cold winds have this compensation, that if they burn more coal they probably get a better quality of air. It is not altogether the blessing of a residence that it is sheltered from the winds; that it is like the hole of a fox or the burrow of a rabbit. The howling storm, with all its chill and torment, makes health within the

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house, if the experiments of ozonoscopists are to be trusted. And Dr. Fox is not the first to remark the refreshment which comes from admitting the snow-laden wind into a sleeping chamber in spite of prohibition of conservative doctors. This air is far better than the heavy, oppressive air of chambers hermetically sealed to the breath of the blast, and filtered from the hot air register or the steam radiator. Where snow sifts in through the crevices of the window the cheek will take a rosier tint. Indeed, the production of ozone by wind and tempest, by the rushing breeze and the dashing waves, is only an illustration of the law of agitation as a law of life. Yet we cannot have tempest all the time. We cannot always have winter, with its snowstorms or spring with its gales. How shall we get the healing force in the summer air? Will trees and flowers, will grass and plant life bring out the life of the air? The power of plants in the production of ozone has not yet been sufficiently tested, and the verdict of the doctors is not uniform. The report of Dr. Kosman to the French Academy is rather indefinite. He says that the leaves and green parts evolve ozone, but that none comes from the interior of the flower; that where plants grow thickly they increase the ozone in the air, in the night time as well as in the day; that country plants give out more ozone than city plants; and the report of Dr. Daubeny to the British Association confirms his conclusion. On the other hand Professor Mantegazza, in the "Rendiconte" of the Royal Lombard Institute, asserts that fragrant flowers produce ozone in large quantities; that balsams are healing for this reason, as well as for their salve, to wounds; that Herodian spoke truth when he said that the odor of laurel was a preventive of plague. He thinks that sweet-scented blossoms not only diguise infection, but that they hinder infection. Cloves and spices, mint and fennel are ozonic generators. The Jews were doing more than they knew when they brought tithes of mint and anise and cummin; and perhaps if the sanitary laws had been known in that age as they are in ours, the tithes in that kind would not have been so much underrated. It was good to bring ozone to the altar to counteract the decomposition of the blood sprinkled on the altar of sacrifice. Heliotropes and narcissus, hyacinth and mignonette send out ozone with their sweet perfume. The more fragrant the herb the more ample its gift of purification to the air. Flowers that have no fragrance give out no ozone. This happily contradicts a common prejudice and dispels a common fear that there is danger to health in the fragrance of flowers, that the sweetness of the aroma is deadly, and must be sparingly indulged in. On the contrary, Professor Mantegazza finds that the expressed essences of plants produce the same result, that Farina, Cologne and lavender water, and bergamot oil, and even the essence of nutmeg and of peppermint, are makers of ozone. The boudoir of a fashionable lady, therefore, well supplied with perfume bottles and bouquets is a factory of ozone, which may destroy the infection of the room and the house. One condition, unfortunately, is necessary. The process only goes on in the sunlight. Perfume stored in the closet or hidden on a dark shelf fails to do the work. There is no ozonic production from the balm of a thousand flowers if it is carefully corked and secreted. It must be scattered in the light.

If there is marsh around the house and poison from it in the air, plant as many sweet-scented flowers as can be made to grow. Fill the air with the fragrance which lavender and hyacinth pour out. Let that shining-leaved balm of Gilead tree spread its foliage and exhibit its buds, while there are flower beds around it. In the cities the little patch of soil in front or in rear of the five story brown-stone house may be so filled with aromatic blossoms, which come in successive months, that the air of the rooms above may be partially ozonized for one-third of the year at least. Such an arrangement as that — for instance, in First place, in Brooklyn, of a hundred square feet of garden plot in front of the house, well stocked with fragrant shrubs and flowers—may keep the air free from the pestilence that walks in darkness and the destruction that wastes at noonday. Even that coarse sprawling sunflower, beloved of the African race, has virtue in this kind, weak as its odor is. The Regents of the Smithsonian Institute took a useful lesson from the negro, when they planted sunflowers around their unwholesome building.

And in the rooms of the house, if the showy flowers woven into the carpet, and kept from the sunlight lest their brightness should fade, were replaced by real flowers exposed to the sunlight, and joining fragrance to beauty, the air would have more life in it. If it is inconvenient to keep and care for growing flowers, for those who can afford it there should always be a supply of sweet-scented cut flowers. Of all the new extravagances of our time the passion for flowers is the most pardonable. But this ought to have its wise adjustment, and not

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pend itself on unfrequented places, or on special occasions. It is much better to have the owers where we live in the six week days han where we pray for an hour or two on the eventh day. The ozonizing effect of a bouuet on the sacred altar is small compared with ts effect on the study table, or the dinner table. And it is absurd to pile upon the bier of a riend who has died the sweet blossoms which, udiciously distributed, might have saved him rom dying.

That the odor of cigar smoke produces ozone s not demonstrated. But Montegazza finds hat snuff generates ozone, and Dr. J. Murray lasses this titillating powder among disinfectants. Snuff has gone out of fashion in good society, and the dignitaries of our time and country do not carry the "pouncet box" like the heroes of the Revolution, or the holy men of the Roman Church. Will not the Sovereign Pontiff, now infallible in wisdom, issue a bull commanding all the faithful to take up the health giving practice, of which he is personally fond? The sound frames of the grandfathers and grandmothers perhaps were nourished by the ozone of their carved and plated boxes, opened and passed in friendship from hand to hand.

These means of producing ozone are the cheapest, most agreeable, and most convenient. But it may also be produced by chemical means, and in considerable quantities by electrical action, by passing electricity through glass tubes containing oxygen, with or without the spark; by dissolving acidulated water by electrical action. Another way is to place a stick of clean phosphorus in a vessel of air, with a little tepid water on its bottom. When the air is ozonized the phosphorus should be removed. The air may then be retained for us. Sulphuric acid poured upon permanganate of potassium in the proportion of three to two, is a convenient ozone generator, and will continue to give off ozone for a long time. This is good as a purifier of the air in public buildings, and might be well used for school-rooms. A hot glass rod in the vapor of ether, or the slow oxidation of ethers and volatile oils, is another ozone carrier, and this kind of process is commended for sprinkling beds and blankets, and sheets and bandages in the hospitals. And there are other chemical processes and changes in which the influence is produced.

As pleasant and effectual a method as any of producing ozone is in throwing water into the air in the form of spray. The dashing of waves on the rocks produces it, and it may come as well from the diffused particles of water in an artificial fountain. There is something more than romantic beauty in the flashing of fountains in Oriental courtyards and chambers. The delicate tinkling of drops in the water keeps the air pure for the sleeper while it lulls him to slumber. Why should not a little fountain, forcing the water through a sieve of metal to play in delicate tracery, be an ornament of the chamber as much as the mirror or the wardrobe? Why can not it be auxillary to the bath, scarcely adding to the cost, while it may forestall the need of the bath? Who that remembers those nights in Damascus will not wish to have in his dreams the fairies which fly in the spray and give him the sense of paradise? A larger fountain in front of the house, smaller fountains in the chambers, may keep a phylactery in the air, better than any that can be worn upon the arm or forehead, or fastened to the wall of the chamber.

In Florida.

BY ANNA CHAMBERS KETCHUM.

I WILL not say a word about that railway journey just ended, the jottings, the dust, the waiting at railway stations—no, not a word. But I will tell you that I am here, in this old Spanish town, with its quaint, dilapidated houses, its cedar-shaded plazza, its grass-grown streets, its melancholy, dismantled fort. Here, where the ships come in like phantoms now and then, and tarry awhile in one of the finest harbors in the world, to discharge a New York dress for some bird of passage flown southward for the winter, a barrel of flour, a case of condensed milk; and then to steam out and sail away to some city or port that is awake.

From my windows in this lovely muslin-hung chamber I see the tall masts of the English ships lying at anchor in the sound; loading with pine lumber from the busy mill, the

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only thing that seems alive and a part of the nineteenth century. The yellow flowers of the opopanax still cling to their thorny stems; and the ground is starred with waxen white houstonia flowers, just as their blue namesakes gem the meadows in higher latitudes in spring. The golden oranges hang thick on the trees in the garden of the old Spanish zapatero between the grounds of my hostess and the long wooden pier; and the tattered leaves of the banana flaunt over the pickets, whilst outside two men, apparent strangers to the country and to each other, are discussing the marketable merits of sweet and bitter oranges, and other questions of like interest. You will read from the pens of such voyagers as these, enough of the financial prospects of those countries lying along the Gulf of Mexico; these thin fingers of an invalid, what do they know? alas! what can they tell, of the means and the ends whereby men fill their coffers?

But I can tell you, perhaps, of the curious dwellers that people land, sea and air in these countries of the flower and palm; I can tell you of the thousand things which teach the ever precious lesson that there is something higher and more satisfying than gold. The fellow-creatures I meet in this Zingara life I am leading as I rove in quest of health, these shall be my theme; my fellow-creatures, namely, cloud and star, and sea and blossom, and tree and insect, and each and every lovely thing; from the rosy sands of the keys which under the microscope become twisted and fluted shells, to the radiant face and the royal soul of the Christian gentlewoman whose happy guest I am.

The one street, leading from the pier to the beach, a distance of two miles, is paved with shells, and is the *toledo* of this little city. All the other streets and lanes are as nature made them, so that smooth walks and drives are impracticable, since Amelia Island is a collection of shell-banks and sand held together by reed-grown marshes, the whole island a tangle of myrtle and whortleberry and palmetto, with its gnarled roots coiling like snakes under your feet, and all these inwoven and interlaced with the myriads of creepers that abound in tropical countries.

There is literally no soil here, except in marshy places. Did you ever wade through a freshly plowed field? Well, just imagine yourself in one, with sand instead of earth under your feet, and coarse dry sands that shift and roll continually, giving you at every step the very suggestive feeling that you are desperately saving yourself from the bottomless pit, and you have some idea of the Florida paths. To one accustomed like myself to exercise on foot and in the open air, there will come, now and then, a longing for the pleasant walks in hidden shady nooks, the loitering by rock and stream, that rise to my remembrance as I write. Yet the drive along this lovely beach, and the enticing search for the delicate and rare shells that are sometimes cast up here after a heavy sea, make amends for all. I have seen the Atlantic in all its moods from Cape Ann to Canaveral; but nowhere does it dazzle and bewilder, and soothe and entrance as along the shores of this enchanting water-world.

The riches, too, of these seas, in all delicacies for the taste, of fin and wing and shell, are innumerable. I wish I could send you a dish of mammy's devilled crabs—mammy, who serves at her post in the household just as in "the days that are no more"—mammy, with her Madras head-kerchief and white pinafore, who watches over the children, carries the keys, superintends the making of all dainty dishes and queens it as the mammies of old. Nan and I found these fine fellows sidling along on the beach as we drove yesterday. It would have amused you to see Nan, quiet, golden-haired Nan, spring from the phaeton parasol in hand, and fetch in the brave fighters one by one, each lusty slave apparently feeling himself the victor as he clutched at and held fast the parasol stem. They were safely deposited in the box under the phaeton seat, to my infinite discomfort as I heard them sprawling and falling from side to side in their vain attempts at freedom. Mammy made us a royal dish when we got home, serving them in their own exquisite painted shells, resplendent in vermillion and gold.

Yonder, across the sound, lies Cumberland Island, with its white wall of shore glistening amongst myrtle and pine; and tall and ghostly, the ruins of Dungenness, rising like a warning and rebuke from the midst of the wilderness of flowers; Dungenness, the princely home of the descendants of General Greene, and given to him by the government of the United States for services in her battles, now ruined by the fraticidal hands of those for whom he fought to secure the blessings of liberty.

I do not write in bitterness. You know, as well as I, how we quiet people, we women and children, whose husbands and fathers tended the soil and studied in their libraries the les-

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sons of history, the acts that made nations illustrious and powerful, rather than the local wire-working and insane theories of demagogues—you know how we shuddered at the mad rush of half a nation toward self-destruction, in the foolish sophistical plea of States' rights to hide and shield a national curse which every civilized people had abolished except ourselves; you know how we talked and prayed and worked in our retired ways, to keep to the lesson of Mr. Clay, and thereby bring about peaceably the results which the civil war has achieved through bloodshed and pecuniary and domestic losses that has beggared the innocent and driven them to death or suicide or insanity, whilst the ringleaders strut to-day in purple and fine linen. You know how we tried to avert it all; and yet, when the crisis came, and honor and fraternity and social ties were so omnipotent that these our dear ones went into the mad whirlpool with the rest, how we worked, and sung, and became heroines in the very cause for which one year before we could find no expletive too bitter. God pity us! Could we do less, we women and little ones? What do we know? What can we ever know, and be true women, of any loyalty except loyalty to husband and home?

The lovely daughters of my friend have agreed to be my companions whenever I may venture out afoot; and with this pleasure, and the daily drive by the sea, in the light phaeton drawn by its fleet-footed mares, with my thoughtful noble friend seated beside me, I shall find little to remind me that I am "an exile from home."

If only you could drive with us to-day, along this finest beach in the world, stretching without a break for twenty miles, so white, so firm, so smooth, with fringes of foam-like pearls, and its rainbow-tinted sea leaping and exulting in the sun. We passed this morning an open caleche, the equipage of an invalid man of fortune, who has come, after a life of dissipation, to get back youth and health in Florida. He is a man of sixty, but eighty in appearance. When he first came, he was quite a toast with the young belles of Fernandina, whom he petted and caressed after a fatherly fashion; taking them to drive with him behind his spirited blood-bays, praising the Spanish eyes of the dark Spanish beauties, and drinking in the magic of their dazzling wit and sprightliness. It came about at last, however, that my lord needed sunshine and the magnetism of young strong natures to galvanize a nervous system worn out years ago; and is was infinitely funny to see my friend—he had driven her daughters once or twice—salute him as he passed, and then exclaim, *sotto voce:* "Ugh! the vampire!" He brings money, however, to Fernandina. He pays liberally for his board at the hotel; he gives liberally to the town charities; he comes with letters from gentlemen, recommended as a gentleman—(this dash means a Frenchman's shrug) and why may not beggared Florida take his cash and his compliments whilst she steers clear of the breakers that might damage her children's honor?

Beggared Florida, indeed! Yonder up the street is a lovely, old-fashioned home, wherein twelve years ago there was wealth and peace. To-day the charming women who stood as queens in those drawing-rooms once, delve at palmetto straw-plaiting, and smile with delight as they tell us Macy of New York pays them per week enough to give them the *necessaries of life.* For they have wanted many a day for food and raiment, and might have perished but for the delicate, unseen ministrations of those gentle guardian angels who wear the guise of mortality and who are to be found everywhere.

There is nothing to hinder Fernandina now, however, from permanent prosperity. Amelia Island, on which the town is situated, ought to be one of the first places of resort, summer and winter, in the land. In summer it is attractive to those Southern people who do not need the bracing air of a more northerly climate. The yellow fever never comes near it, and the air is as fresh and sweet as at Long Branch, whilst the ten thousand curious and beautiful flowers and the caroling birds make its gardens and glades Elysian. In winter its soothing sea air is like the breath of Eden to the northern invalid; and in winter as in summer kind nature cherishes the children of the spring till one feels that the old legend is no myth, and that here indeed the dusky people who met Ponce de Leon could have shown, if they would, the famed fountain of youth.

Already there are three good hotels here; the domestic markets do not yet afford fresh milk and butter. These must be had, the first in the shape of condensed milk (a wag at a railway station yesterday proposed that if Washington was the *father* Gail Borden ought to be called the *mother* of his country), and the second in the fine Orange county butter brought here twice a week in the New York steamers. The Florida beef is as fine as any to be had in Galveston, Louisville, or New York; and the endless

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varieties and luxuriance of the vegetables and fruits put to shame the idleness of too many poor people here, since for one-fourth the labor expended elsewhere a diligent man may make a fortune from the products of the soil alone. A gentleman here who made his garden literally by simply having the rich black earth from the marshes hauled in carts and mixed with the sand in his garden ground, has sold to New York hucksters $500 worth of green peas, and other vegetables to the amount of fifteen hundred dollars in the course of six weeks in the early spring. The main trouble and expense is in first getting the soil ready for cultivation, in digging up the roots of palmetto and other chaparral; and where it is needed making a soil, as I have said. Mother nature, with her dews and storms and sunshine, does all the rest. The average cost of getting land cleared and in order is twenty-five dollars per acre.

Mammy has just come in to remove the fragments of our crab lunch. I have kept two of the dainty skeletons for you, and have placed them with the rare, elegant shells that are cast ashore here sometimes after a tempest; the one invariable though varying lesson, the pearl from the dying oyster, the coral and silvery conch, and seaweed from the tumults of the deep, the song from the broken heart.

So be it. I eat the crab that was scalded alive to make a dish for my palate. Shall I wince if the destinies chop and grind me to carry out their ends? I ask the question of those who talk of fate. For me, I hold fast the old tradition that tells me there is One without whom not even a sparrow falleth to the ground.

"Ki-yi! dat is a rale dahnsin foot!"

Now if the living veritable devil had come up suddenly through the floor I could not be more confounded, as she stands there a pitch-black Hecate in tatters, grinning over one of my slippers which she has picked up from the floor and dandles in one hand, whilst in the other she holds a nosegay of exquisite tropical flowers. She smiled at my startled manner, and dropping a low curtsy, says:

"I brung you a flower-pot, Mistiss."

Then offering me the flowers and softly putting down the slipper beside my couch, she passes out; not by the key-hole or up the chimney, but barefoot and graceful, noiselessly as she came in, through the open door. She is Harriet, from Cumberland Island, who has come to do the weekly Saturday scrubbing. I will tell you more of her hereafter.

"Dancing feet." No royal compliment from royal lips could have been more gracious than this tribute from the half-barbarous whilom slave. Yet how the words send my thoughts trooping back to that past that will be present in spite of the lapsing years!

The mail-boat is ringing her bell. Look after my flowers, and see that Rex and Moustache continue to be the honorable exception to the old saw about cats and dogs. If only I might go to you a minute on the wings of this sweet south wind!

CHATS WITH THE CHILDREN.

BY THE EDITOR.

TRUTHFULNESS AND LYING.

The word truth is from the Saxon word, *treowth*. It means what is, what has been, what will be. The sun will rise to-morrow. This is the truth. The sun will never rise again. This is falsehood. It is not the truth. It does not conform with fact. If you were to lay your plans for to-morrow on the supposition that the sun would not rise you would not accomplish anything. Perhaps you would sleep all day; or if you waked up and found the sun was shining in at your window you would not be prepared for your day's work, and the day would be lost.

Lying, on the other hand, is telling something which is not so. The word *lie* is also from a Saxon word, *lig*, and means contrary to fact. A lie is a statement that is intended to deceive. We generally call a lie a falsehood. This is thought to be a milder way of expressing it. If one man calls another a liar many think it a vulgar way of stating it. Horace Greeley generally spoke of people who were not truthful as liars, and many people thought it a very coarse expression. A falsehood, however is nothing but a lie. The Latin word *falsus* means to deceive, and a falsehood is something not true, not conformable to fact, something contrary to what exists, or is said or done.

One of the most beautiful traits of character

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a man is truthfulness. I wonder if you all ıow the multiplication table? Well, this ble never lies, but always tells the truth. ɜst it whenever you will and it will not lie to ɔu. It always tells you that ten times ten is ıe hundred, and that seven times twelve is ghty-four. If this were not so there would : no certainty in anything. Suppose the mul-ɔlication table was not truthful, and you had ·me marbles, say a hundred, to sell at eight ɜnts a dozen. You could never tell when you ɔt the right pay for them; you might get too uch, or too little, or nothing at all; you might ·en have to pay to have some one take them. truthful table tells you just how much you ·e to get, and you are satisfied it is right. If were not for the strict truthfulness of this ble we could do no business with our friends ıd neighbors.

Truthfulness is just as beautiful in children, ı men and women, as it is in our arithmetics. : is beautiful everywhere; and it is just as nportant, too. A person who is not reliable, ıat you cannot depend on, that never keeps his word, is a very dangerous one. He will find it hard to get through the world, and will make a great deal of trouble. If we know it we never trust him.

I think children are generally truthful. Lying is hard for them; but they learn after a while if their parents are not careful. Usually fathers and mothers are to blame for it more than anybody else. They are not always careful to keep their word with them. They make careless statements and promises which are never fulfilled, and little by little children learn to imitate them. Servants often teach children to lie by doing so themselves. Such things are an abomination. I hope all the children who read THE HERALD OF HEALTH will learn to speak the truth. It will be easy enough if you begin when young and stick to it; but if you once lie you will find it hard to stop. Form the habit of always telling what is exactly so, and you will be as useful and as much a comfort to those you know as the multiplication table is to business men.

EDITOR'S STUDIES IN HYGIENE.

QUESTIONS AND ANSWERS.

I. Is immediate and continued friction with he hand any help in case of a bruise or blow? loes it keep up the action of the vessels?

ANSWER.—If the blow is light friction is ıseful. If there has been a severe injury then riction might injure.

TREATMENT OF CAVITIES IN THE LUNGS.

II. When there are large cavities in the ungs, as in consumption, can they be reached ınd treated as external sores, and with benefit?

ANS.—If they could be easily reached as a boil is they might be treated with advantage, no doubt. Efforts have recently been made in this direction, as the following will show: "The Medical Times and Gazette, Feb. 15, 1874, states that a novel method of treating pulmonary cavities in phthisis and dilatation of the bronchi was lately submitted by Professor Mosler, of Griefswald, to the notice of the members of the German Association, at their annual meeting at Wiesbaden. It consists in injecting certain drugs through the wall of the chest into superficial caverns, and leaving the canula in, so as to repeat the operation frequently at discretion. Mosler went even further, he made an incision into the wall of the cavity, inserted a silver tube or elastic catheter, and succeeded in drawing away the secretion and in disinfecting the pyogenic walls by means of a weak carbolic acid lotion. No difficulty was experienced in the operation, and the condition of the patient was improved; the cough became less troublesome and the febrile symptoms apparently moderated.

"Mosler's patient was still under treatment at the time of his communication, so that it was impossible to tell what the final result would be, and whether granulation and cicatrization would ensue. One point seemed settled, as far as it could be by experiments, and this was that the local treatment of pulmonary cavities is undoubtedly practicable, and that the lung is more tolerant of external interference than has generally been believed. At the same time the risk of pneumo-thorax, hemorrhage and pyæmia must not be forgotten."

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SPREAD OF DISEASE IN SCHOOLS.

III. Is there no method of preventing the spread of diseases in our public schools?

ANS.—Dr. Whitmore, the medical officer of Marylebone, has, in consequence of the prevailing and fatal epidemic of measles, sent a circular not only to the managers of every school in his district, but to every member of the London School Board, in which he states that measles is to a considerable extent disseminated by the free intercourse which takes place amongst children of the poorer classes in parochial and other schools. He suggests that all school managers should take the trouble to ascertain whether children attending schools come from houses where measles, etc., exist, and prohibit further attendance until such houses are free from infection; also that any room or cupboard used for children's hats, caps, bonnets, cloaks, etc., should be constantly disinfected by the free use of chloride of lime or carbolic acid.

SHALL WE USE POTATOES.

IV. Are potatoes a good food for all persons? Please tell us your opinion of the following:

"The constant use of potatoes as an article of diet is of doubtful prudence. We have known two cases of distressing vertigo, one in the person of an eminent physician, cured entirely by ceasing to use them. Mulder, the celebrated physiologist, declares that the excessive use of potatoes among the poorer classes and of coffee and tea by the higher ranks, is the cause of indolence among nations."

ANS.—Generally potatoes are useful to persons who live mainly out of doors and do much work with their muscles. The starch is a hydro-carbon, a supporter of animal heat and is the source of much force; but dyspeptics and people who do brain work had better use them very sparingly, or not at all. This is our deliberate opinion, after years of experience and observation. We have known the most distressing depression of spirits of years' standing entirely disappear after discontinuing their use.

THE CRUSADERS AND THE REVENUE.

V. Is it not a mistake to injure the government by diminishing the sale of liquors from which so much revenue is derived?

ANS.—The Temperance Advocate says: "The significant decrease in receipts from the tax on alcoholic liquors in the districts wherein the women's crusade has been most effective has created not a little comment upon the revenue aspect of the temperance reform. We are glad to observe in The Washington Chronicle a statement to the effect that it is the opinion of many of the Internal Revenue Bureau officers who have been interviewed upon the subject, that the $60,000,000 of revenue derived from the tax on spirits could well be lost to the government, if drunkenness should cease. They maintain that the prosperity of the country on account of the abolition of the traffic in spirits would sustain the imposition of this tax on some other article, and without burden. The official relation of these gentlemen to the revenue gives weight to their view, which is undoubtedly the true one."

In other words, the people who drink liquor would be so much more productive if temperate that they would add to the wealth of the country millions more than the loss of tax. Here is a subject for a whole essay, or book.

TO KEEP FLIES OFF HORSES.

VI. How can flies be kept away from horses in summer?

ANS.—The following hint may help: The sick and wounded are, in warm weather, often dreadfully annoyed by flies. The suggestion of a French veterinary surgeon deserves trial at such times. He says that a simple method of preventing flies from annoying horses consists in painting the inside of the ears, or any other part especially troubled, with a few drops of empyreumatic oil of juniper. It is said that the odor of this substance is unendurable to flies, and that they will keep at a distance from the parts so anointed. If this treatment should accomplish the alleged result it will be a great blessing to introduce into the sick room.

TO GET LEAN.

VII. I am too fat and want to get lean. How can I do it?

ANS.—Drink only cold water and eat principly of fruit, brown bread and green vegetables with lean meat. Work out of doors as hard as ever you are able. Use no milk, potatoes, sugar, butter, or such articles of food as make fat.

SPEAKING YOUR MIND.

VIII. Do you not think it always wise for reformers in temperance to freely speak their mind? Should they not be ever sowing seed and trying to do good?

ANS.—There is a time to speak and a time to keep silent. Read the following little story: "I am none of your mealy-mouthed, compromising fellows that are afraid of saying the truth," said a blustering, ill-tempered dog that could never let passengers go by in peace without a growl or bark, intimating that they

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re in the wrong way; "I always speak my
id and let people know my opinion."
'That would be all very good if they wanted
know it and your mind were worth speak-
;," said another dog; "but I rather think
h is not considered to be the case, for gen-
lly those who don't pass you as if they
ln't noticed you go by on the other side to
p out of your noise. Now, perhaps, if you
t a little quieter and didn't attempt to man-
the whole street, you would be of some use
d pass for an honest guide, instead of a noisy
arrelsome puppy, full of yourself."
And also the following about a meddlesome
nkey that set out to reform the world:
'Milk isn't good for you," he said to the cat,
d he upset the saucer and the cat scratched
e of his eyes out.
"You were not meant to gnaw bones," he
id to the dog, and he ran off with the bone;
t the dog ran after him and bit his tail off.
"How can beef be made out of grass, you
olish beast?" he said to the ox, offering him
e bone he had stolen from the dog; but the
: tossed him up into a tree.
As he sat there minus an eye and a tail, and
us a broken rib, he moaned: "How blindly
ngrateful is the world to its best benefactors."

UNDERSHIRTS.

IX. I am living in Philadelphia, my hus-
nd is a Scotch gentleman, and he has all the
rtinacity and postiveness of the Scotch mind.
f an idea once gets fixed in his head he never
anges it. He says that his mother's old
mily physician said that underclothing, or
ll clothing worn next to the skin—stockings,
rawers, undershirts, etc—should never be
oned, but should be washed and dried in the
pen air and put on without being ironed. He
ays the smell of the fresh air is healthy—I
elieve that is the way he expresses it—and the
eat of the iron in some way takes away the
vholesome freshness of the garment. Is there
nything in this, or is it only a whim? He
will have it that all sorts of griddle cakes are
nhealthy, and that baked apple dumplings are
ealthier than steamed; so I have mine steamed
nd his baked, and we never have any griddle
akes, as I won't have them made just for me.
Please give your opinion about it.

ANS.—Your husband is no doubt right about the stockings and underclothing so far as it relates to the air. The ironing presses the fibers together and excludes the air. Still something is gained by ironing, and perhaps the gain equals the loss. If the clothing is first ironed and then put in the sun for a short time the best effects are obtained. We do not think it makes much difference whether the apple dumpling is steamed or baked. Griddle cakes can be made healthy if desired. The dressing eaten on them is generally worse than the cake itself.

OIL IN LAMPS.

X. Where does the oil in a lamp go to when it is burnt out?

ANS.—The carbon of the oil or other burning fluid unites with oxygen and forms carbonic acid gas, poisoning the air of the room and making ventilation necessary. The hydrogen of the oil or burning fluid unites with the oxygen and forms water. A pound of oil burned would yield considerably over a pound of water; but this does not injure the air.

TRICHINA.

X. How many hogs have trichina?

ANS.—At a meeting of the St. Louis Board of Health a few weeks ago the city chemist reported that he had made microscopic examinations of pork from one thousand hogs retailed at butchers' stalls in the city for the purpose of ascertaining what per cent. of the pork sold was afflicted with trichina. The flesh from thirteen of the hogs, or one and three-tenths per cent., was found to be infected. The result when the experiment was made with separate hundreds was about the same. The doctor said that the butchers reported that they had sold but little pork during the last few months, and more care than usual had probably been exercised in cooking it. The parasite, when in a hog, was found in all parts, which must be very cheerful reading to those people who are wont to regale themselves upon the savory sausage or the nourishing bacon.

The true way to avoid trichina is to eschew pork. Touch not the unclean thing. The Bible is more emphatic in forbidding the use of pork than of wine, and yet Christians use it.

DIPHTHERIA GARGLE.

XI. Is there any harmless gargle for diphtheria that may be used and swallowed to advantage?

ANS.—The following is highly spoken of by a physician in a recent medical journal:

"Mix two drachms of fluid extract of *pinus canadensis* and seven ounces of pure water. One teaspoonful taken into the mouth, allowing it to remain a few minutes and then to be ejected; immediately after which the same quantity was to be swallowed. This could only be done by great effort, and the holding of the head in

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a position which favored the process of swallowing; this to be repeated every half hour until four doses of each have been taken, after which it was to be used once every hour. In three hours from the time the first spoonful was swallowed a change was manifested. The patient was able to swallow beef tea without so much pain and difficulty. In fifteen hours from the time the first dose was given there was not a particle of the coating on the tongue to be discovered. The appearance of the ulcers was favorable and the nasal obstructions were entirely removed, the alarming symptoms subsided and convalescence was fully established; recovery was rapid. I continued the use of the medicine; reducing its strength one-half and administering it at intervals of two hours for ten days, at which time all medicines were discontinued. I will repeat that at the time of beginning the use of this medicine the strength of the patient was so completely exhausted that she was unable to rise from her bed or to stand upon her feet."

PHYSICIANS BY THE YEAR.

XII. Do you think it would be wise to employ a physician by the year to keep the family well?

ANS.—It seems to us that families ought to be kept well, so far as possible, without a physician. People ought not to have a doctor constantly over them, like a little pope. Who would want a lawyer or a clergyman constantly at his heels to keep him from going wrong, morally or legally. If one were to employ a doctor by the year it should be one versed in the best knowledge of food, of ventilation, of sleep, of education, of gymnastics, of hygiene. Such a one as a teacher, but not as a doctor, would be exceedingly useful to advise such families as needed the instruction he could give. We have a very high opinion of the power of a good teacher, but a dictator to stand over each individual with a lash we object to.

WOMEN PHYSICIANS.

XIII. Do you think women physicians as good as men for their own sex?

ANS.—Competent women physicians are very necessary to their own sex and for children. They will be of the greatest service to young girls who need the knowledge of themselves. Their value ought to be largely as teachers and preservers of health. They should be compensated as fully for their services as men are; indeed, we are not sure but they should have higher pay.

EXHAUSTING POWER OF SOCIETY.

XIV. Does the habits of society prove exhausting to those who are much in it?

ANS.—Society is very exhausting to women. The late hours, the fashionable dress, the loss of sleep, the foolish waste of time in dissipation, tells terribly on health. Incomparably superior is the simple life, the early hours, the buoyant strength, the sweet friendship, than the fashionable society that fades the cheek, debilitates the mind and wastes the energies of life.

AGREEABLE EMOTIONS AND HEALTH.

XV. How do agreeable emotions promote health?

ANS.—Professor Tyndall while in this country last year visited the Falls of Niagara, and on reaching the Cave of the Winds by descending Biddle's stairs, he conceived the idea of attempting to pass under the blue waters of Horseshoe Falls from that point. He found a guide who was willing to make the attempt with him, and together the next day they passed through the mist and foam of the roaring cataract, reached the desired point, and returned in safety. In describing his emotions at one point in his perilous journey, he remarks as follows:

"Here my guide sheltered me again and desired me to look up; I did so, and could see as before, the green gleam of the mighty curve sweeping over the upper ledge, and the fitful plunge of the water as the spray between us and it alternately gathered and disappeared. An eminent friend of mine often speaks to me of the mistake of those physicians who regard man's ailments as purely chemical, to be met by chemical remedies only. He contends for the psychological element or cure. By agreeable emotions nervous currents are liberated which stimulate blood, brain and viscera. The influence rained from ladies' eyes enables my friend to thrive on dishes which would kill him if eaten alone. A sanative effect of the same order I experienced amid the spray and thunder of Niagara. Quickened by the emotions there aroused the blood sped healthily through the arteries, abolishing introspection, clearing the heart of all bitterness, and enabling one to think with tolerance, if not with tenderness, of the most relentless and unreasonable foe. Apart from its scientific value and purely as a moral agent, the play, I submit, is worth the candle. My companion knew no more of me than that I enjoyed the wildness; but as I bent in the shelter of his large frame he said, 'I should like to see you attempting to describe all this.' He rightly thought it indescribable. The name of this gallant fellow was Thomas Conroy."

PHOSPHORUS IN APPLES.

XVI. I saw the following in a paper a

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hort time ago: "By a careful analysis it has been found that apples contain a larger amount of phosphorus, or brain food, than any other fruit or vegetable, and on this account they are very important to sedentary men, who work their brain rather than their muscles."

Is the above true, and what per cent. of apples are phosphorus?

ANS.—In one thousand parts of an apple, using the entire fruit, there are:

Water	840.0	parts.
Ashes	2.7	"
Potash	1.0	"
Soda	0.7	"
Magnesia	0.2	"
Lime	0.1	"
Phosphoric acid	0.4	"
Sulphuric acid	0.2	"
Silica	0.1	"

It may be interesting to compare this analysis with wheat—the entire grain.

One thousand parts of wheat contain:

Water	143.0	parts.
Ashes	17.7	"
Potash	5.5	"
Soda	0.6	"
Magnesia	2.2	"
Lime	0.6	"
Phosphoric acid	8.6	"
Silica	0.3	"
Sulphur	1.5	"

This is after an analysis by Professor Wolff. There is of course variation caused by climate, soil, variety, etc.

It will be seen from this that apples are not rich in phosphorus, but wheat is. Apples are, of course, very valuable for other reasons. We can get plenty of phosphorus in many kinds of food and so do not need it in apples.

This analysis of course does not include the amount of gum, sugar, starch, pectine, woody fiber, etc., of the fruit or grain, but only the ash. See a very valuable paper on the apple and its analysis, in HERALD OF HEALTH for 1873, April number.

By this we learn that apples contain in 100 parts:

Sugar	6.40	parts.
Albumen	0.48	"
Pectine bodies	7.04	"
Water	82.00	"

AN INTERESTING QUESTION.

XVII. Do not the people who become temperate through the temperance revival make up up in other stimulants what they leave off in liquors?

ANS.—Undoubtedly they do in many instances. It needs a pretty thorough conversion of an intemperate person to make a man of him. Read the following letter bearing upon this subject:

To the Editor of THE HERALD OF HEALTH.—You have spoken kindly words for the crusaders, and are no doubt right. I will tell you what I noticed. It was in a town in Michigan. I saw a wonderful increase in the number of cigars sold and used where the rum shops had been closed. Temperance men are, many of them, the most inveterate users of tobacco I ever knew. At the very doors of a lodge of Good Templars I could hardly get on because the smoke was so thick. I tell you there is no cure for intemperance but the improvement of the race through education and breeding, and THE HERALD OF HEALTH is doing more for this cause than almost any other means I know of. God speed you in the work. ELIJAH.

MINERAL MATTER IN PLANTS.

XVIII. What proportion of inorganic or mineral matter do the parts of plants usually contain and leave when burned?

ANS.—The parts of plants seldom leave, when burned, more than five pounds of ash from every 100 pounds of the dried plant.

TEMPERANCE HOSPITAL.

XIX. Is there anywhere in the world a hospital conducted on teetotal or temperance principles?

ANS.—The Longford Fever Hospital in London is. Dr. Nichols says: "Not one pound of flesh-meat, pint of whisky or bottle of wine have been used in it for the last fifteen years; long experience having satisfied me that animal food, wine, brandy, etc., require to be given with great caution. It may be said that the class of patients was unused to good food and stimulants, therefore did not require them. However such is not the fact, for among them were officers of this house, members of the constabulary force, tradesmen, gentlemen's servants and others accustomed to substantial food. A large proportion of cases (in 1865) were spotted, with sordes on the teeth and a tongue like mahogany, and many were brought in with bed sores on their hips and back, and some with gangrene of the toes and feet. Nine persons stricken with the same fever were removed from one house to the fever hospital, and every one recovered, though they got neither wine, brandy nor animal food. I still continue the treatment which for sixteen years I have found so successful."

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OUR DESSERT TABLE.

APPROPRIATE CONTRIBUTIONS FOR THIS DEPARTMENT SOLICITED.

"OUR HOPE."

The eyes that turn upon her, light
With sudden ecstacies;
The hearts that note her stir with thoughts
Of all sweet poesies.

She winneth all the tender names
That joyful love bestows;
Some call her "Sunlight," some "Our Song,"
"Our Picture," and "Our Rose."

And some "Our Hope," do softly say,
Lifting an eager eye,
On from her girlhood fair to search
Its fairer destiny.

I, too, look forward, shade mine eyes—
Oft dazzled with false light
From all bewildering gleams—to read
Our hope in her aright.

Is it to see her beauty reap,
As youth's fair seasons go,
Full measure of the idle sweets
In flattr'y's fields that grow?

Is it to see her loveliness
Hang above passion's sea,
While hearts do leap and fall in vain,
Through her bright witchery?

Is it to see her noble worth
Win prouder name or home?
Nay! through no earthly tribute paid
Can its fulfillment come.

Not even through love, the crown that seems
For womanhood so fair,
This stern, sure hope, it will not let
Mine eyes rest even there.

"Dear heaven," it saith, "that of thy love
This token fair hast shown;
This heart like those through which Thou saidst
Thy kingdom might be known.

"This face our hint for dreams of how
The angel faces shine,
This perfect whole so framed to show
By human things divine."

Dear Lord thy hope in her fulfill—
A womanhood so pure,
That by its sign all heavenly hopes
Become to us more sure.

"Earth's gifts to her," this high hope saith,
"Shall be as heaven will."
But let her give of heaven and be
Our revelation still. M. E. B.

Always give a willing hand
Where you can to soothe distress;
Never harshly reprimand,
Never add to wretchedness. W. J. L.

LOST AND FOUND.

Lost, in early youth's rose-colored hours,
Of undimmed Trust the fairest flowers,
The lightness of the heart untried,
The glowing Hope to Faith allied.

Lost, all the fond illusions shed,
Of promise, on a dream-bowed head;
The visioned splendors, shining through
My Eden skies of summer blue.

Lost, 'neath the sunlight of the spring,
My youthful aspiration's wing;
The promise of the laureled name,
Circled with trumpet tones of fame.

Lost, from my lips the festal song,
Mirth-echoed by the careless throng;
From heart of care, the joy bells chime,
That sweetly pealed the olden time.

Lost, joys that once the heart-life crowned;
Yet blessedness the soul has found.
A higher trust all thought impels.
Faith with the long-tried spirit dwells.

Found, sweet realities in place
Of fond illusion's fleeting grace,
And visioned splendors still enfold
My paradisean heights of gold.

Cora Wilburn.

KINDNESS.

From the French.

Kindness is to the heart
What study's charm is to the mind—
Enjoyment which alone can fill,
The dreary void misfortune's ill
Or passion's fires have left behind;
That emptiness that wearies still
When other cares and griefs depart.

A noble sentiment!
For others teaching us to live;
When for ourselves to live would be
A consciousness of misery.
It warms the soul and smiles to give,
Beyond our sphere of destiny,
Emotions sweet and eloquent.

A. J. Eidson, M. D.

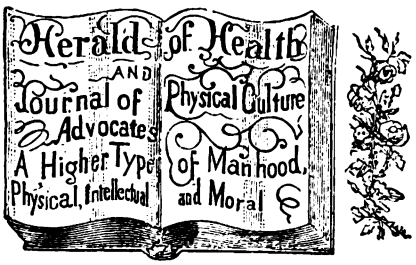
FRIENDSHIP.

True friendship is a gordian knot,
Which angel hands have tied;
By heavenly skill its texture's wrought,
Who shall its folds divide?

In vain death's all triumphant sword
May strive the links to sever;
The union of the twisted cord
In heaven shall last forever!

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EDITORIAL DEPARTMENT.



NEW YORK, JUNE, 1874.

WATER.

"To the days of the aged it addeth length;
To the might of the strong it addeth strength;
It freshens the heart, it brightens the sight;
'Tis like quaffing a goblet of morning light."

☞ THE PUBLISHERS *do not hold themselves as indorsing every article which may appear in* THE HERALD. *They will allow the largest liberty of expression, believing hat by so doing this magazine will prove to be more useful and acceptable to its patrons.*

☞ *Exchanges are at liberty to copy from this magazine by giving due credit to* THE HERALD OF HEALTH AND JOURNAL OF PHYSICAL CULTURE.

TOPICS OF THE MONTH.

BY M. L. HOLBROOK, M. D., EDITOR.

EARLY EDUCATION OF AMERICAN GIRLS.—*To the Editor.*—In Dr. Maudsley's elaborate review of Dr. Clarke's book, "Sex in Education," there is this remarkable passage relating to a girl's early education in America: "Her childhood is denied the happy out-door sports of her brothers. There is a resolute shutting out of everything like noisy romp. The active games, and all happy, boisterous plays by field or roadside are not proper to her. She is cased in a cramping dress, so heavy and inconvenient that no boy could wear it for a day without falling into gloomy views of life. All this martyrdom to propriety and fashion tells upon strength and symmetry, and the girl reaches womanhood a wreck."

Now I wish to ask you if this statement is true, or is it overdrawn?

Truly, S. E. T.

ANSWER.—Perhaps twenty-five years ago there was some truth in the statement. Perhaps there is some truth in it as applied to a few girls now. But if applied to all girls born in America it is very greatly exaggerated; so exaggerated that we may call it it untrue. It is untrue as applied to the great mass of farmers' daughters. They are not naturally half so inclined by nature to vigorous out-door sports as boys, but they do live a free out-door life so far as they choose. Go to the district schools of the farming regions and you will find the girls at their out-door sports during recess just as boys are, except of a less vigorous kind. Go to the farmers' homes and you will find girls, while children, are at liberty to go out of doors, if not as much as boys at least enough for health and development. Where we spent the summer last year there was a real paradise of children—boys and girls living out of doors alike, and girls dressed simply, easily and freely, rowing boats in sailor costume, digging sand with shovels, wading barefooted on the seashore, bathing in the surf, gathering shells and flowers, and as happy as they could be. We saw one day a sight long to be remembered—of three girls, daughters of wealth, beautiful as healthy children always are, barefooted, wading in water up to their knees to catch an eel that had got into shallow water. It seemed as if there never was such happiness. The girls were dressed so that they could wade in water without wetting their clothes; and they were as happy as they could be. But the poor eel refused to be caught even by such little beauties. Such sights were common all the summer long. It is true that at some very fashionable watering places girls are somewhat restricted. They must be dressed so richly and

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beautifully that great freedom interferes with clean clothes and good appearance; but even here the restriction is not so great as the passage quoted would imply.

It is true, however that girls are not inclined by nature, except in few cases, to the same boisterous, romping, rollicking sports as boys. Turn out fifty boys and fifty girls together at school for their sports, and they will separate in nearly every case. The boys will take to games of ball, the girls will jump the rope. The boys will play ante-over, kill deer, run, pomp pomp pullaway. The girls will make a play-house and play housekeeping, or tag, or some light graceful game, simply because it is their nature to do so. Or if girls choose the same sports they play more gently. When they skate they do it gracefully, while the boy cuts all sorts of fantastic figures. When they row they do it gently and elegantly, while the boy tries to run a race, or beat some one else, or see how fast he can go and how much risk he can run.

While we disagree with Dr. Clarke in some of his statements, we accord to him the honor of having done a great deal of good by his book. It is neither stupid nor dull, and has more truth in it than most books that are published. We hope, after his critics have got through, he will revise his book and reply to his adversaries.

CHILD-BEARING WITHOUT SUFFERING.—The following letter is from Mrs. Horace Mann, and will be found to corroborate the statement of Mrs. Duffey in the last HERALD OF HEALTH, concerning the methods of living advised in our book, "Parturition Without Pain," avoiding most of the pains and dangers of child-bearing:

CAMBRIDGE, April 28, 1874.

To ——. On reading Mrs. Duffey's letter to you in the last HERALD OF HEALTH I resolved to write you of a very striking instance of the efficacy of the fruit diet in pregnancy, an account of which appeared in Dr. Holbrook's volume, entitled "Parturition Without Pain." A sister of mine had followed that regimen strictly, and found the benefit of it in bringing into the world children of uncommon physical and mental vigor, a development of body far exceeding her own in health. One day she visited a friend, a lady of wealth, who was out of spirits because she was expecting a repetition of the calamity which had occurred in several instances of child-birth in her own case. She was a woman of fine health, and the children whom she had successively lost (I think they were three) were fine, large specimens of the human being, but so large in the head and of such hard bone that they could not be born, and were all taken from the mother by instruments. She had found herself again pregnant, and expressed great sorrow that her own and her husband's desire to have children should meet with such sad disappointment. Everything that wealth and the kindness of the most considerate of husbands could do was always done. The first physicians and midwives gave their aid, but after great suffering the result had always been the same. The mother soon recovered after these trials, and expressed that she was always perfectly well after the birth. My sister asked her how she lived as to diet and exercise. She said she drove out nearly every day, and ate the most nourishing diet, chiefly bread and milk, and digested her food well. My sister then told her of the regimen prescribed by Dr. Rowbotham, and she concluded to give it a faithful trial. Instead of driving in her carriage, and sitting still the rest of the time, she promised to take a good walk every day at stated times. When the time of birth approached the same preparations were made as on former similar occasions, the same array of physicians and nurses were in attendance, and all friends were anxious lest a repetition of the calamity might at last prove fatal to the mother. One day she returned from a *three-mile* walk, and feeling a little fatigued, sat down on the rocking-chair in her bed-chamber before taking off her bonnet. Feeling a little uneasy she rose from the chair, and as she walked across the room the child was born upon the floor, without a premonitory pain! Since

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that time she has had several children with ease, and became consequently a convert to the system, as many of her friends were.

My sister's children were the quietest babes I ever knew. They were less troubled with colic than most children; but it is true that their mother ate wholly in reference to them, and avoided acids and green vegetables after their birth; and always had an abundance of food for them. Respectfully,

MARY MANN.

HINTS FOR ANY SEASON.—It is possible that the stature of all persons may be increased if the conditions of health are enforced during infancy and childhood, and until the age of puberty is reached. Exercise in the open air, and the kinds of food which produces the carbonates and phosphates, which are found in milk and in the husks of grain, are highly conducive to osseous development.

But few people attach due importance to the use of the kind of diet which contains the elements that contribute to the formation of bone.

The constituents of bone are carbonate and phosphate of lime, and one third the weight of the bone organic matter, therefore we should freely use oatmeal, Graham flour, beans, etc. In some localities the water is impregnated with lime, owing to the under-stratum of limestone that exists there, and it contains mineral properties sufficient, if used for domestic purposes, to increase the development of bone and muscle. Children should have all the milk they can drink. If it is first diluted with water, hot or cold, the proportion should be one tablespoonful of water, or a piece of ice, in a pint of milk. Sometimes milk disagrees with the stomach and forms curds. This tendency is entirely obviated by the admixture of water.

Children are more often fed too little than too much; too often their food is not sufficiently strong or nutritious. Cakes and candies should never be given to children until they have first eaten of wholesome food; they should have all the want of every kind of farinaceous food, and should also be allowed the judicious use of all other kinds, else some part of the system may be deprived of some important element of nutrition. They should not be permitted to remain long on the wet, damp ground, although their feet may be protected with overshoes. There are many days during the year when it is best for them to play on the porches that are most exposed to the sun. Dwelling-houses should have porches on all sides, so that children can have a preference on which to play, according to the weather. If they are sick give them no food or medicine except fruits, canned or otherwise, and air as pure as that which is unconfined, though they should not be exposed in a current of air. If there is fever lemonade should be drank freely, and iced milk if it is desired. Whatever article of food the appetite has a longing for may be judiciously given. Very fortunate are those children who live in healthful localities and have all the milk they can drink from healthy cows that are properly fed; and they are certain to enjoy robust health and develop strong osseous frames if they exercise freely in the open air and sleep early and as long as they wish to, especially if assisted by the under-stratum of limestone found in some localities. Even if there is a predisposition to hereditary disease these healthful influences will prove great preventives. Although the importance of food cannot be over-estimated, yet heat and light are threefold more important. More nutriment is furnished by the atmosphere than is found in any kind of food. It must be pure, or we are deprived of the vital means of life and sustenance; and the solar rays bring to our brains and bodies the very essence of life. V. E. S.

EDITOR OF THE HERALD OF HEALTH.—*Dear Sir.*—As a practical illustration of the importance and benefit of careful attention to the laws of hygiene—so earnestly taught in your journal these many years—I beg leave to place the following facts at your disposal:

I have a son fourteen years of age to-day, who has never had headache, toothache or earache in his life. I do not remember of his ever

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having the least derangement of stomach or bowels, never did any one have to get up with him at night on account of sickness. In a word, his life has thus far been totally exempt from the thousand aches and pains so common to American children. He has never so much as *tasted* tea or coffee, beer, ale, or stronger stimulants; not even "Mrs. Winslow's Soothing Sirup." The staple articles of his food have always been home-made Graham bread, fruits, potatoes, milk and beef—scarcely any of the last named until he was six or seven years of age; and until he was about that age he was not in the habit of coming to the table for his supper; a good large slice of home-made Graham bread, without butter or molasses, was his usual "tea." And he would smack his lips over it and say "how dood!" with more relish and gusto than any pampered child of luxury ever did over his pies, cakes or candies.

Truly yours, J. W. M.

M. L. HOLBROOK.—*Sir.*—I have sometimes thought that I would like to give the readers of THE HERALD the result of my experience in making Graham bread, as many find it difficult to make nice gems, and prefer loaf bread. Several persons have told me that my "Graham" was the nicest they had ever eaten.

I have an idea that the taste of potato or hop yeast does not harmonize with the flavor of nice fresh meal, so I continue to make bread in my old way (adopted first for convenience), which is to use dry yeast in the form of baking powder. My kind is "Horsford's Bread Preparation." To one quart of flour add a measure each of acid and soda, mix rather soft with cold water (part milk sometimes), and without any molding put immediately into the pans and into an oven of good steady heat. Salt and sugar can be added if desired, and will improve it for the tastes of many.

This does not involve nearly as much work as the making of yeast, setting to rise, etc.

Oatmeal pudding is disliked by many. I knew a lady who had always been subject to constipation, and after her first child was born suffered terribly. She did not like oatmeal nor Graham bread, but her husband told her that she was dying of eating fine flour. He procured some Graham meal and made a rather soft mush, which suited her taste. She ate freely of it, and she told me that it cured her and she continued to nurse her child. From what I knew of her I should say that she had never enjoyed such good health as she did then.

Many prefer Graham mush to oatmeal pudding, and it forms an agreeable change to those who find it necessary to live plainly.

I think I have never seen Graham mush mentioned in THE HERALD OF HEALTH.

I shall not feel slighted if you make no use of my recipe, but give it for what it is worth.

Will you tell me through THE HERALD whether there is any food particularly valuable to nervous people? I am very nervous; any little excitement makes me feel as if I was trembling from head to foot. Inward trembling, I laughingly call it; but it is not a pleasant sensation by any means. If I go to the Good Templar's lodge when there is considerable to be done I go home with a snapping headache. I have read that celery was beneficial to nervous people. I don't like it, but would try it if it would really help me. I might add that I am rather young to be troubled that way—only twenty years old.

MRS. E. A. B.

ANSWER.—To cure your nervousness you must invigorate your system. That food which is best for your general health is the best for your weak nerves. There is not, that we are aware of, any special virtue in celery. You must be careful not to over-do; and also to take a great deal of sleep. An hour of sleep after dinner would do you good. Go to bed early, and sleep eight hours every night. Your method of making bread is not the best.

THANKS TO MRS. EVERETT.—The following is from a distinguished lady teacher, at the head of an institution of learning for boys and girls, and will interest many:

DEAR MADAM.—Many thanks for your stric-

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cures on Dr. Clarke's book. Every word of yours is gospel truth. I have taught young men and women together for over thirty years, and it has been more often my experience that school life has greatly improved the health of the young ladies, especially those from towns. I could give names of almost any number who came to us thin, with that dead milk complexion that is so sad to see in a young lady. At the close of a year they often left us with bright, rosy complexions, with elastic step and all the insignia of perfect health; indeed, I have not a doubt but much of the ill health of our women can be traced to *lack of varied and right kinds of brain work*. I had not read Dr. Clarke when I gave my address on "Co-education" before the Woman's Congress, otherwise I should have given an earnest protest against its falsehoods. With all of woman's added opportunities for growth she still finds herself so helpless to work out the best that she feels she could do. I have two daughters just budding into womanhood; they are perfect pictures of health, they have never suffered an hour's discomfort on the account of the peculiarities of their sex; and their mother never did before them, though she was called a *good scholar* at fifteen; and they are doing as much brain work as boys ought to do at their age. My trouble is not with my girls, but for my boy, because the coarse men will not allow him to grow up pure like the girls. But pardon a stranger's freedom. Again I thank you for your noble words for woman.

Yours, MRS. A. A. A.

A RACE OF MEN WITHOUT A LANGUAGE.—On the Island of Borneo has been found a race of wild creatures, of which kindred varieties have been discovered in the Philippine Islands, Terra del Fuego, and in South America. They walk usually almost erect, on two legs, and in that attitude measure about four feet in height. They construct no habitations, form no families, scarcely associate together, sleep in caves, feed on snakes and vermin, on ants' eggs, and on each other. They cannot be tamed or forced to any labor, and are hunted and shot among the trees like the great gorilla, of which they are a stunted copy. When captured alive one finds with surprise that their uncouth jabbering sounds are like articulate language. They turn up a human face to gaze at their captors, and females show instincts of modesty. In fine, these wretched beings are men and women.

THE OLD BACHELOR.—He has none to love him while he lives, or regret him when he dies. No pattering feet or merry voices of children to welcome him home, and coax him into forgetfulness of the vexations of the busy days; no kind hand to smooth his aching brow after the last spree; no heart to cling to him, and lead him into the paths of temperance, self-control and peace, or, failing in that, to follow him to the depths of perdition, if need be. No wife or daughter has he, to teach him how faithful and holy is the love of woman. He may win fame among his fellows, but who is there to care?

AN UPSETTING SIN.—Dr. McCosh (now President of Princeton College) tells the story of a negro who prayed earnestly that he and his colored brethren might be preserved from what he called their "upsettin' sins."

"Brudder," said one of his friends at the close of the meeting, "you ain't got de hang of dat ar word. It's '*besettin'*, not upsettin'."

"Brudder," replied the other, "if dat's so it's so. But I was a prayin' de Lord to save us from de sin of intoxication, and if dat ain't a upsettin' sin, I dunno what am."

HOW TO GIVE CHILDREN AN APPETITE. Give children an abundance of out-door exercise, fun, and frolic; make them regular in their habits, and feed them only upon plain, nourishing food, and they will seldom, if ever, complain of a lack of appetite. But keep them overtasked in school, confined closely to the house the rest of the time, frowning on every attempt to play; feed them upon rich and high-seasoned food, candies, nuts, etc.; allow them

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to eat between meals, and in the evening, and you need not expect them to have good appetites. On the contrary, you may expect they will be pale, weak and sickly.

Don't cram them with food when they don't want or have no appetite for it—such a course is slow murder. If they have no appetite, encourage, and if need be command them to take exercise in the open air. Don't allow them to study too much, and especially keep them from reading the exciting light literature which so much abounds in our bookstores and circulating libraries. In addition to securing exercise for the children as above, change their diet somewhat; especially when they have been eating fine flour, change to coarse, or Graham flour.

We begin very much to doubt that the women of England are any more healthy than those of America, though the notion has a long time been prevalent. English women are larger, plumper and fatter than American women, but they do not perform so much work. American women are great workers, and have good powers of endurance. They are tough. If they would obey the laws of health they would be nearly or quite free from illness, except such as is inherited. It is said that English women are great walkers, and it is true; but this does not indicate higher health, but habit.

Breaking off the Use of Tobacco.—*To the Editor.*—I am twenty-four years old, and have always worked hard on the farm—am well and strong, but a slave to the use of tobacco; want to chew a pound a week. Please tell me through The Herald of Health how I can best break myself of the habit, and if there is anything I can use for awhile that will partly satisfy the desire for it? R. M.

Answer.—The best way to break off this bad habit is to do so at once. There is no substitute for you to use that will be of much service, a few kernels of dry corn being as good as anything. Make up your mind to be a man, and do it. If you have a mother or sister, get help from one or both. They will help you over the worst of the trial, if you implicitly trust in them; or if you have a wife or sweetheart, all the better; or any wise friend who has wisdom or firmness. During the trial take a full warm bath every day, and go to bed early and sleep as much as possible.

Words from Friends. — Among the most interesting as well as the most valuable of the monthly issues that come to us is The Herald of Health, a small magazine devoted to the discussion of sanitary and social topics, in a spirit at once earnest and enlightened. Its contributors represent the best and most ripened thought of the day on all questions of hygiene, of education and morals.—*Springfield Republican.*

I receive regularly The Herald of Health. I must acknowledge that of all the periodicals I take, either mechanical, political or agricultural, there are none that I look so anxiously for as The Herald of Health. Every article must be read, for I think there is sound reasoning in them. I trust that you have a large subscription list.

Yours truly, Silas Bertenshaw.

Some New Books. — "The Health Guide; aiming at a higher Science of Life and Life Forces, giving Nature's simple and beautiful Laws of Cure, the Science of Magnetic Manipulation, Bathing, Electricity, Food, Sleep, Exercise, Marriage, and the Treatment of One Hundred Diseases," is the title of a new work by E. D. Babbitt, D. M. In this book the Doctor of Magnetics, for this is what D. M. means, forsakes the old ruts of learning, beaten hard with the tread of ages, and goes off into the region of the unknown, there to gather fresh truths for the hungry world. His opening paragraph defines his position. In it he says that "Men have worn the medical, political and religious ruts so deep by centuries of travel that they can hardly *see* out of them, much less *get* out, and so the dear people who

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e languishing and crying for higher truths ust continue to suffer." His opposition to ugging sick folks is strong enough to satisfy e most radical of the anti-drug school, and his lief in magnetics, fresh air, sleep, purity of e, and progress goes far beyond that of a ma- rity of writers. All through, the work bris- es with earnest protests against abusing the e given us in the body, and new methods of aking life sweeter and better abound on every ge. He does not confine himself to showing ow to treat the sick, or how to keep well, but lls us how to build our cities, even so that ey shall be healthier and handsomer. Here a specimen, showing how to lay out a city:

"The streets, of course, should be wide, so as permit pure air, shade-trees, etc. The di- ection of streets should be northeast and south- est, crossed by other streets at right angles. he reason of this is as follows:

"1. So that rooms can be the more easily ar- anged for sleep in the right direction.

"2. So that the sun may shine on all sides of he house every day, and thus give its cheering nd powerful healing influence.

"3. So that there will always be a sunny side f every street to walk upon in winter, and a hady side for the summer.

"4. The names of the streets in one direction hould be First street, Second street, etc.; in he other direction, First avenue, Second ave- nue, etc., or First place, Second place, etc., while the houses should be numbered on the Philadelphia plan, 100 to a square. A stranger could learn the name and location of every street in one minute; and to give him a man's address would be to tell him at once the very square and part of a square on which he lived. This would be a great improvement on Boston, London and Paris, which scarcely any one can learn in a lifetime."

Here is another paragraph, showing people why it is better to sleep with the head to the north-east:

"Baron Reichenbach, by a large number of experiments with sensitive and feeble persons, found that they would be thrown into a very uncomfortable or spasmodic condition when they lay with their heads to the south, and still worse when their heads were to the west, but that when he turned them with heads to the north and feet to the south they were quiet and comfortable. This harmonizes with the idea of a magnetic earth-current going from north to south, or at least in the direction of the needle, thus throwing the warm principle towards the feet when the head points northward, while the distress occasioned by lying with the head to the west may be accounted for on the supposition of an electric current moving nearly from west to east, at right angles with the magnetic current, thus throwing the cool element to the feet, just where it should not be. This last direction must be particularly injurious to delicate ladies, in whom the electrical element already predominates too much, especially at the extremities; and these were the class of persons with whom Reichenbach experimented. I would recommend the *north-east* as a still better direction for the head than the north, as it throws both the cool current towards the head and the warm current towards the feet. The observance of these rules of position would save a vast amount of headache, neuralgia, and distress of the brain and nervous system generally. I lay down these rules not as a mere theory, but a fact established by my own experience, as well as that of many others, and it is high time our physicians had begun to look into these important health laws, which, if habitually violated, will imperceptibly undermine many a delicate constitution."

We will furnish any of our readers with a copy of this remarkable work for $1.

"Woman Before the Law." by John Proffatt, LL. B. New York, G. P. Putnam's Sons. This work contains seven chapters headed thus: Former Status of Woman, Loyal Conditions of Marriage, Personal Rights and Disabilities of the Wife, Rights of Property Real and Personal, Dower, Reciprocal Rights and Duties of Mothers and Children, Divorce." We confess to much pleasure in the reading of this book. The author contents himself in giving the facts of history and of law, without imposing

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on us opinions having no bearing on the subject. Men and women will be well repaid by its perusal. It costs but $1.

"The Safest Creed, and Twelve other Discourses of Reason," by O. B. Frothingham, New York, A. K. Butts & Co. To those who are familiar with the writings of this gifted radical preacher, no words of ours can add to the esteem with which they are held by a large class of cultured, thoughtful people. These sermons are a selection of some of his recent and most popular ones, and do him great credit. If half a million of them could be put in circulation they would do a great deal of good. Price $1.50.

We are entirely out of all the numbers of The Herald of Health for October, November and December of last year, and also the January number of this year. If any of our subscribers have them to dispose of, we will give them in exchange for each number a copy of Mrs. Jones's "New Hygienic Cook Book," price 30 cents.

A Ventilator for a Sleeping Room.—*To the Editor.*—I have had a ventilator put in my chimney, as you advised in your January number, and I would not part with it for many times the expense, which was very small. By advising all to have one, that are situated so that they can, it seems to me you might do much good. Your truly,

A Regular Reader.

Advertisements.

☞ Advertisements of an appropriate character will be inserted at the following rates: Short advertisements, cents per line; thirteen lines, for three or more insertions without change, 20 per cent. discount; one-half olumn, $12; one column, $22; one page, $40. All advertisements must be received at this office by the 5th of the month preceding that on which they are to appear.

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(From the *Evening Journal*, Chicago.)

From a careful perusal of an early copy of Mrs. Corin's new book,—which the numerous readers of "Rebecca" will be glad to learn is nearly ready for publication—we gather that, while the author holds somewhat advanced views concerning the relations of the sexes, she stoutly maintains the supreme sanctity of the marriage institution, and claims that it is *equally* binding upon *all* who take upon themselves its holy vows.

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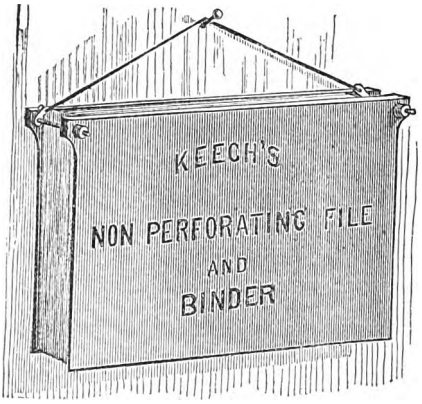
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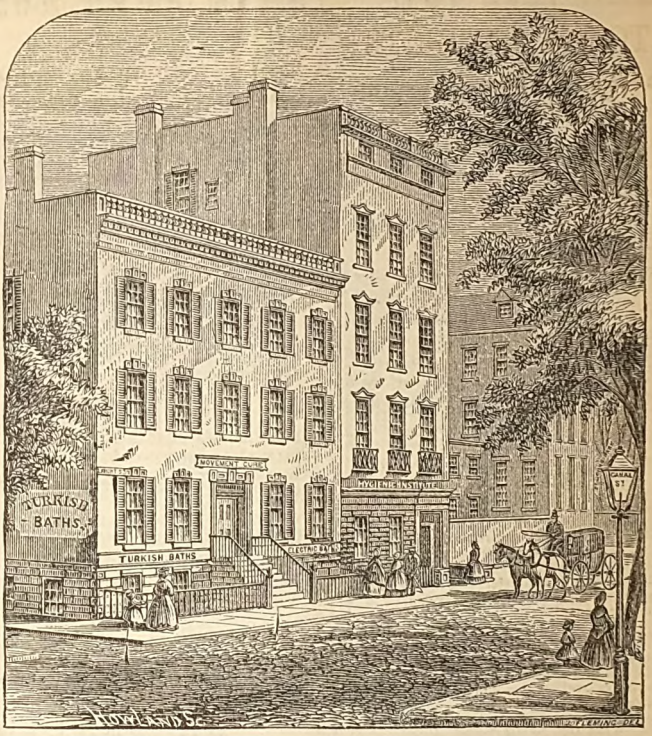
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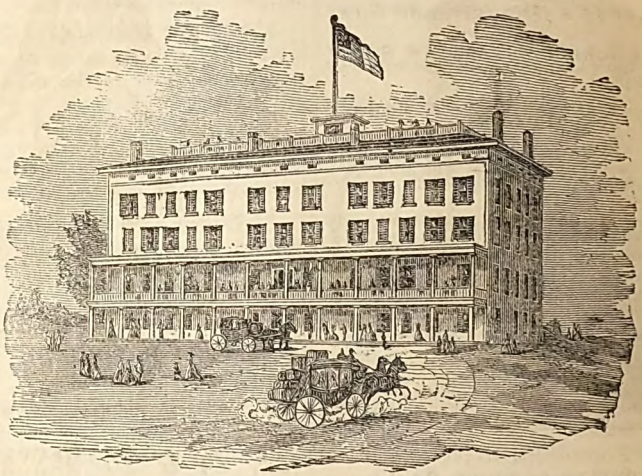
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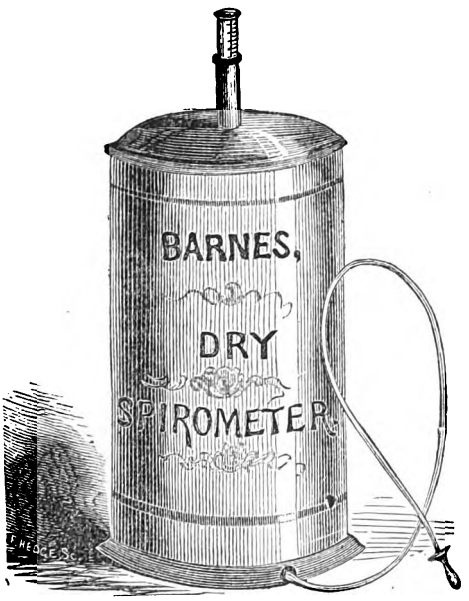
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