SMALLPOX AND HOW TO TREAT IT — F. M. ROSSITER, M. D.

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GOOD HEALTH

FEBRUARY, 1902.

New Glimpses into the Unknown.
Sylvester Graham — *Illustrated.*
The Smallpox.
Some Old-fashioned Shoes — *Illustrated.*
The Curse of the Drug Habit.
Hearing and How to Keep It — *Illustrated.*
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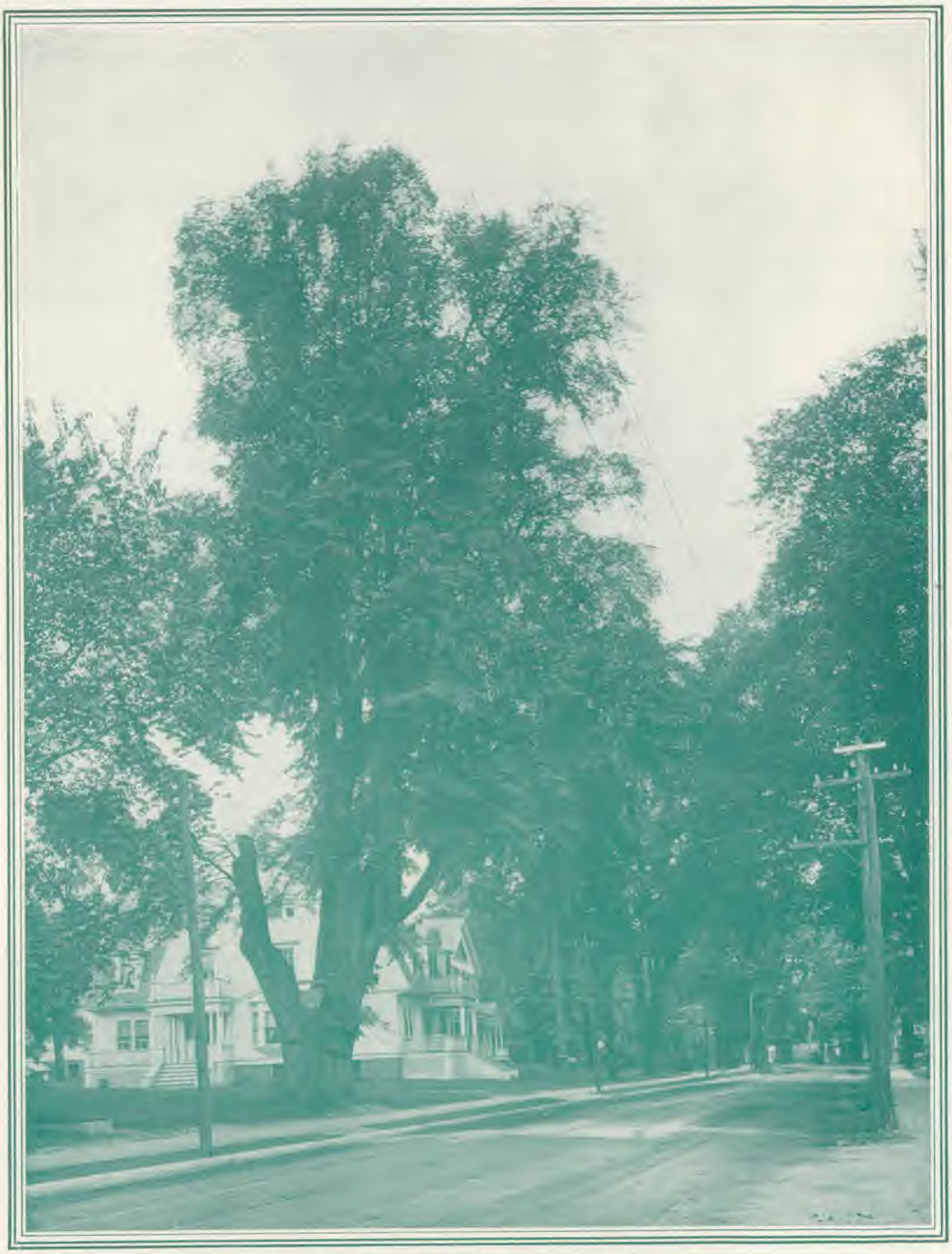

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GOOD HEALTH

A Journal of Hygiene.

VOL. XXXVII. FEBRUARY, 1902. NO. 2.

NEW GLIMPSES INTO THE UNKNOWN.

BY J. H. KELLOGG, M. D.

THE remarkable discoveries in physics that have been made within the last few years are a great shock to the self-complacency of those philosophers who have imagined that the atomic theory and the Darwinian hypothesis solved all the mysteries of matter, dead and living. The atomic theory, though serving the chemist a useful purpose as a working hypothesis, has for many years been growing weak in its knees as a lucid explanation of phenomena. The discoveries made in relation to light and electricity have shown clearly enough that there must be something associated with matter quite different from ordinary atoms and molecules as understood by the atomic theory. The ether hypothesis has helped to piece out, but this, too, has fallen short. Now the X-ray and the Becquerel ray, and other phenomena are brought forward with an array of phenomena which quite unsettle things for the chemist and physicist, and leave us all at sea respecting the ultimate constitution of things.

The discovery of a light that could penetrate such opaque objects as a hard-wood plank, two or three inches thick, and even thin sheets of metal, was sufficiently startling; but then the X-ray was produced by the electrical current, and we have become accustomed to look upon electricity as a sort of scientific wizard, and to expect new and startling things from those engaged in the study of this agent. It was not long, however, before the discovery was made that the X-ray, while opening to view the most obscure nooks and corners of the body, even penetrating the largest bones, and revealing the movements of the heart and lungs, and thus rendering the greatest service to surgeons and physicians, was at the same time a powerful agent for mischief, causing deep sloughs of the skin when too long applied, which showed great obstinacy in healing. But then this very baneful property was soon turned to good account in the treatment of certain parasitic skin diseases, particularly lupus, or tubercular disease of the skin.

But now comes the surprising discovery that the X-ray is not the result of any human invention, that it is not dependent upon electrical machines nor electricians, but that it is widely produced in nature, that the aurora borealis may be a manifestation of this marvelous force emanating from the sun.

The discovery has been made that there are earthy substances closely resembling lime or chalk in appearance, which as found in nature, and without manipulation of any sort, are constantly giving off X-rays in great quantities. Two of the substances, barium and uranium, have been long known to chemists; but a new substance, radium, has recently been discovered, which possesses this property to

an extent ninety times as great as any previously known.

The new element possesses light in itself. It seems to be, in fact, a sort of crystallized or solidified light. A few grains of it shut up in a closed glass tube give off a light of sufficient intensity to enable one to read a book. A mass as big as an apple would serve as a table lamp; and a ceiling covered with it would secure perpetual daylight in a room.

Professor Thompson and others have shown that these luminous earths give off minute corpuscles which are less than one thousandth part as large as the molecules of hydrogen, heretofore supposed to be the smallest of all existing atoms. These corpuscles, or particles, are continually flying off into space at a speed almost equal to that of light, or nearly 100,000 miles a second. So small are these particles, however, that the ceiling of a room twenty feet square would, according to Professor Becquerel, give off only one two-hundredth of a grain of radium in one thousand years. Supposing the amount required to cover such a ceiling to be one hundred thousand grains, the supply of light would not cease or diminish in less than one hundred million years.

A wonderful property of this light is that, while it is given off by a cold body, it is capable of heating the objects on which it falls. The writer has seen a piece of platinum glowing at a white heat under these wonderful rays. They produce chemical effects as do the sun's rays. Many other astonishing properties have been pointed out.

These observations throw a new light upon the constitution of things. We no longer need think of the sun as a big bonfire, likely to burn out some day, and leave the solar system to freeze up. The sun may be a vast mass of radium corpuscles, or of some similar material. It has been noted that radium or X-ray corpuscles will combine with nothing on the earth, but fly away into space. Who knows that this luminous matter is not being continually given back to the sun as fast as it is given out? At all events, the slow rate at which the supply is exhausted, must lead our scientific authorities to revise their estimates of the length of time the sun will last.

The spectacle of light and heat coming out of a cold, opaque body like chalk, opens a field for scientific speculation not likely to be soon exhausted. It may be that the scientific world will discover at last that the inspired word which declares, "God is light," is a simple statement of a profound and fundamental scientific fact. The discoveries of Becquerel, Currie, and Sequin in relation to the emanations from metals, open new and most wonderfully interesting fields for thought, and give hints of greater discoveries, whole new fields of discovery, yet to follow. At last we may all be able to see clearly the deep philosophy in Paul's declaration, "In him we live, and move, and have our being."

SYLVESTER GRAHAM.

BY WM. PENN ALCOTT.

WE are to review the life of an eminent pioneer in diet reform. Of scholarly inheritance and philosophic mind, a diligent and profound student, he was gifted with fervid and persuasive eloquence, as well as a love of humanity and a self-consuming zeal in laboring for the welfare of men, that made his rather short life a most potent factor for better living. Our books of reference usually leave but an inadequate impression of this noble career,— if they notice it at all. Let us briefly recall the biography.

SYLVESTER GRAHAM.

The old town of Suffield is in Connecticut, on the west bank of its great river, and adjoining the Massachusetts line. Here was born, in 1794, to Rev. John Graham, an emigrant from England, and a graduate of Oxford, his seventh and last child, our Sylvester. The father was seventy at the time, and soon left the delicate boy to a mother worn with care and trouble, even to the verge of insanity, in consequence of which she was obliged to commit the care of this child, for the most part, to his older brothers and an uncle.

For some years, Sylvester ran wild; then he was given the work of a farm laborer — both experiences being good for a frail child, who inherited from his father dyspeptic and rheumatic troubles so serious that it was thought his life would soon end. A little schooling was followed by an attempt to learn paper making, more farming, traveling with a horse dealer, and clerking. At sixteen, symptoms of consumption appeared, and he was again sent into the country. Foolish and unfortunate love affairs at this time, and for some years later, preyed upon his spirits, and aggravated his physical troubles.

Till this time our subject had appeared a thoughtless, rattle-headed, crazy boy, cheerful, wild, and extravagant; yet, in reality, deep and philosophic thought often occupied his mind, even from his earliest childhood. In his nineteenth year he began a religious life, and, as one fruit, set out in good earnest to cultivate his mind. After hard study for a few months, at the suggestion of his schoolmaster, he taught some time, till illness stopped him. Thus studying, teaching, recuperating, he reached the age of twenty-nine, when he entered Amherst College with the ministry in view.

At college, Graham easily kept up with his class in spite of nervous headaches and other ailments. But his powers of elocution were so great, and his oratory was so impressive and fervid that — mainly from envy — he was denounced as "a stage actor and mad enthusiast." At the same time he was popular in outside society, since he could write poetry, draw good like-

NORTHAMPTON IN GRAHAM'S DAY.

nesses, and take the lead in all gayeties.

Envy of his eloquence and of his other gifts rapidly became malignant, and finally charged him, most falsely, with a criminal assault, on which charge he was expelled from college. Serious illness was caused by this hasty and unjustifiable treatment, but Graham was wisely cared for by two kind ladies, one of whom, a Miss Earle, he married after his recovery. In the same year (1826) he became a preacher in the Presbyterian church, attaining considerable popularity in his ministry of a few years.

It was in 1830 that, being much interested in the temperance reform, he was engaged as a lecturer by the Pennsylvania State Temperance Society. Into this work he entered with his whole soul. Seeking the causes of alcoholic vice, he studied deeply human physiology and kindred subjects, and soon struck the trail he was to follow the rest of his life. The evil effects of a flesh diet are said to have been suggested to him by the Bible Christians of Philadelphia, and their pastor, Rev. William Metcalfe. This church, holding vegetarian principles, had come from England in 1817, and Graham must certainly have soon learned their views.

In some such way, our subject was led to an investigation of the relation of food to alcoholism, and then to disease in general. He says that he was as surprised as any one could be, at the conclusions to which he arrived. After lecturing about six months, he resigned his agency, but was persuaded to give a course of l ctures, in March, 1831, at the Franklin Institute in Philadelphia, on "Human Physiology, Diet, and General Regimen," and before these lectures were finished he was invited to repeat them at Clinton Hall, New York, in June of the same year. Calls for them soon came from every quarter, and for some twenty years (1830 to 1850) Graham was a power in our land through these lectures, delivered vith great enthusiasm and eloquence in most of the large cities of the Eastern States.

The disuse of flesh as food soon acquired the name of "Grahamism," and its advocates and disciples were Grahamites — the word "vegetarian" not being used till years later. "Graham" as the name for whole-wheat meal and bread made thereof, is a monument to Sylvester Graham that may endure for centuries, for, from his studies, he soon had the wisdom to discern that the ex-

clusive use of bolted flour was a great evil. In his "Treatise on Bread and Bread Making," and in his lectures, he urged this reform, and indeed initiated it.

Persecution, ridicule, controversy, only advertised his ideas and his name. He met much opposition from butchers and bakers, and as late as 1847, when he was lecturing in Boston, a mob was created by the latter class, which it was beyond the power of the mayor to quell. It was finally subdued by his own followers, who shoveled slacked lime upon the crowd from the windows of the lecture hall.

About 1835 Graham secured a home for his little family at Northampton, the "Meadow City" of New England, famous for its large and historic elms and its rich alluvial soil along the Connecticut River, in a valley where, alas! "the best tobacco in the world is raised." Here, on his native river, in another State, but scarce twenty-five miles away from his birthplace, he made his home through his remaining years. His house still remains, in part, on Pleasant Street, and his grave is easily found in the chief cemetery of the city. He had a fine garden, which he delighted to cultivate in his last years. Even those who hated his reforms admit that "he was a loved and honest citizen, interested in the public welfare."

His life seems shorter than it should have been, for at his death, Sept. 11, 1851, he was only fifty-seven. The "post-mortem" revealed no serious disease, but as Graham had often urged that his system favored longevity, and suggested that human life should at least round out a century, his own rather early death was a great shock to his disciples, and a decided set back to the cause.

But it has been observed that our subject had a feeble constitution by inheritance, and that his life did not add much to its vigor till manhood was reached. Graham was nearly forty when he began

IN THE NORTHAMPTON MEADOWS.

to practice his own dietetic ideas. He was extremely regardless of his need of sleep and relaxation. In his enthusiasm for the welfare of humanity, in studying and lecturing, he "burned his candle at both ends." "He was of a constitution and temperament which naturally rendered him mentally precocious and predisposed to nervous and scrofulous maladies. Few, if any, public men with such a temperament have been as healthy or lived as long as he." It appears that he was not sustained in his public work by happy co-operation in the domestic relations of his life. There is reason to think that in the feebleness and hypochondria of his last days, and under the pressure of friends and physicians, he allowed himself to be fed and dosed "as he would not." But a man should not be judged by what is forced upon him in the sufferings and helplessness of approaching death. If men who die for their country in war are heroes, much more one who goes forth alone to offer himself on the altar of universal human welfare. Nevertheless, Graham, as much as we, believed theoretically that it was better to be "a living sacrifice."

Our subject had four children, two of whom, with his wife, survived him. His work is well summed up by another: "If Graham failed to establish a system of dietetics, he at least modified the then prevailing habit of the excessive use of meat by proving that muscular strength does not depend on its consumption. He popularized the use of unbolted flour, and paved the way for the large use of cereals and fruit which afterward obtained."

A list of all Graham's publications is desirable, with a fuller description of some of them. First issued was his "Lecture on Epidemic Diseases, Particularly Spasmodic Cholera,"—a lecture given in New York City during the prevalence of the disease specially named, and frequently repeated there and elsewhere. His pamphlet was printed in 1833, and again in 1838, but is now found in few libraries.

The "Æsculapian Tablets" appeared in March, 1834, and was printed in Providence. Under this title were gathered letters and abstracts of letters from about fifty persons, exhibiting the effects of the "Graham system," in its application to invalids. Ninety-six pages, without a cover, make this modest work with its ambitious title.

Next comes the "Lecture to Young Men on Chastity," with editions in 1834 and 1837, one of which can be found in most large libraries of the Eastern States. This book aroused wide attention, and was the beginning of many publications and lectures in its line.

The "Treatise on Bread and Bread Making" probably came in along here, but the writer has never been able to find a copy, or even learn its exact date.

Sylvester Graham's classical work was his "Lectures on the Science of Human Life" printed in two volumes in 1839 and, in the last edition of 1877, in one volume of rather small type and 651 pages with an index. Fowler and Wells sent forth this last edition, and it is still on sale. Of its twenty-three chapters, the first eight give an excellent popular presentation of the anatomy and physiology of the body, followed, in two chapters, by a profound discussion of the intellectual and moral nature of man. Then a consideration of longevity, food, and the arguments for "Grahamism" occupy the remainder of the book. In the preface the author claims to have observed and thought upon these themes "for more than forty years," which, as it may be seen, would be from the age of four or five! He had given to this work, he says,

ten years of such assiduous labor that he believed it would shorten his life "in no small measure." This proved too true.

"The Philosophy of Sacred History" was originally issued in magazine form, two parts in 1842, one in 1846, and one remained as a manuscript till his death. The whole was edited by Rev. H. L. Clubb, and issued by the publishers of the work just mentioned, in 1855, as a book of five hundred and eighty pages. It is now out of print. This was a duodecimo, and none of Mr. Graham's books was of larger size.

There follow, in pamphlet form, a "Letter to Daniel Webster on the Compromises of the Constitution," dated June 3, 1850, and an "Address" occasioned by the visit of some military organization.

The *Graham Journal of Health and Longevity* contains numerous communications from our subject, but was edited by David Campbell. It was carried through 1837 and the two following years, and in 1840 merged in Dr. N. A. Alcott's *Library of Health.*

Aside from his "Introduction to a Life of Cornaro," and letters in a few other books and journals, the above appears to be a complete list of Graham's printed works. Special consideration of one of these volumes is desirable, because it is now rarely to be found, and because it shows, more than any of the others, the admirable spirit of the man. Its full title is, "The Philosophy of Sacred History Considered in Relation to Human Aliment and the Wines of Scripture."

About three fourths of the work before us is devoted to the Old Testament, taking up the Hebrew words and going into the matter deeply and philosophically. The views in general presented are not at present novel, but are such as are held by most Christian vegetarians. The author finds in the first part of the Bible that "permission to eat flesh and drink wine were at the time the necessary adaptations of the divine administration to the state and condition of man as a free moral agent."

As to the New Testament, his conclusions may be gathered from the following quotation: "In regard to the diet of our Saviour, it is very certain that he was extremely plain, simple, and abstemious in his food, and very seldom, if ever, ate flesh. On two occasions, it is said, he ate a little fish; but one of those times, at least, it was not for the sake of nourishing his body, but to convince his disciples of his real resurrection and bodily presence, and then he used the fish because there was no other food present. At any rate, the dietetic habits of our Lord, when all circumstances are properly considered, cannot, as a general fact, be said to be contrary to the doctrine of my lectures, but rather confirmatory. And it is an interesting consideration, that notwithstanding the boldness with which our Lord rebuked error, and the severity with which he censured the scribes and Pharisees and Sadducees, he expressed not the least disapprobation of the Essenes, who were at that time a considerable sect among the Jews, and who strictly abstained from wine and all intoxicating substances, and from animal food."

He argues "that the health and happiness of the body of man are as truly a final cause of the gospel economy as the salvation of the soul; and that such are the compound nature and the complicated structure of man that the highest and best interests of the soul cannot be secured while the true interests of the body are violated or neglected."

A touching prayer for the sanctification of all believers is found near the end of this, his last book, and with the follow-

ing words he closes his work: "What I have said I now commend to God, and pray that he will bless it to the world, and most especially to the church of our dear Lord and Saviour Jesus Christ; and make it instrumental of much good in quickening all true believers to higher attainments in holiness, and in carrying forward the great cause of truth throughout the world; to the glory of God in the highest, and on earth, peace and good will toward men."

THE SMALLPOX.

BY FREDERICK M. ROSSITER, M. D.

SMALLPOX means small sacs which first contain serum, and later, pus.

Smallpox has prevailed in India and Africa for thousands of years. It is said to have invaded China in 200 A. D., and Galen tells of a marked epidemic in Rome in 160 A. D. Its progress from east to west has been slow. It entered England in 1241, Iceland in 1306, the West Indies in 1507, Mexico in 1520, and Boston in 1649, from Europe.* The Indians were decimated by the disease. It traveled westward with the slow onward march of emigration, reaching Kansas in 1837, and California in 1850.

From 1700 to 1800, the century preceding vaccination, it is estimated that fifty millions of people in Europe died from smallpox. In a very short time after the Spaniards invaded Mexico in 1520, more than three and a half millions of the native Mexicans were swept off by the disease.

Macaulay, in speaking of the smallpox, called it the most terrible of all the ministers of death.

But since the introduction of vaccination in 1798 by William Jenner, and also in consequence of improved sanitary regulations, the disease has lost much of its former horror.

To-day there are many other diseases that are to be feared much more than smallpox. The number of deaths from smallpox reported in the United States last year was 2,385; from tuberculosis, 150,000; diphtheria and croup, 44,411; from typhoid fever, 13,284; scarlet fever, 9,211; measles, 6,424.

Smallpox is feared because of the rigid quarantine regulations, while tuberculosis and diphtheria go stalking through the land with but little thought from any one except those who are directly afflicted.

Causes.

The real cause of smallpox is not known. It spares no age, and is most common between one and forty years of age. Children are more susceptible to it than adults. Smallpox is the most contagious of all diseases. More individuals, if exposed, and unprotected by vaccination, take the smallpox, than take any other disease as the result of like exposure. Filth and unhygienic living favor the spread of the disease. It is more common during the colder months of the year.

As to the element of contagion, Dr. Osler says: "The contagion develops in the system of the smallpox patient, and is reproduced in the pustules. It exists in the secretions and excretions, and in the exhalations from the lungs and the skin. The dried scales constitute by far the most important element, and, as a dust-like powder, are distributed everywhere in the room during convalescence."

As a rule, one attack protects against subsequent attacks of the disease.

During the last four years there have been frequent epidemics of smallpox in the United States, the disease having been brought from Cuba by the soldiers. It has been exceedingly mild in most cases, and with a very low death rate. In many epidemics it was at first diagnosed as chicken pox by the physicians because of its mild nature, and this partly accounts for its rapid spread.

Symptoms.

Smallpox appears in several forms. In one type the pocks are scattered all over the body, with healthy areas of skin between them. This is called the discrete type. In a more severe form the pocks run together, especially on the face. This is the confluent type. Hemorrhagic or black smallpox is almost always fatal, and may appear in both the types mentioned.

There is also a mild form of the disease called varioloid, that may appear after one has been vaccinated. Varioloid and smallpox are one and the same disease. A mild case in one individual may give rise to a very severe attack in another.

The time intervening between exposure and the first symptoms is called the incubation period, and is usually from twelve to fourteen days.

The first symptoms of smallpox are very much like those of la grippe. The onset is sudden, with chills, rapid elevation of the temperature to 103° or 104°, often vomiting, aching all over, with a very severe headache, and intense pains in the small of the back. These last two symptoms are prominent in smallpox, even in mild forms, and disappear when the eruption appears. The respirations are rapid, and the pulse is from one hundred to one hundred and twenty a minute. If the fever is high, the face is flushed, the patient is very nervous and restless, and delirium may be present.

The Eruption.

This usually appears at the end of the third day or on the fourth. It appears first on the forehead. Little red spots, looking like flea bites, are noticed near the border of the hair. A few hours later they may be noticed on the wrists, and later on the body. Within twenty-four hours these little spots are raised, and feel like shot under the skin, and are called papules. By the sixth day of the disease these little papules are filled with a clear fluid, forming blisters, or vesicles, or sacs. They are distended, and, if noticed carefully, a little depression will be seen on the summit of each. This is called umbilication. By the eighth day the vesicle is filled with pus, and forms the pustule. It is tense, surrounded by a red ring, smarts, burns, itches, and is tender and sore. If these run together, the patient suffers intensely. These pustules form under the thick skin of the palms of the hands and the soles of the feet, and ache like boils. About the tenth day the pustules break, discharge, and dry up. Scaling begins about the fourteenth or fifteenth day.

The temperature drops when the eruption appears, and if the eruption is severe, it appears again on the eighth day, when the pustules form. If the disease is mild, the secondary fever will not appear.

In the confluent form the face is very much swollen, the eyes are closed, and the patient suffers intensely. The pocks may appear in the mouth, throat, and breathing tubes.

In mild forms of the disease, the scaling is complete by the twenty-first day; in severe forms it may take several weeks.

If the pocks extend down into the true skin, there will be pitting. Pitting is favored by scratching, picking at the pocks, and opening them, and by intense light.

Mild forms of smallpox are often mistaken for chicken pox. In chicken pox the onset is mild. The eruption appears on the first or second day, is more pronounced on the body than on the face or limbs, is not shotlike, passes quickly through the vesicle form, and dries. The vesicles are not umbilicated. It is only in severe cases that pus forms in chicken pox, and then the pocks are not surrounded by the red ring. There is no secondary fever. Chicken pox almost always occurs in children.

Treatment.

When an epidemic of smallpox appears in any neighborhood, those who have not been vaccinated within two or three years should be vaccinated at once. To sanitary reform as well as to vaccination is due the credit for stamping out the terrible epidemics of this disease. Infants three months old may be safely vaccinated. According to the best authority, vaccination is useless three or four days after exposure to the disease.

The room where the patient is confined should be stripped of all needless furniture, carpets, rugs, chairs, pictures, — in fact, it is better for the community if all smallpox cases are confined in one house, or in tents, if the weather is warm enough.

Before the eruption appears, the patient should be given a hot blanket pack two or three times daily for ten or fifteen minutes, immediately followed by a cold wet-sheet pack, continued for twenty or thirty minutes. The sheet should be wrung out of water at 65°. During this treatment, towels wrung out of ice water should be kept on the neck and head. The first day the patient should have a hot enema, and during the next three days if it is difficult to control the fever, an enema at 75° may be given every four or five hours. The fever may also be controlled by placing cold compresses over the heart, with frequent changes, for twenty minutes at a time three or four times a day, afterward sponging the patient with cold water, and following this by light, rapid friction.

The great pain in the head and back may be relieved by placing an ice bag to the back of the head, by cold compresses to the neck, and a hot leg bath or pack continued for ten or fifteen minutes. Hot treatment will bring out any eruption quicker than cold treatment.

When the eruption appears, the fever goes down, much of the pain disappears, and the patient needs but little treatment aside from attention to the eruption. After the eruption appears, no friction of any kind should be given. For a mild fever, simple cold sponging is all that is necessary.

Compresses made of several layers of cheese cloth, and wrung out of cold water, should be kept on the face, and changed frequently. In one or two hours apply a hot compress for three minutes. This will relieve the pain and reduce the swelling. The eyes should be watched carefully, and washed several times a day with a saturated solution of boracic acid. The face may be oiled with simple vaseline, carbolated vaseline, or with an ichthyol ointment,— one part of ichthyol to three parts of vaseline,— and the cold compresses may be applied over this. The windows, or the exposed parts of the patient's body, should be shaded with red cloth if the light is bright. If the mouth or nose is sore, use a wash of listerine,— one part in four parts of water.

If the eruption is severe, and the secondary fever appears, the prolonged bath at 95° will be of great benefit. If this treatment is impossible, give cool sponging, or the cold wet-sheet pack.

The patient should have a light diet. Fruits may be eaten freely; also gruels, toasted breads, milk, and soft-poached eggs. For thirst, give water, fruit juice, barley water, or oatmeal water.

During convalescence the patient should be careful to avoid exposure to cold or drafts, for pneumonia or inflammation of the kidneys might result.

When scaling begins, the patient should have a soap bath daily. The bath should be followed by the application of a carbolated ointment.

Disinfection.

This should be rigid. For disinfection of the house, formaldehyde gas is the best disinfectant. This is used under the direction of the health officer. Sulphur is also good. Three pounds should be burned to every thousand cubic feet of room space. After sealing up the windows and cracks, place a tub or large pan partly filled with water in the room. Place in this an iron kettle, in which are live coals; place the sulphur on the coals, and leave the room, which should be kept closed for at least twenty-four hours. The woodwork should be washed with bichloride of mercury, one part to one thousand parts of water, and the walls should be repapered.

Linen and towels may be soaked in a bichloride solution (1 to 5000), and then boiled. Quilts and blankets are better burned, but after being subjected to the sulphur fumes, they may be hung out in the sun for several days. Bedticks should always be burned.

When a case of smallpox is in a private home, all other members of the family, excepting the attendant, should be excluded from the room. A sheet kept constantly moist with a weak carbolic-acid solution should be hung at the door. All the dishes used by the patient should be washed and scalded alone.

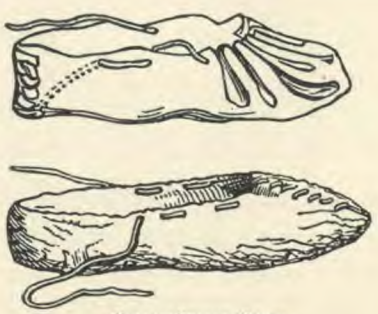
All other members of the family should bathe frequently, eat lightly, take plenty of sleep, and avoid exposing others.

SOME OLD-FASHIONED SHOES.

BY ETHEL TERRY REEDER.

SHOES were, without doubt, first designed simply as a protection for the feet, but in the attempt to suit them to Fashion's fancy they have passed through a bewildering variety of forms.

The first shoes of which we have any record were worn by the Belgic Britons. They were made of raw cowhide, with the hair turned outward. These came to the ankle, and were held in place by thongs passed through slits near the upper edge. The British name for these shoes was Esgidiav, which is, translated, "protection from hurt." Froissart tells us that in their midnight retreat before the English in 1327, the British "left behind them ten thousand pairs of old worn-out shoes made of undressed



BELGIC-BRITON SHOES.

leather, with the hair left on." Similar shoes were worn as late as the reign of Edward III.

Specimens have been dug up in England, made of a single piece of leather drawn up around the ankle by means of a thong, which operated like the drawstring of a pouch. Such shoes could not boast much artistic merit, but they no doubt fulfilled the function for which their name stands, and were probably

A Roman-British Shoe.

less conducive to corns and bunions than some of the later varieties. Neither could they be held responsible for the backaches which have followed in the wake of the more modern high heels.

The Romanized Britons adopted the dress, as well as the manners of their conquerors, and doubtless the nobles wore, in addition to sandals, the costly shoes of which the Romans were so fond. A splendid example of these was discovered in 1802, when an old Roman cemetery was opened at Southfleet, Kent. They were made of purple leather, decorated with hexagons, elaborately embroidered in gold.

The numerous pictures of Anglo-Saxon shoes ordinarily represent them as having one slit straight down over the instep, and fastened by a thong above it; but in some instances they are slit in many places, giving them the appearance of sandals. In all cases, however, they come up as high as the ankle. In this period the shoes of the common people were painted black, but those of the king, nobles, and ecclesiastical dignitaries are usually represented in gold stuff, with lattice patterns in embroidery.

During the reign of Edward III we find representations of shoes elaborately embroidered in gold and colors. The lattice patterns observed on these explain Chaucer's line describing the dress of the priest Absolam, who had —

" Paules windowes carven on his shoes."

The four examples given below, which are from the wall paintings in St. Stephen's chapel, exhibit the pointed toes that were in vogue in more or less exaggerated forms from the time of Rufus down to that of Henry VII. These ungraceful points excited the ridicule of the poets and historians, and the censure of the clergy. Ordericus Vitalis, who speaks of them during the twelfth century, says they were invented by some one with deformed feet, which may have been literally true; at any rate, there can be no doubt that there were many deformed feet after they were invented.

From Wall Paintings, St. Stephen's Chapel, Westminster.

SHOES FROM THE TIME OF HENRY VIII TO JAMES I.

During the reign of Richard II the styles in dress were most extravagant, and the toes of the boots and shoes reached such lengths that they were a great embarrassment in walking. To obviate this difficulty, the points were fastened to the knee by cords or small chains.

An author of this date says: "Their shoes and pattens are snouted and picked (piked) more than a finger long, crooking upward, which they call 'crackawes,' resembling devil's claws, and fastened to their knees with chains of gold and silver."

The accompanying illustration represents the "snout" of one of these fashionable crackawes. The original from which it was taken was six inches long, and was stuffed with moss, a veritable curiosity, indeed.

During the reigns of Henry IV and his son, moderation was shown in the length of shoes, but during the succeeding reign, that of Henry VI, they again reached such lengths that they became the subject of prohibitory statutes during the reign of Edward IV, at the close of which they disappeared, and fickle fashion rushed to the opposite extreme. During the sixteenth century the shoes became as ridiculously wide at the toes as they had previously been long and tapering. These broad shoes were little protection to the feet, as the toes were barely covered by the slashed leather, velvet, or other material of which the shoes were made.

After this period, the shoe began to bear some resemblance to its modern form, or, more properly, to the modern slipper. It is at this time that the heel first appears. This is said to have originated with a very short woman who wanted to be very tall because it was the fashion to be tall, so in desperation she had high corks put into her shoes. Other short women followed her example, and the style was set.

Stubbs, in his account of shoes, says: "The men have corked shoes, pisnetts, and fine pantoffles, which bear them up two inches or more from the ground, whereof some be made of white leather, some of black, and some of red; some of black velvet, some of white, some of green — razed, carved, cut, and stitched all over with silk, and laid on with gold, silver, and such like." He attacks the ladies in almost the same words: "They have corked shoes, pisnetts, pantoffles, and slippers; some of black velvet, some of white, some of Spanish leather, and some of English, stitched with silk, and broidered with gold and silver all over the foot, with other gewgaws innumerable."

TOE OF A CRACKAWE.

The corked shoes were evidently common in England, and are frequently referred to by the dramatists during the reigns of James I and Charles I. A corked shoe of the time of Elizabeth is described thus: "The upper leather was slashed and punched in a lozenge pattern; between that and the sole was a pad of cork, rising considerably toward the heel. In a play called 'Willy Beguiled,' printed 1623, a country girl says, 'I came trip, trip, trip over the Market Hill, holding up my petticoats to the calves of my legs, to show my fine colored stockings, and how trimly I could foot it in a new pair of corked shoes I had bought.'

In the Time of William III.

"From a po m of the time of the Commonwealth, entitled, 'The Way to Woo a Zealous Lady,' we learn that the shoes of the Puritans had pointed toes, and those of the Cavaliers square toes, for the gentleman informs us that, amongst other objections to his dress, the lady observed,—

'My Spanish shoes were cut too broad at toe.'

Leaving his 'pure mistress for a space,' he changed all his apparel, and on his return he says,—

'My shoes were sharp at toe.'"

During the reigns of Charles II and James II the shoes had high heels and long toes tapering to a point, but cut square at the end, with the upper leather not only entirely covering the instep, but extending several inches above the ankle. In a song of the period, a lady speaks of her "laced shoes of Spanish leather," and Malcolm tells us that "Spanish leather shoes laced with gold were common."

The man of fashion in 1720 wore square-toed, high-heeled shoes, with diamond buckles and enormous flaps at the instep. We are also told that "red heels to his shoes" were necessary to a beau's dress in 1727:—

"At every step he dreads the wall to lose,
And risks, to save a coach, his red-heeled shoes." —*Gay's Trivia.*

"Let him wear the wide-made shoes,
Buckling just above the toes."

—*Female Advice to a Painter, London Magazine, August, 1755.*

Artificial Shape of Shoe.

In the modern shoe we find a far more practical piece of footwear than most of its predecessors. Gold embroidery and diamond buckles are entirely incompatible with our idea of shoes. The high heel and the pointed toe seem to be the only foibles of bygone days which have any attraction for modern taste, and they have received a great rebuff of late in the low-heeled, wide-toed, and thick-soled shoes which are now almost universally worn on the street. It is to be sincerely hoped that this victory of good judgment is a permanent one.

Natural Shape of Shoe.

The accompanying diagrams and suggestions, which were presented by Dr. Royal Whitman in the *Clinic*, will prove

a great help in judging intelligently of the relative merits of shoes. When the feet are placed side by side, the imprint of the soles and the outline should correspond to the first diagram. The outline shows the actual shape of the foot. Inclose this in straight lines, and we find that each foot is somewhat triangular in form, being broader at the front and narrower at the heel. The imprint shows the area of the bearing surface, and owing to the fact that but a small portion of the arched part of the foot rests upon the ground, it appears to be twisted inward. If the sole of the shoe is to support the bearing surface, it must also appear to be twisted inward in an exaggerated right or left pattern. It will be straight along the inner border, to follow the normal line of the great toe; it will then make a wide outward sweep, to include the outline, and avoid compression of the outer border of the foot.

The second diagram represents the foot which has been subordinated to the shoemaker's standard.

With these suggestions in mind, it will be much easier to select shoes according to their merit.

Credit is due the Cyclopedia of Costume, published by Chatto & Windus, London, for the illustrations and the historical portion of this article.

WILL.

You will be what you will to be;
  Let failure find its false content
  In that poor word "environment,"
But spirit scorns it, and is free.

It masters time, it conquers space,
  It cows that boastful trickster Chance,
  And bids the tyrant Circumstance
Uncrown and fill a servant's place.

Be not impatient in delay,
  But wait as one who understands;
  When spirit rises and commands,
The gods are ready to obey

The river, seeking for the sea,
  Confronts the dam and precipice,
  Yet knows it cannot fall or miss;
You will be what you will to be!

—*Ella Wheeler Wilcox.*

THE CURSE OF THE DRUG HABIT.

BY DAVID PAULSON, M. D.

THE liquor habit is terrible in extent, and disastrous in results, both morally and physically; yet, there is another evil growing up silently, but with such rapidity that it is a practical question, whether the drug fiend will not before long be as common as the drunkard now is.

The physician meets few more pitiable sights than that presented by the typical morphine or cocaine fiend. One can scarcely conceive of any habit that binds its victims with such unrelenting bonds. In spite of the splendid advancement that is being made in this generation in the various lines of prevention

of disease, it is the testimony of those who are best situated to know the exact facts, that the number of persons addicted to the use of habit-forming drugs is constantly increasing, and that this evil is invading all classes of society, including the medical profession.

A well-known physician, in a paper recently read before the New York Medical Society, stated that after an extensive investigation covering three thousand two hundred and forty-four physicians, residing in the Eastern and Middle States, and in some cities in the Western States, he found six per cent of this number were using morphine or opium constantly; besides this, ten per cent were using opium or other drugs secretly. He expressed it as his belief that at least from eight to ten per cent of medical men were opium inebriates. The fact that almost every issue of some of our popular magazines contains a number of alluring advertisements of various remedies or institutions purporting to cure these drug habits, is of itself a strong indication that there are plenty of victims to patronize them.

Causes of Drug Habits.

It is a deep-seated fallacy existing in the minds of the masses, that they can violate with impunity the laws of health and life, which God himself instituted, and then dodge the unpleasant consequences by simply swallowing a few drops of some sedative or anodyne. There are thousands who persist in eating the most unwholesome food, who are indulging in wrong habits of almost every description, and yet who, when nature begins to utter her emphatic protests in the form of unendurable headaches or some other equally significant symptom, merely seek to secure some magic powder which has the power to "juggle" away the unpleasant results.

Various enterprising patent-medicine firms, by persistent and extravagant advertising, and partially by taking advantage of that superstitious reverence which still lurks in the public mind for drugs that are put up under mysterious names, succeed annually in disposing of $200,000,000 worth of their nostrums. The average invalid demands something more substantial than extravagant claims. As there is no drug that will so effectually smother the immediate cries of an outraged nerve as some form of opium, and as there is no medicinal agent that can supply such satisfactory temporary exhilaration as cocaine, therefore these drugs are beginning to enter largely into the composition of these so-called "remedies." They assist the enterprising manufacturers in securing reliable and convincing testimonials as to the remarkable efficacy possessed by their particular "cure" in furnishing immediate relief from pain. Soon a large number of these invalids discover that they can purchase the active agents for themselves cheaper than the patent-medicine man can supply them, mingled as they are with a variety of more or less inert substances. Unfortunately, many drug fiends made their first acquaintance with these drugs under the physician's supervision; but after they passed from his observation, they did not dispense with the fascinating effects of the drugs he prescribed.

Modern civilization has undoubtedly produced a higher degree of intellectual keenness than our forefathers possessed, but it has, at the same time, developed as a result of accompanying artificial brain- and nerve-destroying conditions, a multitude of semi-invalids, who do not possess the physical capacity for enduring the ordinary pains and hardships that are incident to life. Such seek, and

in many cases demand, without regard to future consequences, any agent which furnishes them either immediate relief from present suffering or unearned felicity; and each time the nerves are quieted in this artificial manner, without a removal of the cause, a little later they shriek out their pain louder than before, thus making it necessary to take a still larger dose in order to hush them.

The Cure of the Drug Fiend.

The victim of one of these drug habits is not permanently cured unless he is built up into such a state of health that he has no occasion to depend upon the drug. Unless this condition is established in the cure, the time and effort spent is, in most instances, thrown away. Multitudes of drug fiends are annually cured of their habits, but they themselves are not cured, and so it is generally only a question of time before they are using larger doses than ever. This is so commonly the case that there are many who have become skeptical in regard to the possibility of such a thing as a permanent and satisfactory cure for these unfortunate individuals.

A very common plan is to substitute a less dangerous drug for the one which the patient is using, and then in time to dispense entirely with the substituted drug. Sometimes this is a complete success; but in many more cases it simply proves to be a delusion and a snare, for upon the first approach of some slight pain or indisposition, the patient resorts again to the substituted drug, and soon drifts back to morphine over the same path that he came away, only much more rapidly.

Another method is to reduce the dose gradually day by day until the patient is taking practically nothing but distilled water. Some secure deliverance by this plan, but in many cases the withdrawal of the last minute dose is almost as painful to the worn-out nervous system after this long tiresome ordeal as would be its almost complete withdrawal at the beginning while the patient possessed a fair degree of physical strength, and before he had lost his courage. It also assists in the permanency of the cure, for the patient ever afterward, when he is tempted to trifle again with these habit-forming drugs, to be able to recall distinctly the sharp conflict that was required to secure for him his final freedom.

It is of the greatest advantage to enlist as far as possible the genuine co-operation of the patient in every step of the struggle to secure the mastery of the man over the craving for the drug. In order to accomplish this there must be no effort made to deceive the patient. He should be impressed with the fact that when he has determined to secure deliverance from the dreadful curse, he can have the full assurance of divine help, and that whatever is done for him is only co-operation with the work of Him who said "If the Son therefore shall make you free, ye shall be free indeed."

It is of the highest importance that such patients should have the advantages of properly equipped institutions, with their corps of trained nurses who can be constantly by their bedsides to carry out faithfully the physician's directions. But as these cases are constantly increasing, there will be multitudes to whom such opportunities will be entirely out of reach. Therefore, for the benefit of such, I will outline a few of the physiological measures that have been found very helpful in restoring to such patients the liberty to which they have so long been strangers.

One of the most satisfactory means that can be utilized is a prolonged full

neutral bath, the temperature of which should be as nearly that of the skin as possible, or approximately between 94° and 96°. Such a bath is extremely soothing to the hypersensitive nervous system. The patient may remain in this bath for an hour or more at a time, and he often succeeds in securing while in it a few snatches of natural sleep. The patient receives so much benefit from this bath that he ordinarily begs to be put back into it very soon after having been taken out. It may be repeated a number of times during the day with perfect safety.

Another very helpful procedure is the wet-sheet pack. The sheet should be wrung quite dry from water at a temperature of from 75° to 80°. This should be wrapped about the patient, and then he should be covered sufficiently with blankets, so as to prevent chilling, but not enough to induce perspiration. This may also be repeated several times during the day.

Sometimes the patient receives much temporary relief from gentle rubbing. There are ordinarily some parts of the body that are more painful than others; this pain can generally be relieved by applying portions of blankets wrung out of hot water, changing them as rapidly as they cool off. Such patients must have something done for them almost every moment they are awake, in order to divert their minds from themselves. One of the best heart stimulants is the constant application, over the cardiac area, of compresses wrung out of ice-cold water.

The diet should consist of kumyss, buttermilk, soft-poached eggs, malted nuts, and fruit juices. Beef tea and flesh foods should be entirely excluded, as the waste products which they contain irritate the nerve centers, and thereby increase the craving for the drug; in fact, the common use of these foods, as well as of fiery spices and condiments, is responsible for a large amount of drunkenness, and for the appearance of many of these drug fiends.

When the patient every hour or two takes fifteen grains of bismuth subcarbonate, and about four drops of fluid extract of Coto bark, he is not likely to suffer very much from aggravated diarrhea, which is otherwise generally produced by the withdrawal of the drug.

When the patient is taking only a few grains of morphine a day, it is highly advantageous to stop it at once. The physiological measures which have been suggested here, and many others which are carried out in institutions that are properly equipped to receive such patients, have such a quieting effect upon the nervous system that in many instances the patient does not call for a second dose; in less than thirty-six hours after the last dose has been administered he appreciates the fact that he has gained the victory, and nearly all his distressing symptoms disappear, except a feeling of weakness and persistent insomnia.

When the patient has been thus delivered from the craving for the drug, it must be impressed upon him that *he* still has to be cured. He must be led to appreciate that several hours of natural sleep at night are worth more to him than eight or ten hours of non-existence which is brought about by the use of drugs. By giving him a neutral bath before he retires, and applying to his spine and abdomen a hot bag after he gets into bed, with cold applications to his head, he will nearly always succeed in securing at least some sleep, and night after night he will improve in this direction until he will soon again experience the blessedness of nature's sweet restorer.

As his strength increases, he must take up a thoroughgoing course of

health culture, which will strengthen and develop him mentally, morally, and physically, for the long and excessive use of drugs has crippled him in all directions. It is a great advantage to him to have the opportunity of daily availing himself of such tonic hydriatic procedures as cold shower baths, salt glows, hot and cold percussion douches to the spine, as well as massage and electricity, and a well-regulated course of physical exercise.

The convalescing drug-habit patient must be thoroughly impressed with the fact that if he expects to continue the use of tobacco or liquor, it is only a question of time, beyond a shadow of a doubt, before he will gravitate back to his old habit, for tobacco and liquor link his present experience with his past. He used morphine and cocaine for the purpose of borrowing *unearned* felicity; that is the only reason he has for continuing the use of tobacco, and in most cases he will desire to enjoy a larger amount of felicity than the tobacco has the capacity to extract out of him. One of my patients refused to recognize this principle. When he started on his thousand-mile journey home, I felt certain that he would resume his old habit, although in other respects he was in a better physical condition than dozens of others. Three weeks afterward he returned worse than before, and said, "Doctor, you were right; I am going to make a clean sweep of it this time," and he did.

What has been stated in reference to tobacco and liquor, applies in a certain degree to highly spiced and irritating food substances. They may irritate the crippled nervous system just enough to create again so strong a craving for the drug that the patient yields to it; when, if a simple, nonirritating, and natural dietary had been adhered to, he would not have fallen a victim to his old master.

An eminent New York nerve specialist has called attention to the fact that tea drinking may, in a most effectual manner, pave the way for nervous prostration. Another leading authority upon nervous diseases has more recently outlined the equally extensive train of evils for which coffee drinking is responsible.

If we wish to benefit this unfortunate class of humanity, and also lessen the alarming increase in this great army, it is absolutely essential that we give heed to these seemingly minor points, for by so doing, we shall be the means of saving a large number of our fellow-men from a life that is at best but a living death.

HEARING AND HOW TO KEEP IT.

BY HARRY W. MILLER.

THE portion of the ear that is seen externally, called the auricle, is of less importance, and has less to do with hearing than any other part of this most complicated organ; the most important portion is the internal ear, which lies deeply hidden in the hardest bones of the body, about an inch and a quarter from the scalp.

There are a great number of animals, some of which have a very acute perception of sound, as fishes, eels, snakes, and chickens, who have no external ear or auricle.

The ear may be considered as divided into three portions: External, internal, and middle.

The external ear includes the auricle,

(O) a cartilaginous, funnel-shaped organ covered with skin, and a canal (N) leading from the auricle to the drum membrane. This canal (N) is a winding tube an inch long, first curving upward and then obliquely downward to the middle ear. The outer part of its walls contains glands (A) that secrete the ear wax.

The middle ear is an air cavity extending from the drum membrane (L) to

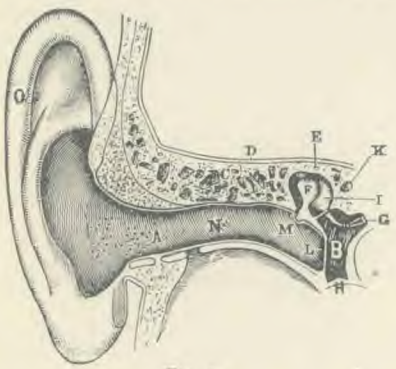


FIG. 1.

an oval opening into the internal ear (B). This air chamber contains three little bones: the hammer (F), the handle of which is attached to the middle of the drum membrane (L), and is connected with it; the anvil (I) which has a long process that extends to the stirrup (G), which fits into an oval opening in the vestibule (Fig. 2:2) of the internal ear. Leading from the back part of the roof of the mouth, is a tube, the Eustachian, which passes into the floor of the middle ear.

The internal ear, which is really the organ of hearing, lies very close to the brain, in the temporal bone, and diseases of this portion of the ear are readily communicated to the central organ of the nervous system.

The internal ear is also divided into three portions: the vestibule, the semicircular canals, and the cochlea; the vestibule (1) communicates with the middle ear by an oval opening (2) at one end. Three canals (3, 4, 5), the semicircular canals, open into it. At the other end the cochlea (7, 8) is found. The cochlea is a coiled tube, like a snail's shell. It contains the nerve fibers which conduct the sensation of sound to the brain. The internal ear is a closed chamber, filled with fluid.

When a wave of sound reaches the ear, a portion is taken up by the auricle, and directed into the canal, thus reaching the drum membrane (Fig. 1, L). This membrane is thrown by the wave into a motion to and fro. The handle of the hammer (F) being attached to the middle of the drum membrane, is thrown into vibrations that are transmitted through the other ossicles by its contact with them to the oval membrane (Fig. 2:2) of the internal ear, by the foot plate of the stirrup (Fig. 1, G). This causes a to-and-fro movement of this membrane.

This movement is communicated to the water of the labyrinth. Through this fluid the impression of the sound wave is conveyed to the soft part of the cochlea (Fig. 2:6, 7, 8), where the nerves lie, and it is the perception of this movement in the water of the cochlea, by the nerve threads and the brain, that constitutes hearing.

FIG. 2.

The glands that secrete wax lie near the mouth of the canal (Fig. 1, A). As the outer portion of the canal slants downward, a ball of wax, if let alone,

would naturally roll outward, and would not pass inward toward the drumhead unless forced artificially; also, the skin lining this canal grows from within, outward, so that there is a continual tendency to carry the wax from the internal portion of the canal outward, as the new epithelium forms.

Any attempt to cleanse the ear by means of probes, pins, hairpins, or ear spoons, has a tendency rather to push the wax farther in. "The cleanest people are generally those who pack the most wax back into their ears." A morbid idea of cleanliness leads them not only to swab their ears daily, but also to pour into them a variety of fluids, such as sweet oil and glycerine. These efforts are unnecessary as well as futile, and usually result in the formation of hard balls of ear wax, which are packed against the drum membrane. Frequently this delicate membrane is ruptured.

The scraping away of wax often causes the ear to itch, thus entailing scratching, which is liable to cause abrasion of the skin, thereby instituting a general inflammation.

Nature has placed the wax in the ear for a purpose, to protect the delicate structure of the ear, from larvæ, insects, and flies.

If there be an abnormal production of ear wax, so that it closes the external orifice, or a portion of it breaks off and falls deep into the ear against the drum membrane, causing partial deafness, the excess may be best removed with a hard rubber spoon, being careful not to scratch the skin, and not to introduce the spoon farther than the length of the first joint of the little finger. The deeper plugs of wax may be removed by first dropping into the ear a few drops of warm solution of bicarbonate of soda (baking soda). (Dissolve twenty grains of the soda in an ounce of water.) Allow this solution to remain in the ear for two hours, and repeat twice, holding it in the ear by a plug of cotton, and then syringing out the ear, holding the nozzle of the syringe in contact with the roof of the canal, just within the external orifice. The water used should be warm.

Foreign bodies in the ear, such as beans, buttons, grains, and stones, usually do little harm if let alone until removed by a physician. If they are small, their removal may be effected by means of a syringe, leaning the head over toward the affected ear, and having the patient shake the head at the same time. These foreign bodies do not usually reach the drum unless pushed there by useless attempts to remove them. These attempts may result in rupture of the drum membrane. Not infrequently the search is continued until the ossicles of the middle ear are dislocated and broken, and the hearing is permanently lost.

If the foreign particle is a grain of wheat or anything that will absorb water, it is well to use olive oil in syringing, because water may cause the particle to swell so much that its removal will be impossible, and great damage may be done to the surrounding tissues. In such a case by dropping in a little alcohol, the particle may be dehydrated, and will fall out if the tissues have not swollen too much.

Insects, such as fleas, bugs, and flies, sometimes find their way into the ear. They produce a sensation of a moving body in the ear, and may even cause severe pain by touching the drum membrane. The idea that these insects will find their way into the brain is a tradition of the past. It is easy to kill or expel insects which have found their way into the ear, by pouring warm water or olive oil into the cavity, and allowing it to remain for ten minutes. Vapor or chloroform may also be used to accom-

plish the same results. Syringing does very little good. After the insect has been killed, it may be necessary to use forceps for its removal, as it may adhere to the wall of the canal.

What is ordinarily termed earache is an inflammation of the middle ear. It is common because colds in the head are common, and because each attack of cold helps to produce a chronic catarrh, which in turn helps to prepare a soil that will grow the germs of acute inflammation. We should not leave "bad colds" untreated. The stuffy sensation felt in the ears during a bad cold is due to the closure of the Eustachian tube. This closure causes rarefaction of air in the middle ear, from absorption of air by the tissues; thus temporary deafness is caused by the retraction of the drum. At such times the hearing may be improved by inflation of the middle ear. This may be done for children by taking a short, clean tube of any kind, rubber preferred, about one foot long and of small diameter, and inserting it in one nostril, closing the opposite. The parent may then blow into the outer end. This usually causes the child to cry, facilitating matters, as it opens the orifice of the Eustachian tube so that the air will rush through and relieve the ache. If the sufferer is an adult, the ache may be relieved by the taking of a deep breath, then holding the nose, closing the mouth, and swallowing; or it may be relieved by pouring warm water into the external ear canal, and putting hot applications around it. Never drop oil or *hot* water into the ear for earache, for if there is a perforation of the ear drum, an inflammation is set up in the internal ear.

Far too common is the practice of putting numberless substances into the ear for the cure of deafness. A laughable list of these remedies includes rabbit's fat, eagle's gall, neat's-foot oil, milk, and pills. Dr. Charles Burnett had a case, in which a neighbor had persuaded a mother to pour boiling oil into a child's ear. The terrible result of such domestic treatment soon became apparent.

Pulling the ears of children is a torture that self-respecting parents should never be guilty of, as it may excite a violent inflammation, and frequently causes a malformation of the external ear.

Boxing the ears is also a dangerous procedure; many an ear drum has been ruptured by the sudden driving of a column of air against its unprotected front.

Bathing in cases of perforation of the ear must be done with great care, and cold water must never be allowed to enter into the ear. In diving or shower baths the ears should be stopped with cotton plugs. There is probably no popular delusion more common than that the splashing of cold water upon the ears strengthens these organs. The fact is that the ear is very intolerant to cold. The rush of cold water into the ears of persons submerged during bathing, may cause perforation.

A discharge from the ear should always be regarded by parents as dangerous, and should receive the immediate attention of a physician.

A child will not outgrow a running from the ear any more than he will outgrow a broken bone; and if the discharge is not checked, hearing, health, and life are in danger. If the membrane of the ear is perforated, a small piece of absorbent cotton should be worn, except when in the house or in bed, and if there is a discharge with an offensive odor, a wash of boracic acid (four grains to an ounce of water) should be employed at home, using an ear syringe.

By far the greater number of ear disorders that develop deafness, are chronic, such as catarrh of the middle ear, and

inflammation of the drumhead. A great majority of these cases result from neglect of acute attacks, which in the beginning were more or less curable, but were allowed to go on until the damage produced was irreparable.

The practice of stuffing the ears full of cotton on all occasions when there is any ailment of the organ, is pernicious. Air is nature's disinfectant, and should not be shut out from the ear passages, except when there is a discharge, and then the cotton plugs should be frequently changed. The cotton may work its way into the ear, producing the most distressing symptoms, and sometimes serious deafness.

Alcohol and tobacco injure the ear in two ways: first by causing inflammation of the membrane of the throat, and then of the Eustachian tube, extending up to the middle ear; and, secondly, by causing a congestion of the middle ear.

Popular impressions have prevailed that piercing the ears is a sanitary measure, and will relieve affections of the eyes. This is not true. On the contrary, it is often the starting point of diffuse inflammations or erysipelas.

The best method to restore a frozen ear is to use mild friction in a cool atmosphere, or if in a warm room, gentle rubbing with snow or ice. If heat is applied, inflammation will result.

One fifth of all the causes of deafness is hereditary. A distinguished American author says that this is due to the too close consanguinity of the parents.

According to Dr. Hartman, 8.1 per cent of all deaf mutes are the offspring of consanguineous marriages.

When deafness has come on after the child has learned to speak, no matter how absolute the deafness is, the little one should be discouraged from using signs in communicating thoughts, and every endeavor should be made to encourage the faculty of speech.

Children who are hard of hearing should always have the front seats at school. A well-known aurist has shown that of eight thousand seven hundred and fifteen cases of deafness, two thousand one hundred and seventy-five, or twenty-five per cent, were children under fourteen years of age, and pupils in the public schools.

Dr. Thomas Barr, of Glasgow, found that twenty-seven per cent of school children examined, suffered from diminished hearing.

These figures should convince school directors that the ears of every child who makes application for entrance to the schools, should be examined, and the exact hearing capacity determined.

The importance of the hygiene of the ears should command the careful attention not only of teachers and school boards, but parents also should keep watch of the hearing of their children. Many children are called stubborn, indifferent, and disobedient, when the trouble lies in the fact that they do not hear. Many a child pronounced stupid by an unsympathetic or undiscerning teacher, is simply deaf.

After a parent has learned that his child's hearing is defective, he should at once secure the services of an otologist, as delay may result in lifelong deafness and regret.

"Words are things; and a small drop of ink
Falling like dew upon a thought, produces
That which makes thousands, perhaps millions,
think." — *Byron.*

SWINE INSPECTION FOR TRICHINAE.

BY FRANKLIN EDSON BELDEN.

TAKING the cue from nature, this tale of the pig will be short, as much shorter than my previous article on beef inspection as the difference in the caudal appendages of these animals.

If but one who has been accustomed to the eating of swine tissue reads these facts, and as a result discontinues forever a scavenger diet, the recital shall not have been in vain. Those who care so little for life and health as to continue to jeopardize them, may properly be classed with the New York Suicide Society, recognizing this difference: only one a year in that organization sacrifices his God-given life, whereas the American Swine Society numbers its annual suicides by the thousands, under the obituaries, "rheumatism" (trichinæ in the muscles), "scrofula" (offal juices in the blood), and "fever" (garbage fires in the flesh).

Three years ago I spent ten days in and around the stock yards of one of America's largest cities; not as a velvet-voiced reporter for a magazine or paper; not as a well-dressed citizen, suspicious of foul work among venders of animal foods, but as "one of the boys," actually having for sale a cow and a calf, which I did sell after having been thus introduced to all whom I wished to interview. I was there on my own order, to satisfy myself. I liked meat, and nothing but danger to life could stop my use of it. I proposed to search out the facts, and did so, taking the opportunity just before removing from that city, when disposing of the two animals mentioned.

Only by urgent request of friends of humanity do I disclose my discoveries — as to beef inspection, in my previous article; now, relative to hogs; later, concerning poultry. Not one fiber of these creatures shall ever again (unless I become tired of life) constitute an element of dissolution in my body temple while I have access to that which is better — the Creator's grains, fruits, and nuts, free from the diseases which now they so often take on while being worked over into the tissues of creatures that were once "clean," barring entirely the always "unclean" hog.

Before I donned my cowboy apparel, I visited the chief government inspector, in the interest of sanitary reforms, introduced by my books on other subjects. I thus received all the attention which gentlemanly officials are wont to bestow on authors and writers, the chief molders of public sentiment, whose pens are swords for all against whom they wield them. Probably I would have received equal consideration if in my stock-yard boots; but I did not risk it.

Every man magnifies his office, if he is not tired of it, and Dr. —— was not. He gave me all the information asked for, much more than I have space for presentation here, and showed me every possible courtesy. Not one word of reflection would I cast upon him; for without government watchcare the condition of the flesh market would be much worse than at present. I merely call attention to the overlooked dangers, even under existing regulations, in districts where meat is said to be inspected by the government, leaving the reader to judge of what unprincipled men are doubtless doing in other localities. And here allow me to diverge sufficiently to say that if flesh is to be eaten at all, it should be more carefully examined, even more carefully than at present by the Jewish "kosher" men,

who, killing and inspecting beef for the Jewish markets, do the most faithful work of this character that is performed by any who make it a business; the hog being properly excluded by them as having no food value whatever. Anciently, that which was "sold in the shambles" was that which had been *carefully* examined, not after the manner described in my article on present methods.

Having exonerated my friend, Dr. ——, chief local inspector of the Government Bureau of Animal Industry, and only wishing there were three of him (since people will eat flesh), I briefly describe the method of pork inspection for export under his supervision.

At the time I visited his office, he told me there were five foreign countries that would not receive American pork unless accompanied by a United States government certificate of microscopic inspection as a guarantee against trichinæ.

The average daily shipment to these countries was about four thousand hogs — dead, as far as outer appearances indicated. When an order is received, the cooling rooms are drawn upon for three small sample slices from each of the ghastly porker candidates,— one piece from the neck, one from the thigh, and one from some other section. These are sent to the government inspecting room in sealed tin boxes, each having a number identical with that of the corpse from which the slices were taken.

In the large inspecting room were one hundred women squinting through magnifying lenses to find the deadly worm that foreigners do not care to eat. Each woman examined the contents of about forty of the tin lockers in a day, making a total daily average of about four thousand.

I looked through one of the microscopes, and had a bird's-eye view of one of these colonies of vicious, never-dying muscle snakes that cause thousands of religious people to think Providence is disciplining them in the rheumatic school of affliction, while others not so superstitious curse the "climate" and "overwork."

"How many hogs are found to be infected with these snakes?" I asked.

"Two per cent, on an average."

"So ninety-eight of each one hundred hogs, or three thousand nine hundred and twenty are daily exported to Europe. What about the two in every hundred, eighty per day, two thousand per year, rejected for foreign shipment because of these worms?"

"They are made into land fertilizer."

"What about the ten or twelve thousand other hogs, that daily leave the stock yards, besides the four thousand that are examined?"

"They are not inspected for trichinæ, and are sent out for people who don't know or don't care about the danger?"

"Where are most of them used?"

"In the United States of America."

"Is it not strange that Spain, ignorant Spain, should be more particular about foods than our own people?"

"It *is* strange. We would gladly inspect for the home market if the law required it, as do the laws of the five foreign countries; but the people here are not yet educated as to the dangerous character of trichinæ."

Taking one of the tin boxes containing a sample of the deadly meat, I hastened away, full of sympathy for that army of women forever hunting for the most undesirable and detestable of game.

Changing my apparel, I next formed the acquaintance of a hoary-headed inspector on the floor of one of the slaughter houses near by, incidentally remarked the dangerous nature of trichinæ, and asked about the process of transforming infected hogs into fertilizer.

"They are not made into fertilizer," said he. "They are boiled fourteen hours, which kills all the trichinæ."

"What is done with them then?"

"They are all right for cold ham sandwiches."

My subsequent acquaintance proved this man to be an amiable Christian gentleman, highly respected. He evidently told what he supposed to be a fact.

The third inspector whom I shall quote was met several days later in the yards. I mentioned the deadly two per cent, and asked if they were *thoroughly* boiled, or else sold for fertilizer.

"Neither," said he, "unless very recently."

"What use is made of them?"

"I have seen them slid out with those not inspected."

"That is dangerous."

"Not much more so than to send out eight or ten thousand not inspected at all. If it is safe to put on the market the two hundred (two per cent of the ten thousand not inspected), no harm to add a few more like them. Why sell two hundred trichinæ hogs at full market price, and lose three fourths of the price on the eighty by selling them for fertilizer?"

"How long have you been in the government employ?"

"Five or six years."

"How do you know that the two-per-cent foreign 'rejects' were turned into the home market?" I asked, a day or so later, in an off-hand way, while looking at a wretched cholera hog fallen by the wayside in the onward march of his fellows toward civilization.

"I handled them myself for two years."

Then looking me over suspiciously, he said, "Do not mention my name, or what I have told you; but it is the truth, or was, not long ago. Perhaps it is not so now."

I could not ascertain whether the two years were spent as a government employee, or not. I hope not; for he seemed honorable. I feel sure that even if in that capacity he violated the law, the fact never reached the ears of the Chief of the Bureau of Inspection.

Dr. A. told me what the law required — fertilizer.

Dr. B. told me what he understood it to mean — fourteen hours' boiling for food purposes.

Mr. C. told me what was actually done in his department — marketing at full price.

I do not believe they knowingly falsified. They all agreed that about three fourths of the daily hog output of that city was not inspected at all, and that Americans eat most of it. Why then should the dealers lose eight hundred dollars a day by making fertilizer of the eighty foreign "rejects," when America's noble sons and dainty daughters daily feast on two hundred likewise infected, but not inspected, scavengers of the earth, marketed from one city only?

Sweet land of liberty,
Well may Spain mock at thee,
Well-nigh self-killed.
What are thy rocks and rills,
Thy woods and templed hills,
While every muscle thrills,
Trichinæ filled?

MATERNITY DRESS.

BY DINAH STURGIS.

THE first important item in a maternity dress is that it shall be perfectly comfortable; next, that it shall be as becoming as possible. This also is really important, for if the expectant mother thinks that she looks displeasing, she is prone to make a recluse of herself; the evils of so doing are many and far reaching.

It is possible for a maternity dress to be entirely hygienic and also attractive. To compass these two desirable — more than that, really essential — features, it is necessary at the outset to design a special mode of dress. It is impossible, after the first months, to wear one's usual dress, and look well in it. Close-fitting garments that may be admirable at other times are impossible of alteration that is at all satisfactory. On the other hand, it is scarcely less a mistake to dress in the loose, flowing, wrapper type of gown; this is always an unmistakable mark of undress, and whatever its virtues under ordinary occasions, the expectant mother should permit herself to wear loose wrappers only in the seclusion of her own chamber. To be seen in such a gown makes her self-conscious, and by so much the less mistress of herself than the woman who, being always well dressed, meaning correctly garbed, under all circumstances, is free to put all her consciousness upon something else besides her toilet.

However large the figure, the line from under the arm to the ankle is always good. This should be outlined by fitting the dress under the arm. The back should also be fitted to the waist line, and thence downward have an abundance of fullness set in plaits or according to any other plan.

I speak of the dress first, because this is the garment to which attention seems first to be directed. But inasmuch as one dresses from the body outward, maternity dress should be first of all correctly started with the right kind of underclothing. In hot weather one kind is required, and in cold weather another. The best kind for the woman who has ready access to all that the market now affords in the way of woven undergarments, may not be available for the woman who must make her own underclothing. But one rule obtains in every case: this is, that the body should be clothed in one-piece garments. These should be comfortably loose fitting without superfluous fullness, and yet allow perfect freedom until the last day they are worn; and all weight should be evenly distributed. If the one-piece garment cannot for any reason be substituted for the two-piece plan, then at least the lower garments should be buttoned upon the upper ones, so that all bands can be entirely done away with. Undervests and underdrawers can be made into union suits by the use of a very little "gray matter" in the brain, and some thread and a needle, with scissors and a thimble. If one cannot have the woven "tights" that so admirably replace the under petticoat, at any rate petticoats can be buttoned to an underwaist. Stockings should be supported from the side, with the supporters attached to the underwaist; they should not be held up by round-the-leg garters, or by hose holders depending from the front of the waist.

There are, in a word, a round dozen ways of dressing hygienically, each being the only available best way for some women; the points to remember in ar-

ranging your best way and my best way, which may be alike or may be dissimilar in nonessentials, are these: The clothing should not constrict the body anywhere; it should be evenly distributed as to weight and warmth; and it should be as light in weight as is compatible with desired warmth.

Now we are back to the dress. One excellent model for a dress has a princess back and under-arm forms. In front the skirt portion falls from the bust line after the manner of the empire mode, and over this are bolero-jacket fronts. These start from the side seams reach almost to the waist line under the arms, and fall below it in front. Instead of making them plain, lay these jacket fronts in wide plaits of graduated length. In the empire skirt front have one or two underturned, wide side plaits in each of the side gores. Then in the princess lining of this dress have very long biases; instead of sewing these up, fasten them with eyelets and a lacing cord. By this arrangement,— designed by a New York woman physician for her own maternity dress,— the gown is really adjustable up to the latter weeks, because abundant fullness is allowed in the outside for all increase in size. As long as the length of the skirt of a maternity dress falls free from the bust line, change in figure cannot shorten the skirt.

The above is an ideal style of gown when the weather is too warm to require a coat and not warm enough to make a lined dress with jacket fronts too warm, and when one is one's self a clever dressmaker or can employ a clever dressmaker, for there are no patterns of the dress for sale.

For the winter perhaps a still more satisfactory gown is shown in the accompanying illustration. The model is in one of the pretty novelty wools in a warm, soft-toned plum shade with dull reddish rings of long silky hairs. The back and side forms are in princess style,

and the front is an exceedingly skillful surplice that is withal most simple. The lining is fitted with biases laced as described above. The outer fronts may be lapped to any desired point by using one of the ornamental link chains and small hooks of metal such as are used on fur boas, or merely by changing a hook and eye as required. The main thing is to fasten the front just under the bust line and not at the waist line. In warm weather the guimpe may be made without any stock and of wash fabric. If desired, this gown could be made without a lining and yet have the tidy, neat, refined effect of the dress that conforms in part to the contour of the body.

For this season of the year this dress is made just as available for church or the street as it is for the house by wearing over it one of the full-length cloaks of the season, selecting one of the loose "mandarin" or Chinese types, that, for a wonder, are exceedingly sensible and attractive and greatly in vogue. In the warmest weather this gown, if made of thin material, could be becomingly and comfortably worn under a long cloak of silk or mohair made with loose sleeves. Or by wearing a fluffy long boa of tulle this gown could be worn without any wrap, the use of the long full boa being merely to relieve the front of the dress. Of course a great variety of different developments in material and decorations will suggest themselves to every reader, but it is only the essentials that I need to dwell upon here.

Another point to remember is this: Do not wear a cape with a maternity dress. It makes the figure bungling in effect, and calls attention to it instead of away from it. Keep to garments that have full-length lines, or very long lines, that outline the figure at the back and under the arms, and have long loose fronts; these fronts must hang from the bust line, remember, in order that their length shall not be shortened later on as the waist measure enlarges.

The gown illustrated has many merits, not the least one being that it is simple; another, that it is a becoming and serviceable dress for any woman to wear at any time, and in any place as well as for a maternity gown.

LEGUMES.

BY LULU TEACHOUT BURDEN.

PEAS, beans, and lentils, which are usually classed among vegetables, are quite different from other vegetable foods in that they contain a large percentage of the nitrogenous element, and are known as legumes. This excess of nitrogenous elements renders them an excellent substitute for meat.

The legumes are inexpensive, compared with meats. They are more nutritious, and are free from the disease germs with which meats are laden. The nutritive value of lean beef, compared with that of green shelled peas, is as follows: —

	Water	Albuminous Element	Starch	Free Fat	Salts	Cellulose	Total Nutritive Value
Peas	72.7	21.7	57.7	1.9	2.8	3.2	84.1
Beef	12.	19.3		3.6	5.1		28.

The Chinese manufacture a cheese from peas and beans, and legumes were largely used by the nations of the East. The Hebrew children who refused the

meat and wine from the king's table, became stronger and fairer than any of the children who ate the portion of the king's meat, and legumes were the "pulse" which they used. Athletes, at the present time, frequently use legumes as a chief article of diet.

Often peas and beans are served with large quantities of fat. This is quite unnecessary, and makes digestion more difficult.

These foods are many times improperly cooked. Some authorities claim that it is not so easy to dispose of an excess of tissue-forming food as it is to dispose of either starches or fats; hence too much of such food will soon cause biliousness.

Acids do not retard the digestion of peas, beans, and lentils, as they do that of starchy foods. Patties, or cakes made from any of the mashed legumes, are excellent served with sliced lemon or a tomato sauce.

The tough hulls which encase the legumes often cause distress to persons of weak digestion, because they are indigestible. The food ferments in the stomach because the hulls retard digestion, and prevent the food from leaving the stomach as quickly as it should. When the skins are but partially broken, the digestion is not complete, therefore the method of cooking which entirely removes the skin is best. Even the green legumes need to be thoroughly masticated that all hulls may be broken before being swallowed.

Dry peas, beans, and lentils are more readily softened by cooking if first soaked for a time in cold water. The soaking has a tendency to loosen the skin, so that when boiled or stewed, it will slip off whole; the strong flavor is also removed by the boiling. The mineral elements of hard water have a tendency to harden the casein of which legumes are largely composed, thus rendering it very difficult to soften them. Soft water is better. It is usually better to put legumes to soak in cold water, and when the boiling point is reached, to allow them to simmer gently until done. Salt should not be added until the seeds are nearly done, as it hinders the cooking process.

Valuable recipes for preparing various dishes from the legumes may be found in "Science in the Kitchen," "Every-day Dishes," and in the nut-food recipe books issued by the Sanitas Nut Food Company.

Since the peanut has also been classed by some as a legume, it might be interesting to note some of its uses.

The finest peanuts in the world come from Virginia, and at Norfolk, in that State, is the greatest peanut market, where are a number of "factories" in which the newly gathered "goobers," as they come in from the rural districts, are winnowed and screened to clean them, and sorted and shipped to jobbers in other cities.

There is said to be a wonderful new kind of peanut, called the "Japanese White Mammoth," grown in Matagorda County, Texas, which is of giant size, and is reported to yield eighty-seven barrels to the acre. One reason why this should be interesting is the fact that the peanut crop of the old-time peanut-growing region of the South has been diminishing of late. Areas that formerly produced from fifty to one hundred bushels an acre, now yield but twenty bushels. This is attributed to careless farming, neglect to fertilize the soil, and failure to observe rotation in crops.

It is now believed that the peanut was a native of Brazil, and that it should make a fifth in the list of plants of great commercial importance credited to Amer-

ica, the others being the potato, tobacco, maize, and cotton. As far back as the seventeenth century it was extensively cultivated in the Old World, and had become such an important food in Africa that the slave dealers loaded their vessels with it, using it as provender for their cargoes of captives.

African peanuts, which are small and nearly round, and contain a single kernel, used to be imported largely into this country, but have been driven out by superior varieties. However, they contain a greater percentage of oil than other varieties. For the sake of the oil they contain, immense quantities are shipped from Senegambia and along the east coast to Marseilles, for conversion into pure "olive oil."

The poorer peanuts are used for soap; the residue, after pressing, is known as "cake," and brings thirty dollars a ton as cattle fodder. The shells are utilized as material for paper.

Recent experiments by dietetic experts have shown that one pound of peanut meal contains nearly as much nutriment as three pounds of lean beef. The meal which is obtained by grinding the "cake" costs four cents a pound in bulk, and the Germans have prepared from it several aggreeable articles of diet, such as "peanut grits" and "peanut meal."

The peanut has also been utilized in making some wholesome and toothsome meat substitutes, as well as a meal which is used as shortening for pie crust.

THE TENEMENT WOMAN'S THREE GREAT ENEMIES.

A NEW YORK physician read a paper before the Rainy Day Club of that city, in which he gave a forcible description of the three great enemies of the woman of the tenement, naming them as ignorance, alcohol, and tuberculosis. Subjoined are a few extracts from this paper, as published in *The Medicus:* —

"The factory or shop girl, when young, has her bright and gay moments, and like all other girls, rich or poor, she has her sweetheart, and looks forward to the day when she will have her own little home, and to the time when she will probably no longer have to work in the shop or factory. Sometimes her dreams of a beautiful little home where happiness, cleanliness, and purity prevail come true, and I am glad to say there are numbers of happy homes among this class of people, where the wife is intelligent and the husband sober and industrious. More often, however, the happy dream of the young working girl entering thoughtlessly into the matrimonial state, is soon dispelled. The responsibilities and cares of motherhood find her unprepared. She was a gay little butterfly, thinking that once married, her husband would look out for everything. Instead of that he gradually got tired of the perpetual care and worry, the badly cooked food, and the untidy rooms, and sought consolation in the saloon, where he soon spent the greater part of his earnings. Yet this poor woman is not to blame. She never knew how to keep house, and nobody ever taught her to cook. When she was twelve or thirteen, she was employed as a cash girl; and when she grew older and stronger, she worked all day, up to the time of her marriage, in some store as sales- or sewing-woman, or was employed in a factory. She had not the faintest idea how to take care of that little baby of hers, how to protect it as far as possible from disease, and to make a strong, healthy

child of it. Thus her ignorance of her duties as a wife or mother became the first cause of her unhappiness.

"She may have looked to learn from her neighbors, but they, like herself, were discouraged by the perpetual drudgery. Their rooms may not have been any neater than her own, and they also may have thought, 'What is the use to try to keep these dark rooms clean; no one sees them, and there is so much dirt and filth in the hallways and alleys through which the people have to pass, that it requires altogether too much work to keep the rooms clean?' . . . As a consequence, the halls in the average tenement house, into which daylight never penetrates, are dimly lit, if lighted at all, and the rickety ballustrade and stairs are covered with dirt.

"The greed of the landlord has helped to make it well-nigh impossible for the wife of the tenement dweller to make her few little rooms attractive enough to induce her husband to remain at home, and to stay away from the saloon. The man who drank only occasionally in former years, becomes gradually a daily visitor to the saloon, and more and more discontented with his home surroundings. It is fortunate enough, indeed, when he refrains from abusing his wife and children, when returning home, his brain poisoned by intoxicating liquors.

"It is, alas! not at all rare that the poor woman, too, is tempted at times to seek consolation and forgetfulness in drink; and what results has such a life on the health of the children? According to statistics, twenty-five per cent of the children treated in sanatoria for tuberculous and scrofulous diseases come from alcoholic parentage, while fully as large a percentage inherit a tendency to insanity and other nervous disorders, if they do not inherit directly a desire for strong drink.

"We will now speak of the third of the great enemies of the woman of the tenement. From what we have said, it is evident that ignorance often begets alcoholism, and alcoholism begets tuberculosis. But alas! alcoholism is not the only cause of the fearful prevalence of tuberculosis in the tenements. . . .

"There are two main causes for the propagation of tuberculosis in the tenements. First, the frequent presence of one or several tuberculous patients in tenement houses. Secondly, the unsanitary condition of the houses themselves. . . . If I should be asked what conditions are most conducive to the propagation of tuberculosis, and especially pulmonary consumption, I would have to reply: The conditions that prevail in the old-fashioned tenement houses as they still exist by the thousand in this and other large cities. In these tenements there are not only a far greater number of consumptives than in the same area elsewhere, but the proportion is actually greater per number of inhabitants. Thus they not only contain countless centers of infection for old and young, and multiple foci for reinfection for those already afflicted, but these dwellings, with their bad air, darkness, and filth, make a cure of the disease impossible, and a lingering death for all those infected by the germ of tuberculosis a certainty.

"If any one thinks me an alarmist, let him glance at the charts prepared by the tenement-house commission. There he will see that there are houses in which can be counted as many as twenty consecutive cases of tuberculosis during the last four years. This number represents, however, only the cases reported to the board of health. Now, you must not think for a moment that these are the actual number of cases of tuberculosis existing in that particular tenement. They are only the ones where the disease

had so far advanced that medical aid became imperative,—a physician had to be called in, and the case was reported. But how many of the moderately advanced cases are made known to either physician or board of health? I venture to say those not reported are more numerous than the reported ones. . . .

"Darkness, filth, and dampness are favorable to the growth of the bacilli of tuberculosis, and these conditions, as has been said, prevail in the tenements. Still, neither myself nor you would have to fear contracting tuberculosis if we visited these tenements. For let me tell you right here, the occasional inhalation of a few bacilli or even the ingestion of a few swallows of tuberculous milk, are not able to render the strong and healthy individual tuberculous. The healthy nasal secretions, and also the secretions of the healthy stomach, have a bactericidal or germ-killing property. Even should we be inoculated accidentally with tuberculous matter through a scratch, the blood in its normal state would, with the aid of its white corpuscles, kill the intruding bacilli. Thus you see that nature has been kind to us, and thanks to bactericidal properties of the blood and various secretions of the body, we are, when in perfect health, virtually immune to tuberculosis. . . .

"People recovering from chronic diseases, and such as have a naturally weak physique, are, of course, always more susceptible to the invasion of the tubercle bacilli. Therefore, such people, and also those recovering from typhoid fever, scarlet fever, measles, smallpox, pneumonia, or bronchitis, should be particularly careful not to expose themselves to infection. But not one of the diseases just mentioned prepares the field so well for the invasion of tubercle bacilli as does alcoholism. I call alcoholism a disease, for such it is in its medical as well as in its sociological aspect.

"The crowded quarters in which our tenement population lives facilitate the propagation of tuberculous diseases to a truly alarming extent. To have six and sometimes ten people living in three rooms, of which often only one receives direct light and air, is nothing unusual. Should one of the members be tuberculous, and careless in the disposal of his sputum, it is evident that the majority of the members of such a family are in the greatest danger of contracting the disease. The expectoration, dried and pulverized, is inhaled with the air of the room, and whoever is weakened by privation, disease, or excesses, may thus contract tuberculosis or consumption. The little children playing on the dirty floor, touching everything with their hands, and then putting their fingers in their mouths, or scratching themselves with their untrimmed fingernails, may contract tuberculosis by inhalation, ingestion, and inoculation at the same time.

"Thus we see that ignorance of how to dispose of and destroy the sputum before it has a chance to do harm, plays a most important part in the propagation of tuberculosis among the tenement population."

KISSING BY FORCE.

"THAT child cannot have a very affectionate nature. See how she turns her face when one goes to kiss her."

How many times have we heard such criticisms of little ones from those who ought to know better, and how frequently those of us who are mothers have been sorely tried by an inability to know

what it was best to do in this matter of kissing!

"Come and kiss me, darling," says an adoring friend. The child demurs.

"Go and kiss auntie," mamma remarks, coaxingly.

"Come right here, precious, and give me a good smack," auntie entreats. Still no response.

"Do you hear what I say?" mamma asks presently, in a tone that means business. Then the poor baby slides along slowly and reluctantly, and presents her cheek for the caress she despises. Auntie is shocked and disappointed. The little one draws the line at the cheek, and sets up a shrill remonstrance when the rosebud mouth is insisted upon, and the result is general discomfiture. Sometimes insult is added to injury by the quick wiping off of the remains of the obnoxious kiss.

Having a good opportunity for interviewing an intelligent child of four years a short time ago on this subject, the writer took advantage of it, and this was the conversation: —

"Grandpa felt very unhappy when you wouldn't kiss him this morning," I remarked tentatively.

"I *did* kiss him," my companion replied. "I kissed him in a clean place right by his ear," she added.

"But, Flossie, grandpa wanted you to kiss his lips," I went on.

"I know it, but I won't," was the decided response.

"Well, why won't you?"

"Because it makes me feel bad right here." And the child placed her hand upon her stomach with a gesture and an expression of countenance which I shall not soon forget.

"O auntie! I don't like hardly anybody's moufs. Mebbe their teeths ain't brushed."

In talking the matter over with the mother, she said to me, with a sigh: —

"Now see what a position I am in. Grandpa has gone away to-day with a real grudge against me for not compelling Florence to kiss him as he wished to be kissed. He told me I had 'no government whatever,' and that children who were allowed to have their own way in such things were always disliked by everybody. Also, that he had heard several people remark that Florence was anything but an agreeable child. Now, I know how she suffers, for I can remember my own unutterable agony when I used to be compelled to kiss everybody who came to the house. There were some excellent people — indeed, the very salt of the earth — whom I learned to hate solely on this account, and I dislike them intensely to this day. Flossie is learning this lesson of hating, just as I did, and what am I to do?"

It seems to me that sensible mothers should take such matters into their own hands, and dispose of them without fear or favor. "My child is not fond of kissing, and you must excuse her if she declines," would soon establish a praiseworthy precedent, and relieve the little one from obnoxious and everlasting teasing.

Some mothers are wise enough to decline to have their children indiscriminately kissed even in babyhood.

"In order to protect my baby," I heard a mother remark to a gushing visitor one day, "and in order to be perfectly fair to every one, I have made it a rule to have my baby admired at a distance. If I allow kissing and squeezing from one person whom I know I can safely trust my child with, then I offend some good soul whose contiguity I object to."

This parent did not need to tell me that she had undertaken a hard fight, or that

she had become exceedingly unpopular with many of her friends to say nothing of offending some of the near relatives of the family. But she was right, and this was the main point, after all. Infants and young children seem to be regarded, by a great many people at least, as public property, and the child who possesses enough individuality to protect itself from promiscuous kissing, is sure to be regarded as a most disagreeable, unloving little creature, who, more likely than not, will come to some "bad end."

We all profess to believe in "life, liberty, and the pursuit of happiness." Surely, if we do, we shall more carefully guard the lives of our children, and grant them the liberty to choose whom they shall kiss, and make them happy by seeing to it that they are not forever beset by hunters for kisses.— *A. K. R., in Babyhood.*

THE POWER OF HOPE.

MR. GEO. T. ANGELL, the celebrated president of the American Humane Education Society, in his "Autobiographical Sketches" gives the following incident relating to his mother, and showing, as he says, "the power of hope, and the importance of cheering the sick, instead of saying, *'How feeble you look!'* etc., and otherwise only adding to the troubles they already have to contend with.

"Oct. 16, 1854, at 10:30 P. M., I received a telegram that my mother in Vermont was at the point of death. I took the first train to Brattleborough; then as good a horse as I could find, eighteen miles to the little village among the hills, where she was residing. I had learned by my own personal experiences that doctors are sometimes mistaken. In one case, for instance, a quite noted doctor had told me that I had a fever, and should not be able to leave my bed for two weeks. I discharged him on the spot, took a powerful dose of cathartic, and the next day went to his office, and paid his bill. In another, one of the most distinguished eye doctors of Boston, promising to get me out in a fortnight, kept me six weeks in great suffering and weakness, and almost total darkness, and then told me it would take him six weeks more to get me out. I discharged him, took the case into my own hands, and by simply reversing his treatment got out evenings in about a week, and went to Vermont in about a fortnight. I took things to strengthen, not deplete, and began bringing my eyes to the light instead of shutting them out from it.

"But whether the doctor in this case of my mother's was mistaken, or not, I determined, God willing, that, if I found her alive, I would save her. What effect prayers have, God only knows; but I am sure I never prayed more earnestly in my life than I did for her recovery. I arrived in the afternoon; and as I drove up to the door, a lady came out, and I said, 'Is my mother alive?' 'Yes,' was the answer, 'but just about to die.' I strode into the sick room, and found there, around her bed, a large delegation of the church, singing the farewell hymns, and offering the farewell prayers. I spoke to her; and she said, in a feeble but pleasant voice, 'You have come, George, to see me die.' 'Oh, no!' said I, 'not at all. I have arranged all my business, and have come up to spend a fortnight; and am going to take right hold, and have everything straightened out, and you get well.' (This was the substance of what I said.) But her mind was so fixed on

dying, that she seemed determined to die. So I said, '*Mother, if it is God's will that you should live — if he has something more for you to do in the world — are you willing to live?*' '*Yes,*' *she said, 'if it is God's will, I am willing.*' 'Then,' I said, 'we will take the means.' I dismissed the church brothers and sisters in about five minutes, and put up a notice on the door that nobody could be admitted. I had every noise in the house at once stopped. I sent about forty miles for a lady friend of my mother's, a good nurse, to come without fail by next train, as it was a case of life or death. I sent about a hundred miles for her clergyman, to whom she was much attached, to come home at once. I sent sixteen miles over the hills for a noted physician. Mother had for several weeks been unable to take nourishment except by injections; and they had tried in vain to get ice, which it was thought her stomach might bear. I directed the stable keeper to harness a horse, start for ice, and not to show himself in town again until he brought it, if he had to go to Boston. The result was, the nurse, the minister, the doctor, and the ice all came; and my good mother, who would probably have died that night if I had not reached her, just six weeks and two days afterward, on November 30, was with me in Boston at church, and had the pleasure of eating her Thanksgiving dinner in my home."

HOW TO TEACH THE TRUTH ABOUT TOBACCO.

MRS. Jeannete Winter Hall, in the *School News and Practical Educator,* outlines the following excellent method of teaching school children the truth about tobacco using: —

"To plunge into this subject from its moral side, without giving any grounds for the statements, is always disastrous to the subject.

"The story of the early settlement of our country is one that never palls upon young Americans. Tell them the story of the settlement of Virginia. Let them find Jamestown on the map, and show them such pictures on the subject as can be collected by pupils and teacher. Tell them about the first raising of tobacco, and the craze that attended it, so that the people planted it even in their dooryards and along both sides of the street. The story of Sir Walter Raleigh and the first use of tobacco in England is always full of interest.

"If specimens of the tobacco plant can be shown, that will add to the interest. Pictures will, however, do just as well.

"Before beginning upon this history of tobacco, prepare three boxes or flower pots of sand, and plant half a dozen beans in each. Moisten two of these with fresh water as often as they need it, and the third with tobacco juice.

"A piece of soft chewing tobacco, as large as a walnut, in a glass of water, makes a strong enough solution, and lasts several days. Five cents' worth is enough for the experiment.

"After the seeds have sprouted, and the plants are an inch high, begin to moisten a second box with tobacco juice instead of water. Pour the tobacco water upon the plant itself, as well as upon the sand. It will be noticed that the seeds moistened with tobacco water come up much more slowly, and perhaps only half of them come up at all, and the plants are dwarfed, and unnatural in color. When the thrifty plants are subjected to the tobacco juice they begin

to change color and to look unhealthy.

"It will also be noticed that any flies or other insects which drink the tobacco water are killed by it. Describe nicotine, and tell of its powerful poisonous qualities. Tell the children that to chew tobacco leaves and swallow the juice would probably produce death.

"Tobacco is a narcotic, and all narcotics have the power of dulling the senses and of creating a desire for more of the narcotic. Describe the unhygienic conditions under which many of the cigars, and especially the cigarettes, are made. They will know of cases of first smoking and the sickness which it caused, but it will be well to have them thoroughly understand why this sickness results, and to know also that the ill effect goes right on afterward, although it is not felt, partly because the system becomes accustomed to it, and partly because the narcotic effect of the tobacco operates to benumb the feelings.

"Emphasize the selfishness and disregard of others' rights and privileges exercised by one who smokes or chews tobacco, and the useless waste of money which it necessitates. Work some little problems showing the cost of the tobacco habit, and after some of these, work others in expending this amount for useful things. For example: A boy spends ten cents a week in cigarettes. How much would he spend in a year at the same rate? How many books at fifty-two cents each could he buy for the money? etc., etc.

"Even men who are addicted to the use of tobacco never advise their sons to use it, and always speak against its use. They themselves would stop using it but for its narcotic effect, which makes them long for it. Tell of the effect of tobacco upon the heart, the stomach, the lungs, and show how much worse these effects are upon young tissues than upon adult tissues."

IS ALCOHOL A POISON?

IN our last number, Dr. Winfield Scott Hall considered the question, "Is Alcohol A Food?" proving conclusively that alcohol is not a food. In this issue we quote eminent authorities as to whether it is or is not a poison: —

"Alcohol is always a poison, whether diluted or undiluted. The high death rate of drinkers proves that alcohol is a poison, and the number of diseases due to alcohol is a proof that it is a dangerous nerve poison. Total abstinence from alcohol is one of the greatest aids toward hygiene, and attainable well being."— *A. Vickery, M. D.*

"British statistics prove that total abstainers from wine, beer, and spirits live longer — perhaps ten years longer, if they commenced at twenty — than persons who use alcoholic drinks. This tends to prove that alcohol is a poison, not a food, and that all use of it is abuse."— *C. R. Drysdale, M. D.*

"Ethyl alcohol is a poisonous matter, both for the human and animal organisms; its venomousness increases with the amount and frequency of the doses. But even when partaken of in the most temperate way, it plainly interferes with the functions of the various organs."— *British Medical Temperance Review.*

"Alcohol is a powerful protoplasmic or tissue poison, acting primarily on the cellular elements, just as opium, mercury, phosphorus, and arsenic. Its action, as classified by all chemists and toxi-

cologists, is really that of a narcotico-irritant poison."— *Capt. P. W. O'Gorman, D. P. H., Cantab.*

"Notwithstanding the apparent impunity with which diluted alcohol, in the form of various liquors, may be taken, pure alcohol is rapidly and certainly fatal when taken into the stomach without dilution. Alcohol in every form is still a poison, the rapidity of its effects being largely determined by the degree of dilution in which it is introduced into the system."— *J. H. Kellogg, M. D.*

"Alcohol is a poison, of which the habitual use destroys, more or less quickly, but inevitably, the organs most necessary to life,— the stomach, the liver, the kidneys, arteries of blood, the heart, and the brain."— *Dr. Legendre.*

"Alcohol is a poison. So is strychnine; so is arsenic; so is opium. It ranks with these agents. Health is always in some way or other injured by it; benefited by it — never."— *Sir Andrew Clark, M. D.*

"Alcohol acts as a direct poison by impairing the oxygenation and oxygen-bearing properties of the blood."— *L. F. Cope, St. George's Hospital.*

"Alcohol is a corrugator and paralyzer of the living tissue, as well as a narcotic poison."— *I. N. Quimby, M. D.*

"The action of alcohol on the nervous system is that of a depressant, narcotic poison."— *W. V. R. Blighton, M. D.*

"Compare the numerous deaths occurring among us from poisoning by prussic acid, carbolic acid, arsenic, lead, and other nonalcoholic poisonous substances, and you will find that the fatalities from these, all taken together, are few in comparison with the forty thousand and over that we have seen are attributable to acute and chronic alcohol poisoning."— *N. S. Davis, M. D., LL.D., F. R. S.*

"Alcohol poisons the nerves, and diminishes their sensibility. Humanity cannot adapt itself to such poisons. It will set its use aside, or degenerate."— *August Ford, M. D.*

"Alcohol is physiologically and psychologically not the friend, but the enemy of man, undermining his bodily structure, diminishing his health, impairing his muscular activity and capacity, and, more than all, shortening life. The tendency of alcohol is to be a body destroyer and a brain beguiler."— *Norman Kerr, M. D., F. L. S.*

How Cranberries Grow.

One of the notable successes of 1901, says *Success,* was the cranberry industry. When the last of the yield was picked, an aggregate of one million bushels was reached. By comparing this with the yield of 1900, five hundred and sixty-nine thousand bushels, the success stands revealed.

Of the millions who enjoy this tart berry, few know how it is cultivated. The berries are grown in bogs that cost from three hundred to five hundred dollars an acre. The soil in which they flourish is composed of peat and clean, sharp sand, the latter being absolutely essential to healthy growth.

The bush on which the berries appear grows about six inches high, and every year it puts out "runners" that, in turn, take root and form new bushes; so that, when a bog first becomes productive, five years from the time of its beginning, it is thickly covered with bushes.

The picking process is a simple one. It consists of placing the fingers, slightly spread, beneath a bush, and then, by an upward movement, raking the bush clean of its fruit. By means of a winnowing machine, the berries are freed from dirt and leaves. New York City, alone, consumes two hundred and fifty thousand bushels of cranberries every Christmas season.

EDITORIAL.

HIGH LIVING AND DEGENERACY.

Observing physicians have called attention to the fact that cancer and other diseases resulting from degeneration are rapidly increasing, and the point especially noted is, that the increase is not so much among the laboring classes as among wealthy people, especially those who live luxuriously. Cancer is almost entirely unknown among wild anin als and savages; it is a disease of civilization. The same may be said to be true of Bright's disease of the kidneys, cirrhosis of the liver, apoplexy, and arteriosclerosis, or hardening of the arteries.

These degenerations are, without doubt, the result of a general weakening of the resistance of the body, which is the natural result of the violation of those laws of health that are necessary for the maintenance of a high degree of physical vigor. Probably no one thing tends so much to the breakdown of the bodily powers as errors in diet. The habitual feasting and gormandizing which prevails to such an astonishing extent among the so-called better classes is unquestionably responsible for the great falling off in longevity, and the rapid increase of chronic maladies of a deadly character among this class of the population.

The simple fare of the laboring man is a blessing to him. While the luxurious diet of the wealthy gormand affords temporary pleasure, it hides beneath the palate, in tempting viands, a scimiter which strikes deep into his vitals, and brings the culprit to nature's judgment bar for punishment.

A lesson of vital importance which civilized men and women are only just beginning to learn, is, that food was not, in the divine order, intended to be merely a source of pleasure to the body, a tickle to the palate, or even a satisfaction to the stomach, but that its prime object and essential purpose is to furnish a store of energy necessary to enable the bodily engine to do its work,— in other words, to maintain the vital stream which perpetually flows in and out of the body as a river flows between its banks.

Probably the majority of people eat what is convenient to the hand or to the palate. The savage builds his home on the same principle,— of sod, mud, straw, twigs,— whatever material he finds most convenient. When the savage becomes civilized, he builds his hut with greater care. Having ceased to wander about, he requires a more enduring habitat, so he gathers together the best material he can afford,— granite from the mountains, iron from the mines, and hard wood from the forest. He fits these expensive materials together with the greatest care, so that the wind, the rain, and the snow may not wear out and demolish his dwelling-place before it has served its purpose; in other words, he so constructs his house that it shall be able to resist the ravages of time and weather for as long a period as possible. The sort of house he builds is one of the most distinctive characteristics of the civilized man as opposed to the savage man.

May we not reasonably inquire, "Why should not the civilized man exercise the same incessant care in selecting the material out of which to build the living temple which we call the body, as in building the temporary shelter which he calls his house?" It may be replied that the civilized man certainly does exercise great solicitude, and spends enormous sums in the procuring of food to supply his table. But the greater part of his solicitude, unfortunately, is exercised from a wrong standpoint. The question with the aver-

age man is not, "What is good?" but rather, "What tastes good?" "What will please the palate?" One might just as well build his house out of materials pleasing to the eye, but without reference to its durability, as to build his body out of materials pleasing to his palate without reference to their qualities as body-builders and energy-producers.

It is probable that the majority of men and women who dwell in houses of their own, have given far more thought and attention to the question of house building than they have ever given to the infinitely more important question of body building. The attitude of mind, with multitudes, in reference to the matter of eating, is, "Let us eat, drink, and be merry," forgetting the thought which naturally follows, "for to-morrow we die." "A short life, and a merry one," is a popular modern adage which contains in itself the confession of the recognition of the relation between a merry life or rather, a life of self-gratification, and brevity of years. If one would live long, he must eat well, he must live high in the true sense; that is, he must live in harmony with high principle, in accordance with the divine order; he must recognize the fact that the stomach is the fountain head of energy to the body, and that an unhealthy stomach may become likewise the fountain head of disease of every kind and in every tissue.

FLESH FOODS A SECOND-HAND DIETARY.

THE popular idea prevails that some of the important products of the vegetable kingdom are refined or purified by passing through the stomach of an animal, so the flesh foods are more perfectly adapted to supply the needs of the human body than are the products of the vegetable kingdom. But this is an error recognized by every physiologist. The vegetable builds up, while the animal tears down; the vegetable stores energy, while the animal expends energy. The work of the vegetable is to store energy and to build living substance; there is no waste, no excreta, and hence no need for eliminative organs. There is nothing in the vegetable which corresponds to the kidneys or the liver in human beings. In corn, wheat, fruits, nuts, and other vegetable foods, energy-containing material is presented in the purest state, uncontaminated by the poisons which naturally result from the activities of animal life, and which are generated in every animal form in such abundance that special organs, such as the skin, liver, lungs, and stomach, are required to maintain constant activity, and to remove from the body the flood of poisons continually poured into the blood from the tissues, and which destroy life in a few minutes if retained.

It is thus apparent that the ear of corn is better prepared to furnish energy and life to the eater when taken straight from the hand of nature, than after it has been swallowed by a pig and rolled about in the mud for a month or more. An eminent English authority on dietetics, Dr. Robert Hutchinson, Professor in the London Hospital and Medical College, and a physician of recognized high standing, has recently published an exhaustive work on "Food and Dietetics" in which he discusses at some length the food value of nuts and nut products. We note that the distinguished author has made an appreciative study of nut butter, nuttolene, bromose, and other products devised and manufactured by the Sanitas Nut Food Company. We take pleasure in quoting the Professor's remarks as follows: —

"The differences in the mode of feeding of animals and plants respectively are well summed up in the saying of an eminent French physiologist, that in the main animals are *analytical*, and plants are *synthetical*, feeders. And seeing that this is the case, seeing that animals must have complex compounds as their nutriment, and that these can only be derived either from vegetables or from the flesh of other animals,

it follows that the former must be a much cheaper source of supply than the latter. The difference is exactly the same as between dealing with a manufacturer direct and through the medium of a middle-man. In converting vegetable compounds into flesh, an animal takes toll of them. It has its commission, which must be paid by the individual who consumes the flesh, and by the community. That the commission amounts to a considerable percentage of the original vegetable food is not open to dispute. 'It is not extravagant to say,' writes one author, 'that every acre well cultivated would feed seven times as many men by its crops as could be fed on the flesh of cattle which do but graze on its spontaneous grasses;' and the same writer asserts that it has been found in a vast pig butchery at Cincinnati that the oatmeal used in fattening the pigs would have gone nearly four times as far as the pork produced went in feeding mankind. Another investigator has calculated that two and one-half acres devoted to the production of mutton will support one man a year, while the wheat grown on the same area would support sixteen men. Without committing ourselves to the literal correctness of such calculations, we may yet believe that they are a close approximation to the truth, and the economic questions which they suggest are of far-reaching national importance.

"It will be observed that fatty matter predominates very largely in the composition of nuts. No other vegetable substance is so rich in fats as these. Advantage has been taken of this to prepare from nuts various fatty preparations which are used as cheap and efficient substitutes for ordinary butter in the kitchen. 'Nut Butter' and 'Nuttolene' contain proteid as well as fat, and are therefore to be compared to cream rather than to ordinary butter.

"Unfortunately, nuts are not readily digested in the stomach. This is due in part to their richness in fat, and partly also to their containing a high proportion of cellulose, which forms a dense and compact framework throughout the structure of the nut. By thorough mastication, the latter difficulty can be overcome to some extent, but it is still more efficiently dealt with by artificial grinding and cooking. Various preparations derived from nuts, in which this mechanical cause of difficulty in their digestion has been to a large extent overcome, are now in the market. Best known of these are 'Fromm's Extract,' and the various preparations of the Sanitas Nut Food Co. ('Nuttose,' 'Bromose,' 'Nut meal,' etc.).

"The nutritive value of nuts is no doubt extremely high, and when suitably prepared they may form substitutes for meat to a considerable extent, for they resemble the latter in containing much proteid and fat in small bulk. Thirty large walnuts (weighing, without the shells, 100 grams) would contain as much fat as two and three-fourths pounds of moderately lean beef, but two and three-fifths ounces of such beef would be equal to them in proteid. It would be necessary to consume about seven hundred walnuts in order to obtain the necessary amount of proteid required by the body every day.

"The almond is another very valuable form of nut, being specially noteworthy for the large amount of nitrogenous matter which it contains. It has the further advantage of being compact and portable. 'No man,' it has been said, 'need starve on a journey who can fill his waistcoat pocket with almonds' (Newman)."

Danger in Vaccination.

Probably vaccination is looked upon by the majority of people as a very trifling matter, but that it may become dangerous is evidenced by the death of seven out of nine children vaccinated in a New Jersey town, the cause of death being tetanus. Whether the tetanus was derived from the vaccine or from the skins of the victims is not known, and probably never will be. Vaccination at the best is inoculation of the body with toxic elements. Unless the

nicest care is taken in the preparation of the vaccine material, and in its application, blood poisoning may occur in any case. Vaccine points are often infected with germs capable of producing the most dangerous forms of blood poisoning, and not infrequently the operation of vaccination is performed without any proper attention to asepsis. The real wonder is that immediate serious results are not more often seen.

ANSWERS TO CORRESPONDENTS.

Vapor Bath.—C. M. D., Canada, asks the proper treatment for a delicate person to follow on coming out of a vapor bath. The patient has nervous rheumatism.

Ans.—The patient should lie upon a couch, wrapped in a Turkish sheet, and should be cooled off by means of a cold towel rub, or, if strong enough, the wet-sheet rub may be employed, applied when the patient is standing.

Foods — Water. — M. M., New York: "1. What is the cause and remedy for the following symptoms, which appeared on the adoption of a nut health food, and fruit dietary a year ago: Loss in weight, gases in the bowels, and a tired feeling? 2. Is a small saucer of granuts, two granose biscuits, one piece zwieback, one apple, and some protose or malted nuts sufficient for one meal, when three meals daily are taken? 3. Can any one suffering with dilatation of the stomach eat with impunity almond meal, nut meal, salted nut butter, ripe bananas, cup custard, and pea soup? 4. Is a one-meal, two-meal, or three-meal system the best for such a person, who is weak? 5. Can the water of Staten Island be used for drinking purposes without boiling?"

Ans.—1. It is evident that the nutrition is insufficient; the case should have a careful investigation, and the cause be discovered and removed. Disuse of meat is not the sum total of dietetic reform, from the standpoint of digestion and nutrition, — in fact, there are other changes in diet much more important for the average individual than the simple disuse of meat.

2. No.

3. Such combinations would be likely to produce indigestion, gas in the bowels, and various other disturbances. Persons suffering from dilatation of the stomach require dry foods, such as granose flakes and toasted wheat flakes, zwieback, and granose biscuit. These should be eaten slowly, so as to secure thorough mastication. Ripe bananas may be eaten with a dry food, but they must be very thoroughly masticated. Pea soups and other liquid foods should be avoided. Malt-honey candy and bromose should be used in place of sugar.

4. Two meals a day will be found most satisfactory.

5. It is never wise to use water obtained from a public water supply, without boiling, unless it is known that the water is obtained from artesian wells.

Bovinine. — Mrs. P. W., Wyoming, asks what the result of the long-continued use of Bovinine will be.

Ans. — Probably the same as the long-continued use of beef extract, or the habitual drinking of blood. The Bible strictly forbids the use of blood as a food, — "But flesh, with the life thereof, which is the blood thereof, shall ye not eat." Gen. 9 : 4. This command was given to Noah, and was, of course, binding upon all men. The same command was repeated, as binding upon the world, in the Christian dispensation, by the apostles and the elders of the primitive Christian church at Jerusalem. Acts 15 : 29. This divine command to abstain from blood was, without doubt, based upon a physiological foundation which is found in the fact that the blood not only supplies the tissues with food substances, but also washes away the poisonous matters which result from the wear and tear of bodily work, and hence always contains poisons in a considerable amount. From a physiological as well as from a Bible standpoint, the use of blood as a food must be regarded as in the highest degree objectionable. There are other food substances which are in every way superior to blood, for all the conditions for which "Bovinine" and similar substances are recommended. Here are a few: buttermilk, kumyss, grape juice, white of egg dissolved in water, malted nuts, malt honey, and fruit soup. Many of these foods contain a far larger amount of nourishment than does "Bovinine" or any like substances, and are entirely free from the excretory or poisonous substances which are found in these preparations. An eminent London professor recently expressed his views respecting meat extracts and similar preparations, in a very forcible way. One of these preparations is widely advertised in London by means of a picture which represents a huge ox and a cup placed beside it. Underneath is a statement to the effect that "the cup holds the ox," evidently intending to convey the impression that the

preparation represents the most concentrated nutriment. Referring to this preparation, the professor remarked, "A more correct statement would be, 'The urine of the ox is in the cup,' which is a scientific fact. It is high time that the widely prevalent errors respecting the food value of meat extracts, meat juices, blood, etc., should be removed by a presentation entific facts."

Neuralgia—Pain in the Neck—Cough.—N. E. P. asks: "1. Can neuralgia of the nerves leading from the spine be cured? 2. What is the cause of pain in the back of the neck and just below the shoulder blades? 3. Please give advice for a cough brought on by every cold. The person expectorates white mucus."

Ans.—1. Yes.

2. The real cause is probably an irritated condition of the solar plexus which may be the result of a prolapsed stomach, or of indigestion.

3. Avoid taking cold. When cold is contracted, take a warm bath. Apply a towel wrung out of cold water, and cover well with flannel, after which the patient should go to bed. Drink a glass of hot water every hour; eat fruit only, for two days, taking in the meantime a cold towel rub two or three times a day, taking care to avoid a general chilling of the surface, and keep the feet warm. Use a pocket vaporizer.

Underwear—Watermelon.—S. H., Indiana: "1. What kind of clothing should be worn next the body, and how often should it be changed? 2. Is watermelon healthful?"

Ans.—1. Linen; it should be changed twice a week.

2. A healthful drink, but the pulp should not be eaten.

Cough—Pain in the Head—Hypopepsia.—S. S. W., Kansas: "1. Why should lying on the back cause coughing? 2. Why should one's head become sore when he lies flat on his back? 3. What is the proper diet in hypopepsia? 4. What foods must be avoided?"

Ans.—1. n this particular case there must be some special cause, perhaps enlarged tonsils, or mouth breathing.

2. The soreness may be due to the pressure caused by the whole weight of the head resting upon a small portion of the scalp at the back part. Further data are needed for fuller explanation.

3. The following classification is recommended in cases of hypopepsia: granola, gluten-nut and gluten-cream porridges; oasted wafers, rolls, sticks, or wieback; granose or granola, toasted; prune or nut-gravy toasts; nut- or cream-rice puddings; roasted rice with prune sauce; corn pulp; kumyzoon or kumyss; purées of sweet fruits; prunes, figs, raisins.

4. Porous vegetables, fats, cane sugar, fried foods, pickles, and all sorts of indigestible foods; also flesh meats, fish, fowl, cheese, and in many cases, milk.

Papaws—Arrowroot—Tapioca—Grapes.—E. W. D., Ohio: "1. What is your opinion of papaws as food? Do they cause sore mouth, sore throat, or diphtheria, as is popularly believed? 2. What is the food value and healthfulness of arrowroot, tapioca, and grapes? How should they be prepared for eating?"

Ans.—1. Fruit is wholesome, though not liked by all. Fruits are not productive of disease.

2. The difference in value of the foods mentioned is as follows: Arrowroot, 82; tapioca, 85; grapes, 15.4. It should be remembered, however, that arrowroot and tapioca are practically pure starch, and hence cannot be considered as complete foods. When used as foods, they should be combined with substances containing food and albumin in abundance.

Diet in High Altitudes.—W. N., Colorado: "1. How can a man live so as to be healthy at an altitude of 10,000 feet? What foods would be best to use?"

Ans.—The man who has an opportunity to live at an altitude of 10,000 feet has an exceptionally good opportunity to enjoy excellent health and prolonged life. He only needs to exercise reason and judgment in the selection of his foods, and to avoid violent exercise. A well-selected dietary, consisting of fruits, grains, and nuts, is as wel suited to life in an elevated region as to all other conditions.

Erysipelas—Muscle Developer—Circulation—Steam Baths.—G. P.: "1. What treatment is best for erysipelas? 2. What is the quickest method to develop the muscles? 3. Is going up and down stairs injurious? 4. What will remedy a poor circulation? 5. Are steam baths better than cold-water baths for this condition?"

Ans.—1. Rest in bed, wet-sheet packs, cool enemas to reduce the fever, continuous cold compresses over the inflamed parts, to be withdrawn and replaced by a fomentation for two or three hours.

2. Systematic use of he muscles to their full capacity every day.

3. No; it is a healthful exercise, if the body is held erect. One should avoid running up stairs, or ascending so rapidly as to put himself out of breath. Remember that in ascending stairs one is lifting his body through the distance climbed. In climbing stairs, one ordinarily does nearly twenty times the

amount of work required to walk the same distance on a level surface in the same length of time.

4. The term "poor circulation" is generally applied to the condition in which the hands and feet or the greater portion of the limbs is cold. This condition, however, is rarely due to weakness of the heart or any other part of the circulatory system; the real cause is spasm of the blood vessels of the cold parts. This spasm is the result of irritation of the vasomotor centers of the spinal cord, which is induced by a congested or irritated condition of the abdominal sympathetic nerve. The most common causes of this irritation are indigestion and a prolapsed state of the stomach and bowels or other viscera. Many persons have observed that the hands and feet are warm as long as they remain in a horizontal position, but as soon as they rise and begin to take exercise of any sort, the feet and hands become cold. In such cases the disorder is due to prolapse of the viscera which results in tension of the sympathetic nerves and reflex irritation affecting the blood vessels. The proper remedies are, of course, to relieve the indigestion, when it exists, by a proper dietary, the daily cool bath, etc. The visceral prolapse should be cured by the application of an abdominal supporter; the Natural Abdominal Supporter is best for this purpose. The spasm of the blood vessels may be temporarily relieved by rubbing with towels wet in cold water, by the running cold foot bath, or by massage. Steam baths or hot-water baths, when used in moderation, may be found beneficial in this condition, by removing poisons from the system in cases in which the autointoxication exists from the accumulation of uric acid and other systemic poisons.

Gastric Catarrh.—J. A. B., Utah: "1. Is a fruit diet one day in the week to be recommended in gastric catarrh? 2. Is the following a satisfactory diet in such a case: Fruit only for breakfast; for dinner, two granose biscuits, a little zwieback, two or three bromose tablets, protose, or malted nuts; and for supper only fruit? 3. Would this diet produce flesh? 4. What other foods do you advise? 5. Is bread made of all-graham flour suitable for one with apparently good digestion? 6. Do you advise peanut butter? 7. If protose is vegetable meat, does it combine well with fruit? 8. Is orange juice beneficial in gastric catarrh? 9. Why should the throat and tongue become dry and stiff after eating granose biscuit or bromose or zwieback? 10. Do you still recommend the hygiene of pregnancy, together with health foods, as outlined in 'Ladies' Guide'?"

Ans.—1. Yes, if indicated by a foul tongue, a lack of appetite, and other indications of gastric infection. In many cases of gastric catarrh, however, strongly acid fruits must be avoided.

2. The amount of food mentioned is not sufficient to sustain a vigorous person who is leading an active life.

3. No, unless the amount of protose and malted nuts consumed was quite large.

4. Toasted wheat flakes, browned rice, corn pulp, malt honey, food-candy, nuttolene, and many other wholesome and easily digested foods may be taken without injury, if care is taken to secure thorough mastication.

5. Yes.

6. Peanut butter is a wholesome food for those who are able to eat peanuts prepared in the ordinary way, and can be well digested by many who cannot digest peanuts in any other form. Butter prepared from roasted peanuts is not an entirely wholesome food. Better prepare them by cooking or steaming.

7. Yes.

8. Yes, in cases in which the stomach is not so irritable that the small amount of citric acid in an orange produces pain or other disturbances.

9. We have never met such a case, and can see no reason for the result indicated.

10. Yes.

Peanuts.—F. K. M., writes: Please state (1) if, when ground well, peanuts cannot be cooked in less time by baking than by boiling; (2) how it can be determined when they are thoroughly cooked; (3) what is the difference between roasted peanuts and those that are baked?"

Ans.—1. The time may be shortened by baking, but boiling is the better method.

2. By the flavor.

3. In the baking of peanuts referred to in the rules on hygienic cookery, the nuts which have been previously boiled, are put, while in a moist state, in a deep dish, and placed in an oven for a sufficient length of time to secure thorough cooking, but without drying the mass. As long as the material remains moist, it cannot reach a temperature much higher than 212°.

Electricity.—R. W. T., New York, asks (1) if electricity applied to the eye or to other parts of the body by a medical battery is helpful; (2) if it is safe to use it without the advice of a physician.

Ans.—1. Yes, if the remedy is appropriately employed.

2. It can hardly be said that the use of electricity by means of an ordinary medical battery can be considered dangerous, even though applied in the most bungling manner; the worst effects likely to be produced would be a slight soreness of the affected parts. No permanent or serious injury could be done, even by a considerable overdose. Applications of this sort should be left to physicians or specially trained persons.

LITERARY NOTICES.

Since Bellamy's "Looking Backward" was published, there has been no such interesting social prophecy as Prof. J. B. Clark's paper in the January **Atlantic.** Its title is "Recollections of the Twentieth Century." It is supposed to be an address delivered at a meeting of the New York Historical Society a hundred years hence, in celebration of the advent of the twenty-first century. Professor Clark, who is one of the first authorities upon questions relating to organized capital and organized labor, takes an optimistic view of the economic development of the next hundred years. Labor leaders and capitalists alike will be interested in his program for the reconciliation of forces which are just now in bitter opposition to each other. There are good times coming for us all, Professor Clark believes, and the more we see of the twentieth century, the better we shall like it.

Readers of **"The Twentieth Century City,"** an eighty-page booklet, containing the proceedings of the annual convention of the American League of Civic Improvement, held at Buffalo, in August, 1901, are surprised at the magnitude and scope of the work included in the term "civic improvement." A pamphlet of unusually practical and interesting suggestions, not the least important of which is that of the arrangement of a model city, life-size, at the St. Louis Exposition. A novel object lesson, surely. This report should be in the hands of every lover of home and civic beauty, and may ined by addressing The American League for Civic Improvement, Springfield, Ohio, with an inclosure of fifteen cents in stamps.

The January issue of **Success** contains a number of up-to-date, timely subjects, indicating the world's achievements and progress. Evelyn B. Baldwin wr es of his certainty of success in reaching the long-sought-for North Pole, next summer. His dauntless courage, and that of the forty-one young explorers with him, certainly merit reward. In his article on "The World's Richest School and Its Purpose," Beauford A. Mason gives some idea of the magnitude and aim of that latest o Andrew Carnegie's philanthropic schemes —the new Polytechnic School in Pittsburg, Pa., or young workingmen.

Gems of Thought, a dainty little booklet which comes to the editorial desk this month, is just what its name indicates. It contains seventy or eighty quotations of best thoughts from best authors, and is prettily gotten up in green, gold, and white. It makes an ideal gift book. Copies of "Gems of Thought" may be had by addressing Henry B. Damon, South Lancaster, Mass. Price 25 cents each, 6 for $1, postpaid.

The January number of the **New England Magazine** has its usual quota of good things. An interesting biographical sketch of "Emma Willard —a Pioneer of Education for Women," a finely illustrated article on "The Lumber Industry in Maine," and a historical sketch of "The Governors of Massachusetts," the first of a series on this topic, by Alfred S. Roe, help to make up a very interesting number of this popular magazine.

Good Housekeeping for January, with a special New Year's cover, a new and very useful department introduced, and new ideas scattered throughout its pages, gives a hint of the brightness and "go" which promise to characterize this favorite magazine during 1902. A unique feature o the new department is a breakfast whose nutritive value is pictured in diagrams. Mrs. George Cornwallis-West, in an interview, speaks wisely and brightly of "Dress as An Educational Factor." Prof. H. W. Wiley, the head of the federal bureau of chemistry, writes of the dangers of formaldehyde as a preservative. There is a handsomely illustrated article on "Where to Find Russian Coppers," and one on "An Ideal Nursery and Its Teachings." "The Dangers of Palmistry" are clearly sounded, and the need of domestic science in women's colleges discussed by notable men and women.

The Missionary Review of the World is a unique periodical, being without denominational or sectional bias. It gives a broad and picturesque survey of the whole world of Christian missionary work. The January number is remarkably varied and interesting. Dr. Pierson contributes an able article entitled, "Lo, I am with you alway," while the round-table discussion on foreign countries is an exceedingly lucid and impressive presentation of facts. A number of short articles on important missionary topics make up an exceedingly interesting number.

The January number of **The Household** gives indication that its publishers intend to make it one of the brightest and most interesting magazines of the year. The frontispiece is the fourth of a series of pictures suggested by old familiar songs, and drawn for The Household by Eliot Keen. One can almost enter into the "airy, fairy castle" dream to which the young mother is abandoning herself as she leans against the baby's crib.

Recent wars have revealed the weaknesses of many of the great European armies, and in the January **Scribner's** there is an article discussing the usefulness of military parades as part of the training of a soldier.

One of the questions which Mr. Frank A. Vanderlip, ex-Secretary of the American Treasury, suggests and discusses in his article on the "American Invasion" of Europe, in this number, is: If we go on selling to Europe $600,000,000 a year more than we buy, how will Europe settle this great trade balance?" The author ound that every financial minister of Europe, and the head of every imperial bank, was exercised over this serious problem.

One of the most interesting illustrated articles in **The Chautauquan** for January is "In Virgil' Italy," by Prof. Frank J. Miller, of the Chicago University; while Prof. Paul S. Reinsch of the University of Wisconsin discusses a breezy topic in "The Merchant Marine of the World." The story of its growth to its present magnitude is one that compels attention.

A very notable paper, the first of a series, is Mr. George Washburn Smalley's personal recollections of "English Statesmen and Rulers," in the January issue of **McClure's Magazine.** Mr. Smalley was for many years the chief American newspaper correspondent abroad, and knew well most of the great men and women of his day. In this paper he writes of Roseberry, Arthur Balfour, Sir Henry Campbell Bannerman, H. H. Asquith, and Sir Edward Grey, discussing not their politics, but their personal qualities and social charm.

"Telegraph Talks and Talkers," by L. C. Hall, is a fascinating revelation of some of the mysteries of the Morse language of dots and dashes, by an old telegrapher, chock-full of all sorts of apt anecdotes of the wire, unquestionably a great "find" for any magazine.

Cyrus Townsend Brady writes a splendid account of David Crockett and the immortal defense of the Alamo; Cleveland Moffet tells of his explorations "In and Around the Great Pyramid;" Robert Barr recounts another adventure of his captivating hero, James V, of Scotland, and James Barnes has a rattling story of the Boer War. Two short poems, "Individualism," by William H. Hayne, and "Magic of the Past," by Paul Kester, complete the number.

PUBLISHERS' DEPARTMENT.

GOOD HEALTH

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J. H. KELLOGG, M. D., Editor

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BIBLE NATURE STUDIES.

THE first edition of Professor Cady's "Bible Nature Studies" consisted of one thousand copies. This has long since been exhausted, and the revised work may now be ordered. The new form of this work is much more convenient than that of the first edition. Page and type are the same as those of "Christ's Object Lessons," but the book has between five and six hundred pages. In all there are two hundred and sixty lessons, covering

the different phases of creation as mentioned in the first chapter of Genesis. The constant aim of the author is to exalt the creator through his creation.

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Those desiring copies of this book should address the author, M. E. Cady, President of Healdsburg College, Healdsburg, Cal.

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NOTICE.

WE stand in need of about fifty copies of the April number of Good Health of '99. Any subscriber sending us one of the above will receive in return for it, *two* copies of the recently issued Midwinter number for 1902. Please send in at once.

NOT exactly the right word, but a very expressive one, was that used by a dilatory witness, a woman, who, says the Kansas City *Journal*, was brought by the sheriff before District Judge Thompson at Westmoreland.

"What reason, madam," said the judge, severely, "have you for not obeying the summons of the court?"

"I ain't got none, Mr. Judge, only we have smallpox down at our house, an' I thought you might be kinder sorter prejudiced agin it."

The judge was "kinder sorter" prejudiced, and the spectators must have been more so, to judge by the quickness with which the court room was emptied.— *Youth's Companion.*

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