

A

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OF

HEALTH



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A BOOK ON AN ORIGINAL PLAN.

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THE COMPENDIUM OF HEALTH.

A POPULAR TREATISE PERTAINING TO THE
PHYSICAL LIFE OF MAN

AND THE

ANIMALS WHICH SERVE HIM,

INCLUDING

THE HORSE, OX, SHEEP, HOG, DOG, CAT, POULTRY
AND CAGE BIRDS:

EMBRACING

ANATOMY, PHYSIOLOGY, AND HYGIENE;

*The Prevention and Cure of Disease; The peculiar Functions
and Disorders of the Maid, Wife, Mother and Babe;
The Nursing of Children and the Sick; Acci-
dents, Injuries and Poisons; The Care
and Improvement of Domestic
Animals, etc., etc.*

BY EDWIN M. HALE, M. D.,

*Late Professor of Materia Medica and Therapeutics, Chicago; Au-
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tics of new Remedies;" "Diseases of Women;" "Lectures on Dis-
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etc.; Member of Medical Institutes and Academies of America;
Honorary Member of State Medical Societies of New York,
Massachusetts, Michigan, Illinois, Wisconsin, Indiana and
Iowa, and of the Medical Society of the United States of Colom-
bia, South America; Corresponding Member of the Massachu-
setts Surgical and Gynecological Society, etc., etc.,*

AND

CHARLES A. WILLIAMS, M. D.,

Assisted by Specialists in the Various Departments.

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Aside from the wide range of subjects which is presented in this work, its high character may be seen from the reputation and well known ability of

THE AUTHORS:

DR. HALE has a fame on two continents as a Writer and Professor of Medicine, and DR. WILLIAMS a reputation for success in a wide practice, which both have had a pride in sustaining by insuring for this book an *Intrinsic Merit* which would pass the scrutiny of even professional men as an embodiment of rational home treatment, based upon the latest researches.

DR. F. H. FOSTER, Eye and Ear Surgeon, Chicago, and oculist to the Half-Orphan Asylum of the same city, is the author of the very excellent parts devoted to the *Eye* and *Ear*.

A LADY PHYSICIAN of Chicago, late of New York City, writes on the *Maiden, Wife, Mother* and *Babe*.

L. F. CAGWIN, ESQ., of Joliet, Ill., a life-long admirer and student of *The Horse*, writes the Introduction to Part II, which is devoted to that animal, and contributes a dozen original line-drawings, from life.

ARNOLD BURGESS, A. M., late Editor of the "*American Sportsman*," and Author of "*The American Kennel and Sporting Field*," contributes the Introduction, with Frontispiece, to Part VI, which relates to *The Dog*. The Section on *The Cat* is by DR. HALE, the Editor-in-chief.

H. H. STODDARD, ESQ., of Hartford, Conn., EDITOR of "*The Poultry World*," "*The Poultry Post*," and "*The American Poultry-Yard*," and AUTHOR of "*How to Feed Fowls*," "*How to Win Poultry Prizes*," "*An Egg Farm*," etc., etc., is the author of that which pertains to *Poultry*.

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It will readily be seen from the above description of THE COMPENDIUM OF HEALTH, that the book is one of sterling merit, and embraces a *range of subjects* so varied as to supply a universal demand. The Part devoted to the Life and Health of **Man**, is not only full and complete in itself, possessing all the value belonging to the best of books on domestic medical treatment, with much additional matter, but the care and health of the **Domestic Animals** are separately and skillfully treated, thus combining in one volume information of the highest importance, appealing forcibly to *all classes of people*. Having **something for all**, the agent will find in any field a responsive public, ready to buy that which is of such easily demonstrated value.

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MEDICINE.

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THE DOMESTIC ANIMALS, ETC., ETC.

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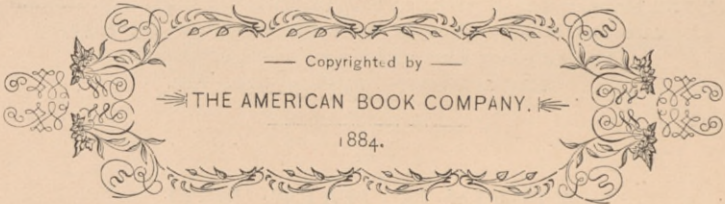
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COMPENDIUM OF HEALTH.

PART I.

MAN AND HIS DISEASES.

CHAPTER I.

THE FRAME-WORK OF THE BODY.

GENERAL REMARKS.

THE writer or lecturer on the human body is often surprised to learn how vague a knowledge the general reader or hearer has of his own wonderful mechanism. Though many talk familiarly of the organs upon whose constant action life itself depends, though they may be reasonably intelligent as to the promotion and maintenance of general health, there is a remarkable lack of information with reference, not only to the structure and offices of the parts of the human economy, but also to their general appearance, and even their location.

The authors of the present work, conscious of the proneness of writers to presume too much upon the reader's knowledge of subjects so familiar to themselves, will take pains, by description and illustration, to present a clear picture of the several parts of the body before advancing to the treatment of their diseases. Experience has shown that it is much easier to induce a patient to take needed treatment when he can see rational physiological reasons therefor, than when he is to act under the bare direction of a physician. The imparting of a clear outline of the main facts of anatomy and physiology is an important step toward the successful treatment of a patient. It is therefore sincerely hoped that this part of the book will be of great service to the profession, as well as in self-treatment.



4. THE MUSCLES.

CHAPTER II.

SIGNS OF HEALTH AND DISEASE.

TO get a rational view of the treatment of the diseases which we are now approaching, it is necessary to know something of the normal condition of the body, and to be able to recognize the signs which indicate a departure from the same.

The symptoms of disease are of two kinds, those which are known to the sufferer, consisting of pain and distress, and those which are seen by the observer, such as physical changes in the patient, or the functions of the body. The latter field is the more important to the general reader, and comes within the special domain of domestic medicine. It is through these manifestations that we are able to form a clear idea of the ailments of young children and animals in particular, and to successfully treat their many disorders.

The most important points in detecting different morbid conditions are the color of the skin, the general appearance of the face, the temperature of the body, the condition of the tongue and eyes, the pulse, the breathing, thirst, appetite, and the excretions from the bladder and bowels.

THE FACE.

The color of the face is often quite an important sign, and aids much in detecting and locating disease.

Unusual redness indicates an inflammatory condition, and is noticeable in inflammations of the brain, apoplexy, certain eruptive diseases, and various fevers. When the redness is circumscribed, presenting a circular red spot on the cheek, it indicates a lung complication. In inflammation of the lungs, this spot is on the cheek corresponding to the side affected; in hectic fever, occurring during consumption or other exhausting diseases, on one or both cheeks.

Extreme paleness is due to loss of blood, dropsy, or a scrofulous state of the system, and is present in various low fevers.

In some diseases of the heart, apoplexy, congestion of the lungs, and the last stage of cholera, the face becomes livid.

Diseases of the liver, or obstructions in its various ducts, give a yellow or brown appearance to the skin.

THE TEMPERATURE.

The temperature of the skin and body is of great value as a sign of disease. Nature has so adapted the various functions of the animal economy that the temperature of each species is the same in all portions of the globe. The Greenlander has the same temperature as the man at the equator.

In man, the mean or average heat of the body is placed at $98\frac{3}{8}^{\circ}\text{F.}$, or what is known as blood heat, and any considerable change from this standard is an indication of some disorder of the system. The temperature is higher in all acute inflammatory diseases and fevers. It is lower than normal in many chronic diseases, and then indicates debility and a low state of the system. The lower temperature is also found in certain brain disorders and the collapse of cholera.

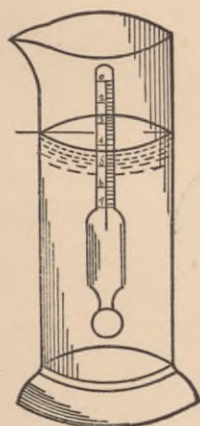
The best instrument for determining the temperature of the body is the clinical or fever thermometer. Since this valuable instrument has been in common use, it has done much toward the early and correct detection and location of disease. Sometimes the surface of the body feels cool to the touch, from imperfect circulation in the part, or from a low state of the system, as in consumption, and there is no evidence of fever except in the palms of the hands, or on the soles of the feet; but when the thermometer is held under the tongue, a marked elevation above the normal is noticed at once. This is a very important sign in consumption especially, and many times we are able to detect the deposit of tubercular matter in the lungs long before there is any evidence of this disease in the loss of flesh or cough. In well-ordered households thermometers are used for the regulation of the temperature of the air. It is of scarcely less importance that one of the clinical thermometers be in the house. Its use can be easily acquired, and will often be an invaluable aid.

The temperature is usually highest in the eruptive fevers, scarlet fever producing the greatest rise; if it should rise to 105° , it would indicate a severe form of the disease, and if 108° should be reached, a fatal termination would likely ensue.

Sometimes nervous diseases present indications of severe cerebral congestions, and when the thermometer is applied the temperature is found to be normal. On the other hand, hysterical patients may have severe congestion of the brain, and if the thermometer be not applied, and the increase of temperature noticed, the disorder may be mistaken for hysteria, and a fatal result follow.

the figure on its scale at the surface is 1000. The denser the fluid to be tested, the higher will be the figure which reaches the surface, and thus the specific gravity of a fluid can be accurately found. In Bright's Disease, the specific gravity is generally lower than normal, below 1015; but sometimes it is very high in certain stages, reaching even 1094. In the latter instance, if boiled, it curdles up like milk and the addition of a few drops of dilute nitric acid will cause a deposit in the bottom of a test-tube, of a grayish-white substance like the white of an egg cooked.

In diabetes, the urine has a specific gravity ranging from 1025 to 1040, is found in large quantities, sometimes several quarts in twenty-four hours, foams when voided, and has a sweetish smell. When one is passing a large quantity of urine, accompanied with great thirst, dryness of the skin and loss of flesh, he should consult a physician at once, detailing these symptoms.



S. URINOMETER.

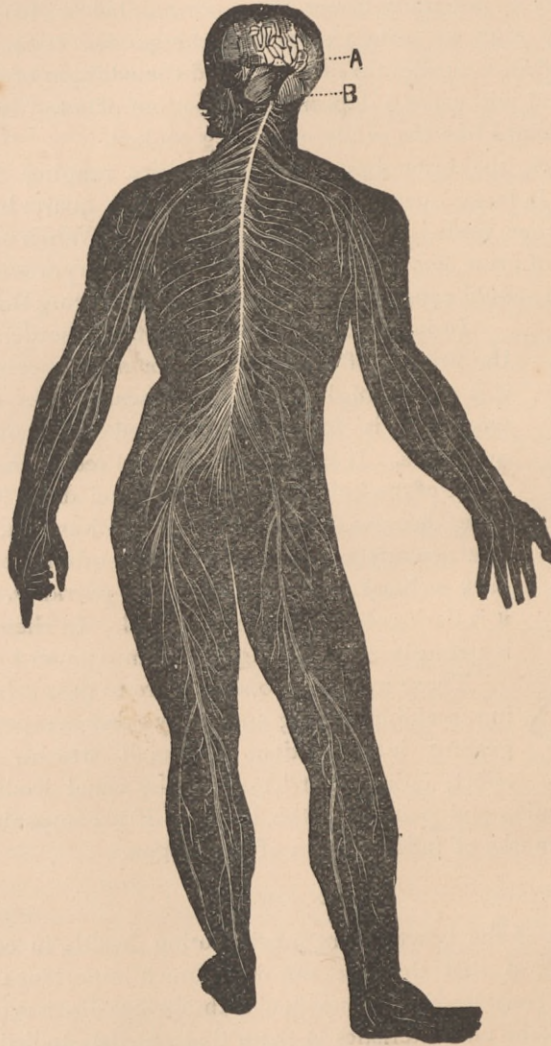
In jaundice, gall-stones, or other disorders of the liver, the urine is of a dark-yellow or saffron color. In fever, it is red, or high-colored, and scanty. In children with worms, it is milky, and passed quite often in small quantities. It may be bloody and red, or dark, in hemorrhage of the kidneys or bladder; and slimy in catarrhal or other diseases of these organs. In hysteria, it is copious, clear, colorless, and with a specific gravity of 1007. It is dark or black, with foul smell, in putridity. In old age, it is dark-colored, with rank smell. In rheumatic fever, it is strongly acid, turning blue litmus paper bright red.

There may be frequent desire to pass urine, with burning, scalding feeling and many other symptoms, all suggesting inflammation. A small stream, passed with effort, indicates stricture of the canal leading from the bladder. Irritation and pain over the bladder, if accompanied with heat and fever, are marks of inflammation of that organ.

THE BOWELS.

Excretions of the bowels vary much during health, in color, quantity and consistence, so that they are not of so much importance as the urine, unless they are considered in connection with obvious diseases of the system. Yet there are some characteristics in them that can be studied with profit.

Constipation results from inflammation, muscular debility, inaction of the lower intestines, general debility of the system, or deficient bile in the discharges. When it results from inflammation, there are severe pain, stiff feeling of the abdomen, and heat; when from muscular debility, there is a loss of expulsive power; in inaction of the intestines, there is a loss of the



THE NERVOUS SYSTEM.
A—Cerebrum. B—Cerebellum.

CHAPTER III.

THE NERVOUS SYSTEM.

ANATOMY AND PHYSIOLOGY.

IT is fitting that we should first give the structure and treatment of the nervous system, because its condition, as we shall soon learn, has such a marked influence upon all other parts of the body. There is also a peculiar interest in its study, because it is the medium for the wonderful phenomena of thought, feeling, and volition, whose possession and exercise give man the first place among created beings.

The substance of the whole nervous system is composed of two elements, distinguishable with the microscope: First, *nerve-fibers*, the *white substance*,

which are delicate white filaments, the smallest of which are but 1-10000 of an inch in diameter. These are arranged in parallel order, and combine to form the *nerves*, whose branches and trunks average about 1-2000 of an inch in diameter.

Second, *nerve-cells*, the *gray tissues*, a grayish, granular substance composed of minute cells, from 1-4000 to 1-300 of an inch in diameter. A collection or group of this substance is called a *nervous center*, or *ganglion*, and, wherever it is found, is intermingled with nerve-



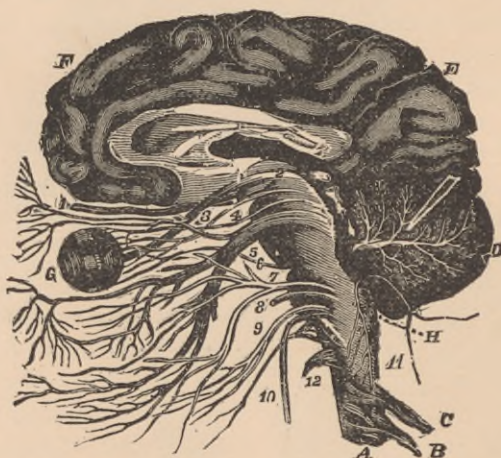
10. MAGNIFIED NERVE-GANGLION, FROM A CAT.

fibers. Many of the cells have little branches which unite with the fibers. It is the office of the nerve-cells to *generate nervous power* at their centers, like a galvanic battery; the nerve-fibers, through their delicate lines, *transmit this power*.

It is of the greatest importance that the distinction between the two elements just named, and that between their offices, be clearly maintained.

vice versa. A like crossing takes place in the motor fibers when they reach the medulla oblongata. This will explain the singular fact that when one side of the brain is affected, as by paralysis, for example, the opposite side of the body suffers.

Besides the nerves which pass up to the brain, there are others which terminate in the spinal cord. If a foot or wing of a bird be pressed immediately after the head has been taken off, the limb will be drawn back, indicating the presence of some form of sensation. This must be unconscious, since the brain is removed; and it has been shown to have its seat in the spinal cord. This part of the nervous system thus exercises a general protection over the body, frequently making a defense before the brain has become cognizant of the presence of harm, as when one snatches his hand



14. SECTION OF THE BRAIN, WITH CRANIAL NERVES.

FE.—Cerebrum. *D*.—Cerebellum, divided vertically and showing the deep furrows as branches (the "arbor vitæ"). *H*.—Medulla Oblongata, merging into the Spinal Cord. *A*. *G*.—The Eye. *B*, *C*, *1*, *2*, etc.—Cranial Nerves.

from a hot or cold surface before he has felt the pain, or had any thought of it. There are many instances of such action of the involuntary muscles which might be adduced.

The Cranial Nerves, because of their locality, cannot be so well studied, and a description of these here can be of little practical value, except as it refers to the pneumogastric. Of the others, it may be said in general, that they are involved in smell, taste, sight and hearing, in muscular movements about the head and face, in the facial expression and complexion.

The pneumogastric, so-called from its close connection with the lungs and stomach, is very complicated, and of the highest importance. Fila-

SEA-SICKNESS.

This distressing disorder, caused by the motion of a vessel, is due to a disturbed state of the system in which the brain receives a deficient supply of blood. Those of delicate and sensitive organisms, with weak heart-action, quick pulse, and tendency to palpitation, are more often attacked, and such may be affected by the motion of steam or horse cars, carriages or swings.

The following rules, from Dr. Barker's excellent work, are so commendable and trustworthy, that they are deserving of mention, as applying to those who are certain or fearful of an attack. They are not, of course, designed for those who are proof against sea-sickness.

1. Do not go on the steamer in a nervous or exhausted condition; have every preparation made at least twenty-four hours before starting. This direction is particularly important for ladies.
2. Eat a good hearty meal three hours before sailing, of wholesome food.
3. Select a berth as near the center of the vessel as possible. In going to Europe it is better to be on the starboard side, and in returning on the port side, which will be the sunny side.
4. Go on board sufficiently early to arrange such things as may be wanted for the first day or two, so that they may be easy of access; then undress and go to bed before the vessel gets under way. The neglect of this by those who are liable to sea-sickness is sure to be regretted. If subject to nausea, retain the horizontal position the entire passage if necessary.
5. Eat regularly and as heartily as you can (and there is nothing that can be taken better than light chicken-broth), but without raising the head for at least one or two days. In this way the habit of digestion is kept up, the strength is preserved, while the system becomes accustomed to the constant change of equilibrium.
6. On the first night out take some mild laxative medicine, and be careful to keep the bowels open for the remainder of the voyage. Constipation not only results from sea-sickness, but in turn aggravates it.
7. After having become so far habituated to the sea as to be able to take your meals at the table and go on deck, never think of rising in the morning until you have eaten something, as a plate of oatmeal, or a cup of coffee or tea, with biscuit. The Edinburgh biscuit can be taken by the most delicate. If subsequently during the voyage the sea should become unusually rough, go to bed before getting sick. It is foolish to dare anything when there is no glory to be won, and something to be lost.
8. Do not make the mistake of trying to keep on deck—it is a mistake to suppose that sea-sickness is beneficial to any one,—it is often permanently injurious, and has sometimes resulted fatally.

STUTTERING AND STAMMERING.

Though these two terms are used interchangeably, they denote different affections of the vocal organs. Hunt says *stuttering* "is a vicious utterance, manifested by frequent repetitions of initial or other elementary sounds, and always more or less attended with muscular contortions." The same writer says of *stammering* that it "is characterized by an inability or difficulty of properly enunciating some or many of the elementary speech sounds, either when they occur at the beginning or the middle of a word, accompanied or not, as the case may be, by a slow, hesitating, more or less indistinct delivery, but unattended with frequent repetitions of the initial sounds, and consequent convulsive efforts to surmount the difficulty."

Either or both may attend St. Vitus' dance, and then treatment is to be directed to the latter. They also arise from deformities of the lips, tongue, teeth, or palate (when they are either incurable or need surgical measures), from enlarged tonsils, or from diseases of the nervous system. It is because they are so often of a nervous origin that they are mentioned in this chapter.

Stammering is often developed in children by the family using "baby talk"—a practice which should be avoided. Speak plainly to a child when he is learning to talk, and teach him to enunciate words distinctly as he acquires the ability to do so.

Great or sudden excitement, loss of sleep, nervous exhaustion, the excessive use of narcotics, and other debilitating influences may produce either of these, though more often only temporarily.

TREATMENT.—From what has been said, it is obvious that the treatment is generally to be directed to some disorder of which stuttering or stammering is a symptom. When a case has become established, it is best to put the patient under the care of some one who is skilled in this particular field, for a minute and patient discipline of the organs of speech is necessary, and sometimes involves weeks or months of care. Assistance may be given if the family will not notice the patient when he is in a paroxysm, *never* imitate or laugh at him, and never excite him. The patient should not try to speak unless his lungs have been well filled. If he will, when in a paroxysm, pinch his clothing, move his feet or other part of the body, or resort to other similar means to divert the attention from his difficulty, his speech will be more likely to flow freely and naturally for the moment.

If a case has not become confirmed, friends may break it up by training the patient to control his speech as far as he can. They must encourage him to speak slowly, stop him when he begins to stutter or stammer (doing this gently and without affected sympathy, never with a start), and have

the neuralgia occurs in over-worked patients, are essential. Sometimes a change of habits and climate is necessary to effect a cure.

DELIRIUM TREMENS.

Delirium tremens is a direct result of the use of alcoholic stimulants. The principal symptoms are sleeplessness; mental derangement, the mind being constantly disturbed by frightful visions; "the serpent in the cup stinging like an adder" presents, in its dreadful contortions, a terrible picture. The symptoms are much like those in inflammation of the brain, but the previous habits of the patient will be sufficient to distinguish the one from the other.

The disorder usually comes on when the patient has been deprived of a powerful stimulant to which the nervous system has become accustomed by constant use. If the stomach becomes unable to retain such stimulant after it has been long continued, the same effects may follow.

TREATMENT.—The best remedies in the earliest stages are *nux vomica* and *kali bromidum*, the latter especially being freely used. Have the patient take copious drinks of a strong decoction of Cayenne pepper. A teaspoonful of the extract of red Peruvian bark has proved beneficial in both relieving the patient in an attack, and removing the desire for stimulants. Total abstinence is, however, the only sure preventive of succeeding attacks.

[I have controlled delirium tremens better with Jamaica dogwood (30 drops every hour) than with any other remedy.—HALE.]

LOCK-JAW.—TETANUS.

Tetanus is a general spasm of the body, the muscles sometimes assuming such a rigid state that the heels and head are drawn back together. Usually, however, it is confined to the face, closing the jaws so firmly as to prevent any separation whatever; whence the name "lock-jaw."

It may arise from a disorder of the blood or nervous system, or from an injury, an amputation, a punctured wound, as a nail in the foot, a burn, the extraction of a tooth, and the like.

TREATMENT.—*Arnica*, applied to the wound, and taken internally, often relieves. *Belladonna*, *aconite*, or *nux vomica* may be found useful. Sometimes surgical measures are necessary.

It is not within the province of domestic treatment, and should receive skilled attendance at the first indication. Do not put confidence in the many silly newspaper specifics for the treatment of this really dangerous ailment, for you may be responsible for serious results.

ANÆMIA.

1. Watery condition of blood, with marked paleness, especially on lips.
2. Small, weak, soft pulse, and continued disturbance of circulation; cold extremities.
3. Sleeplessness not frequent; often abnormal ability to sleep.
4. Fatigue from slight exertion; physical labor always more exhausting than mental.
5. Perhaps, and generally, no disturbance of mental faculties, and no mental depression.
6. Generally connected with some organic disease outside of the nervous system.
7. Occurs at any period from birth to old age; much oftener in females than in males.
8. Benefited by remedies for the blood, such as iron.
9. Recovery may be rapid upon removal of the organic disease, and enriching of the blood.

NERVOUS EXHAUSTION.

1. Healthful blood and color, sometimes redness of face.
2. Full or normal pulse, at times very slow or very rapid; circulation normal or irregularly disturbed.
3. Sleeplessness very frequent and stubborn.
4. Fatigue sometimes from slight exertion, sometimes not from a great deal; mental labor (especially in brain exhaustion) more wearing than physical.
5. Consecutive thought and strained mental activity at times impossible, memory often temporarily weak, and mental depression almost universal.
6. Has no natural or essential connection with disease in organs outside of nervous system.
7. Occurs mainly between ages of sixteen and sixty; rather less often in females than in males.
8. Benefited little or none by remedies for the blood, but by those for nervous system, such as are given under "Treatment" below.
9. Recovery almost surely gradual, and under combination treatment.

TREATMENT.—Professor Beard, whose inquiries into this disease have been most valuable and of the highest order, speaks thus of this and kindred nervous diseases: "Although they are not directly fatal and so do not appear in the mortality tables; although, on the contrary, they may tend to prolong life and protect the system against febrile and inflammatory diseases, yet the amount of suffering that they cause is enormous. Volumes are written on typhoid and other fevers; but in this country these neuroses, although not fatal, cause more distress and annoyance than all forms of fevers combined, excepting perhaps those of a malarious origin. Fevers kill, it is true; but to many death is by no means the most disagreeable of the many symptoms of disease." From these words the patient may draw the consolation that, though his case is worse than uncharitable neighbors have supposed, it is not one of imminent danger. It will be of the highest importance in the treatment if the patient cultivates a spirit of hope by learning that his chances of long life are rather above the average, and that, if proper treatment be continued with patience for the required time, a cure is

It is not easy to overrate the importance of chewing, and the mixture of the saliva. Unlike the other steps in digestion, these are under the control of the will, and great care should be taken to allow ample time for a thorough preparation of the food for swallowing. Rapid eating will almost surely be attended with an excessive use of drinks in place of the requisite saliva. By such haste again, hard pieces of food pass to the stomach and induce indigestion or other painful disorders.

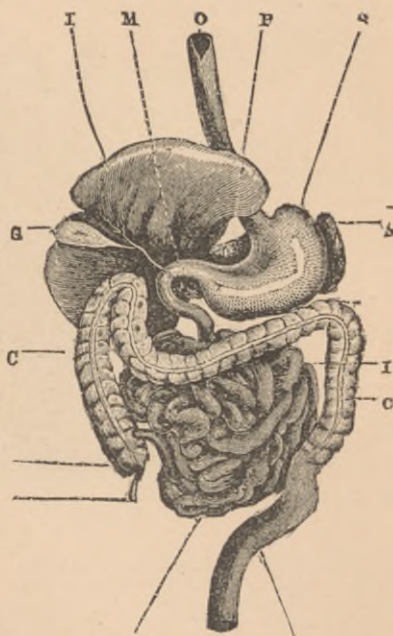
THE ŒSOPHAGUS AND STOMACH.

The gullet, or œsophagus, is a strong, cartilaginous tube, eight or nine inches long, capable of complicated, worm-like movements, by which the food is swallowed, or carried down into the stomach.

The stomach is oblong or pear-shaped, thin, and easily distended, with an average capacity of about three pints in the adult. When food enters it, its lining membrane becomes a deep red, from an underlying network of minute blood-vessels, and furnishes a clear, acid fluid, called gastric juice. This mingles with the food and effects changes in some of its elements, making part of



22. SALIVARY GLAND.



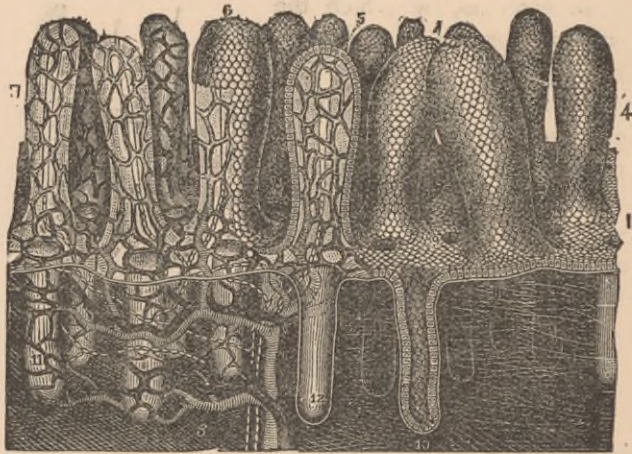
23. ORGANS OF DIGESTION.

- O.—Upper Part of Œsophagus.
- S.—Stomach.
- L.—Liver.
- M.—Lower Opening of the Stomach.
- I.—Small intestine.
- C.—Large Intestine.
- P.—Pancreas.
- A.—Spleen.
- G.—Gall-Bladder.

them ready to pass into the circulation, the stomach meanwhile keeping up continual movements, during the presence of the food, to insure a complete mixture. Some parts of the food are absorbed at this point by the blood-vessels, and pass up into the right side of the heart, whence they are carried as nutriment to all parts of the body by the circulation.

secreted by a copious supply of glands, which corrects the results of any imperfect action of the juices previously mentioned.

Though digestion proper is completed with the formation of the chyle, this is not the end. The intestines, especially the small one, are even more copiously supplied with blood-vessels than the stomach, and these absorb the chyle with wonderful activity. Their lining membrane is also supplied with innumerable elevations, or villi, which reach out and absorb the chyle, their blood-vessels carrying it up to the heart. In the small intestine are still other minute vessels, called lacteals, starting in the villi and running along by the side of the blood-vessels. These unite to form one canal, the



25. MUCOUS MEMBRANE AND VILLI OF THE INTESTINES
(highly magnified).

- | | |
|---|--|
| 1.—Outer Cellular Layer. | 7.—Villus wholly stripped. |
| 3.—Under Layer of Fiber | 8.—Lacteals. |
| 2.—Vein. | 10, 11 and 12.—Glands between the Villi. |
| 4.—Villi. | 9.—Mouth of Gland. |
| 5.—Section of Villus, with outer layer, blood-vessels and lacteals. | 13.—Capillaries surrounding the same. |
| 6.—Villus with part of outer layer removed. | |

thoracic duct, through which they carry their contents, which they absorb from the food in the intestines, up into the heart, whence they are driven, mingled with the blood, into the circulation for the nourishment of the body.

It will be seen from the foregoing that digestion is the process by which food is wrought up into suitable form for the repair of the waste in the body. It prepares the material and surrenders it to the blood, the architect of the body, whose functions are set forth in the next chapter. It will be readily inferred, from the number of the digestive organs and their complex functions, that any disturbance in one will be readily felt in the others.

THE GUMS.

The gums are subject to various disorders, mostly of a sympathetic nature, and thus connected with diseases of other parts. Among the varied causes is a lack of their proper care, in consequence of a want of knowledge of the measures requisite to keep them in health. There may also be a diseased state of the system which prevents or retards a radical cure, such as blood taints, scurvy, or the abuse of mercurial preparations.

Inflammation of the gums often arises during teething, and is due to a feverish or otherwise deranged state of the system. The pernicious habit of cutting the gums before the tooth has developed causes this and other disorders, without giving relief to the child, or hastening the protrusion of the tooth. Inflammation also arises from abscess of the teeth or gums in toothache, from canker of the mouth, and from taking cold.

Scurvy of the gums is caused by a salt-meat diet, lack of vegetables, and starvation, being often found in camps, in sailors, and among poverty-stricken people.

Spongy, soft gums, with ragged edges, and loose on the teeth, are produced by a collection of tartar, deranged stomach, dosing with mercury, want of cleanliness, and decayed teeth.

Gum-Boils, or abscesses of the gums, arise from taking cold, inflammation of the gums, extraction and abscess of the teeth. They usually commence in the sockets of the teeth as a result of inflammation of the roots. They are accompanied with great pain, swelling of the gum and cheek, and finally burst through the gum, and sometimes externally through the cheek. The last issue is to be prevented if possible, as it leaves an unsightly scar, and in children may lead to caries of the jaw.

Salivation is usually caused by the abuse of mercury, but sometimes comes on as the result of taking cold. It also accompanies attacks of fevers and disorders of the stomach. It is marked by swelling of the glands in the throat, profuse discharge of saliva and inflammation or ulceration of the gums; the teeth become loose, and when the disorder is caused by mercury, can often be picked out with the fingers.

Bleeding may occur in any of the above disorders of the gums, but especially in scurvy, and is due to a general unhealthy condition of the parts, the removal of which will relieve the trouble.

TREATMENT.—Since the cure of the various diseases of the gums is conditioned upon a healthy state of the stomach, all articles of diet which tend to derange that organ should be studiously avoided, and only plain, nourishing food be used. In the severer forms of inflammation and ulceration, the diet should consist of broths, gruels, milk-and-water, crackers

cation of taste, compel the stomach to perform unusual and unnecessary labor, and tend to derange its functions. As a result, that organ, on which so largely depend life and happiness, becomes very often the seat of misery.

It is not the purpose to give an elaborate description of the different forms, but rather a general outline of the most prominent ones, with the best methods of preventing the disorder, and of treating it when it has come on. The general symptoms are quite well known to all under the common term "indigestion," the more conspicuous being impaired appetite; flatulence; nausea; belching of bitter or acid fluids; furred tongue, often large and flabby and showing impressions of the teeth on its sides; foul breath; heart burn; pain in the stomach; sensation of weight or fullness after eating, however small the amount; depression of spirits; palpitation of the heart; various affections of other organs, as constipation and diarrhœa.

TREATMENT.—Treatment depends largely on hygienic measures, and the strict observance of several fixed rules. The first thing of importance is the proper selection of food, and, as a rule, fresh animal food, cooked so as to retain all its juices, is received the most kindly, being more easily digested, and causing less flatulence, than the use of vegetables. Hard-dried, cured meats, ham, tongue and sausages are especially to be avoided; also veal, pork, meats that have been cooked more than once, salmon, lobster, crabs, salads, cucumbers, raw vegetables, cheese, new baked bread, coffee, and particularly any food or drink that occasions distress after eating.

Stimulants, malt liquors, spirits, or wines, *are to be avoided under all circumstances*, even if their use does give temporary relief. The taking of alcoholic preparations is productive of the most serious derangements of digestion, and the seeming benefit, whether derived from the extensively advertised "bitters," or liquor in its clear state and purest form, is the result of deadened sensibility, and the trouble is still going on, growing worse each day.

Fluids should be used moderately, unless the food is taken in that form. Cocoa or black tea will be received kindly. Water, against which some have a prejudice, is often one of the best means of preventing or curing dyspepsia. This should be used with caution, and but a small quantity be taken at meals, as it cools the stomach and checks the flow of gastric juice. A cup of hot water, taken before meals, increases the gastric juice and aids digestion.

The food should be well masticated; therefore plenty of time should be allowed for the meal. To accomplish this part of digestion, the teeth should be in good order, and if the natural teeth are decayed or lost, their place should be filled by a skillful dentist.

A cheerful frame of mind and pleasant, but moderate, conversation

slow digestion from deficiency of gastric juice. The following prescription is invaluable in many cases:

℞ Pepsin, - - - -	1 drachm.
Dilute muriatic acid, -	½ "
Subnitrate of bismuth, -	2 "
Glycerine, - - - -	½ ounce.
Water, - - - -	3½ "

Mix.—Give a teaspoonful before or after meals.—HALE.]

HEARTBURN.

The above term signifies a sensation of acrid heat in the region of the stomach, rising up into the throat. It is due to some irritating cause in the stomach, as spices, strong stimulants, tea, sharp acids, smoking, or presence of bile. It has no connection with trouble in the heart, as its name would imply. Hiccough is a frequent accompaniment, which in infants may be corrected by a little milk or water.

TREATMENT.—Chamomilla is the principal remedy, and, if taken occasionally, will prevent its return if the special cause is removed.

Carbo vegetabilis.—Acid or acrid belchings, with flatulence and constipation.

Chronic cases will yield to nux vomica, bryonia or pulsatilla.

In obstinate cases, Krukneburg's prescription is often followed by admirable results, namely, "When the patient is hungry, let him eat buttermilk, and when thirsty, let him drink buttermilk."

[Phillips' Milk of Magnesia is the best palliative known for acid eructations and acid changes in the food, even when causing diarrhœa and colic in children. A teaspoonful taken an hour or two after meals immediately relieves this distressing condition.—HALE.]

VOMITING.—SICKNESS.

Vomiting is usually a symptom of some disorder of the digestive organs, or, through sympathetic irritation, of disease of organs more remote. The causes are quite numerous; among the principal ones we have indigestion; pregnancy; disease of the brain, kidneys or uterus; obstruction of the intestinal canal; cancer or ulcer of the stomach; morbid states of the blood; eruptive fevers. If the conditions preceding vomiting are relieved by it, then it may be considered a favorable symptom; if they are not relieved, but are increased, or if the vomiting is the result of brain disease, epilepsy, and the like, the condition is of an alarming form.

Iris versicolor.—Severe, flatulent colic, with diarrhœa, sometimes yields to this remedy when all others fail.

Warm fomentations should be applied to the abdomen, and if the bowels are constipated, a copious injection of warm water be used at once. This alone often gives immediate relief. Care should be taken in the diet, and flatulent food, especially vegetables, and all other articles known to disagree, should be avoided. Medical aid should be summoned if relief does not soon follow the means recommended above.

CONSTIPATION.

Constipation is a retarded action of the bowels by which the contents become hardened and pressed in the rectum, where they are retained for a longer or a shorter time. It is not always a symptom of disease, and the practice of using cathartics when the bowels do not move once or twice a day is a pernicious one, and always attended with bad results. Purgatives during sickness are extremely injurious, and while they afford a temporary relief, the irritation of the delicate mucous membrane of the intestinal tract is followed by weakness, a chronic catarrh is induced, and the condition sought to be removed is aggravated to a large extent.

The *London Lancet*, a leading medical journal of Europe, in a prominent article in October, 1870, after strongly denouncing the prevalent custom of indiscriminate purgation, makes the following observations upon what cathartics can not accomplish, and the pernicious results in those cases in which their use is customary:

“(1) *Purgatives can not eliminate or throw off morbid poisons.* They have no power, except for evil, in the eruptive fevers, including typhus and enteric (typhoid).

“(2) *They can not remove a clot on or in the brain.* Apoplexy is known now to depend on degeneration of the blood-vessels, which purgatives might damage, but could not possibly benefit.

“(3) *Purgatives can not overcome a mechanical obstruction of the bowels.*

“(4) *They are unnecessary in the case of lying-in women.* The tendency of purgatives is to weaken the patient, lessen the amount of milk, and retard the restoration of the parts by disturbance.”

This is good teaching, and, in fact, a constipated condition of the bowels of lying-in women is one of the best indications of progress to health and strength.

Daily evacuations of the bowels, which are usual in early or middle life, are often in excess in advanced life, when three or four times a week are

sunken appearance of the face, with failure of the heart's action. The dose is one to five drops of the strong tincture, according to age, given every ten to fifteen minutes until circulation is restored.

Complete rest in the recumbent posture should be secured, with warm applications to the abdomen, and the heat of the body be maintained by hot bottles and other means. Ice and ice-water may be given freely. The diet should be non-irritating.

CHOLERA INFANTUM.

Of all the diseases which strike terror to the mother's heart, this is perhaps the most appalling. Its progress is so rapid, and its results so fatal, that we do not wonder at the dread with which it is viewed. The necessity for prompt action when far from medical aid impels us to give full notes here, with the assurance also that the means recommended are often an anchor of safety when others fail; but it is sincerely hoped that no one, while following these directions, will delay a moment in securing the best physician that can be found.

Cholera infantum is peculiarly a disease of large cities. While country towns and farming communities may suffer from it, they are not attacked with that virulence which manifests itself in more thickly populated sections. Its chief causes are exposure to extreme heat, foul-air from unclean streets, poor food, and nervous irritation in teething. It more often attacks children who are fed on artificial food and cow's milk than those who are at the mother's breast. It comes on between the fourth and twentieth months and its characteristics correspond to those of cholera morbus. Its symptoms are severe vomiting; great pain in the bowels; cold extremities; purging, and very rapid prostration; bloating of the abdomen; tongue red and dry, or moist, and covered with a thick fur; head hot; eyes sunken, dull or glassy, and the lids heavy; the child is restless, moans constantly, and turns from side to side; great thirst; feeble pulse; the heart's action irregular; the loss of fluids is very rapid, and the kidneys consequently cease to secrete the urine. The blood thus becomes poisoned with urea, as indicated by delirium; rolling of the head; sharp or plaintive cries; squinting of the eyes; stupor; convulsions; and death, if not relieved.

This disease should not be confounded with catarrh of the intestines, though often accompanying it, and though children who are affected with the latter, and are subjected to the necessary conditions, sometimes contract cholera infantum. Intestinal catarrh, or summer complaint, may be distinguished by a comparison of its symptoms, given under Diarrhœa, with the above. It is strictly an inflammatory disorder, and does not entail that

Veratrum album, for vomiting and diarrhœa; cool skin; sunken features; small, weak pulse; great thirst; anxiety.

Arsenicum, in a later stage, for sudden sinking of the strength; extremities cold and covered with a clammy sweat; intense thirst, with small drinks at a time; persistent vomiting; burning sensation in the bowels; symptoms all worse at night.

Hot fomentations will relieve the pain. Cold applications are sometimes more agreeable, and may then be used. Bran or linseed-meal poultices are often productive of good. When the tongue is red and dry, the abdomen much distended, the urine scanty and passed with difficulty and burning pain, applications of turpentine will be of much value; use it by putting one tablespoonful of turpentine in a pint of boiling water, and laying on the abdomen cloths wet in this solution. The flax-seed and mustard poultice recommended for inflammation of the bowels is also valuable.

The diet should be very light, consisting of milk, water-gruel, and like articles. Water should be taken quite frequently, but in small quantities. When the inflammation subsides and convalescence begins, a more strengthening diet may be provided, but solid food and meat should not be included until the patient has quite recovered.

WORMS.

Of the several varieties of parasites which infest the human body, there are three kinds which are usually known under the appellation of worms. To these many of the disorders of childhood are ascribed, and though the best evidence of their presence is their having been seen, this is not always considered. Many times a stomach that is weakened by disease or improper food, is still further deranged by nauseous drugs, under the name of vermifuge. The patentee grows rich, but the poor child suffers from the false impression that all children have a "patent right" on worms.

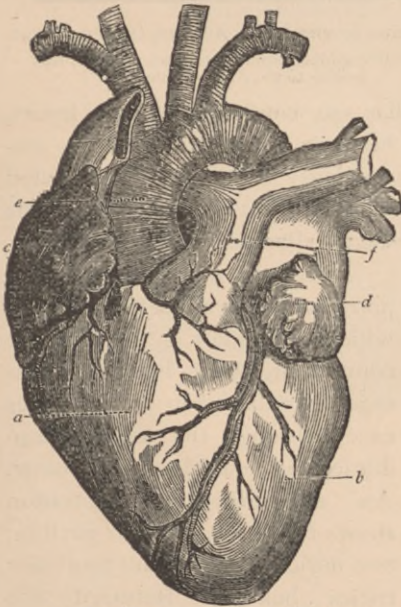
The most common of these parasites is the thread or pin worm. They usually occupy the lower portion of the large intestine, and may be conveyed from one person to another by contact. After the patient is warm in bed, they may be seen around the anus, sometimes in masses of considerable size, like a ball; they will migrate from the bowel to the vagina, and when attached to the folds of the bowel or vagina, produce intense itching and annoyance. It is believed, and there is little doubt of its truth, that the larvæ are deposited on the outside, where they hatch and then enter the bowel ready to propagate again. In addition to the itching, the symptoms of their presence are irregular appetite; offensive breath; picking the nose; straining at stool; disturbed sleep, and restlessness.

CHAPTER V.

THE ORGANS OF CIRCULATION.

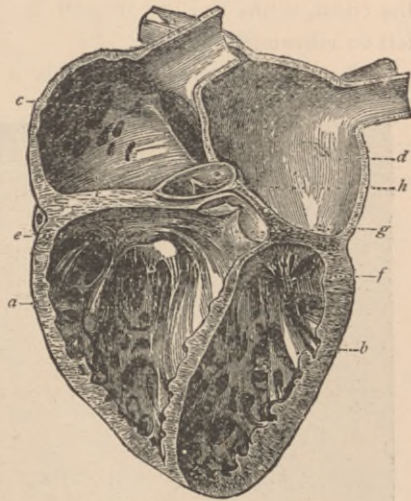
ANATOMY AND PHYSIOLOGY.

THE circulation of the blood is the most active and most evident manifestation of life, as it is one of the most wonderful. Indeed, the blood in motion we are accustomed to speak of as life itself, since we know that death speedily ensues upon the cessation of its circulation. Again, it is often remarked that the body grows by the food which is



26. THE HEART AND BLOOD-VESSELS.

- | | |
|---------------------|-------------------------|
| A.—Right Ventricle. | B.—Left Ventricle. |
| C.—Right Auricle. | D.—Left Auricle. |
| E.—Aorta. | F.—Artery to the Lungs. |



27. CHAMBERS OF THE HEART.

- | |
|-------------------------------------|
| A.—Right Ventricle. |
| B.—Left Ventricle. |
| C.—Right Auricle. |
| D.—Left Auricle. |
| E, F.—Openings into the Ventricles. |
| G.—Artery to the Lungs. |
| H.—Aorta. |

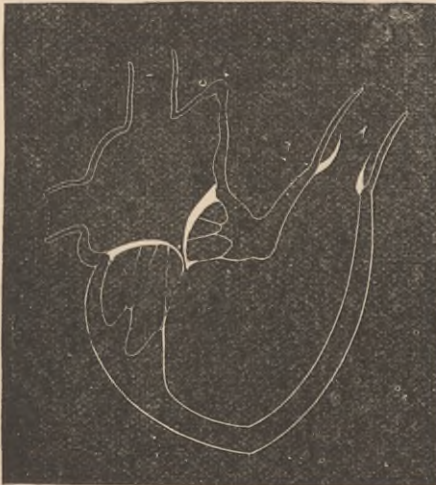
taken into the stomach; but by reference to the description of the exceedingly interesting process of digestion, as given in the anatomy and physiol-

ogy of Chapter IV, we learn that these organs only prepare the nutriment, and then discharge it into the blood for distribution. It is now in order to describe those organs, with their functions, which receive this nutriment and use it in building the body.

THE HEART.

The heart, the busy little engine of life within us, is conical in form, and lies between the two lungs, obliquely across the chest. The point, or apex, comes out to the wall of the chest under the nipple of the left breast. The upper part, or base of the cone, passes upward and backward toward the right shoulder, and is securely fastened to the walls of the chest, while the lower part is left to vibrate freely.

Around the whole heart is a peculiar sac, consisting of two layers, between which the walls are exceedingly smooth and lubricated by a secretion of their own. This sac is called the pericardium.



29. SECTION OF THE RIGHT AURICLE AND VENTRICLE.
The Valve leading into the Ventricle is closed; that leading to the Artery is open.

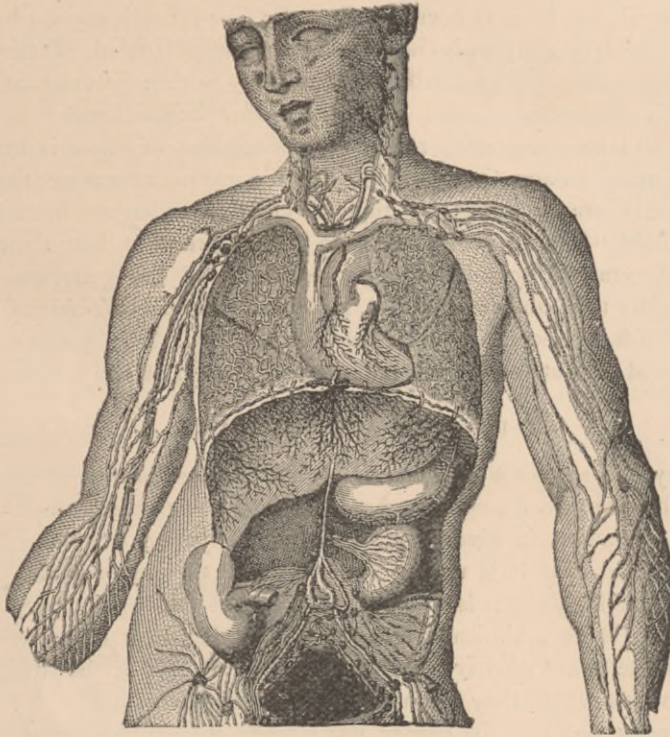


28. SECTION OF THE RIGHT AURICLE AND VENTRICLE.
The Valve leading into the Ventricle is open; that leading to the Artery is closed.

Internally, the heart has two parts, with a wall between them which completely cuts off direct connection, there being no passage from one side to the other except through the arteries, capillaries and veins described below. An accompanying illustration shows that there are four cavities, two auricles above, and two ventricles below. Between the auricle and ventricle on either side is a valve which permits the blood to pass downward, but not upward. A peculiarity of these

cavities is their power of forcibly contracting and so driving out their contents, as noticed further on.

accumulates in a wound when it is first made; and a like balancing is effected when the body is deprived of food by sickness or other cause, the lymphatics taking up the fat and conveying it to the parts which more urgently need it. Because of this process it has been truthfully said that, in the rapid loss of the flesh by people who are sick or in a famine, and by



34. LYMPHATICS.

animals which spend the whole winter in their dens without food, the body lives on its own flesh.

In their course the lymphatics pass through numerous enlargements, from the size of a pin-head to that of an almond, which are known as lymphatic glands. In consequence of colds and other disorders, these glands become inflamed, swollen and clogged, thus entailing inconvenience and pain, if not very serious results.

THE CARE OF THE HEART.

The importance of the heart in the economy of the physical organism, of which a hint has been given in the pages immediately preceding, and the belief that the public should know more about its functions, with the means of preventing or modifying the dangers to which it is exposed, make a sufficient reason for devoting a considerable space to the care of this organ. The remarkable indefiniteness with which the term "nervousness" is used, has already been noted, and a like remark applies to "heart-disease." Nearly all people have at times some fancied affection of the heart, though they are generally troubled only with a disturbance which is a symptom of another disease. The dread of "heart-disease" in the public mind will be measurably relieved by a reading of what is here to be said, and many anxious patients will find the means of curing themselves.

What is offered upon this topic is chiefly condensed from the little work entitled "The Heart and How to Take Care of It," by the editor-in-chief. A grateful acknowledgment is made of the generous courtesy manifested by the publishers, the *A. L. Chatterton Publishing Company*, of New York, in permitting such use of the same. The reader is respectfully referred to that work for a fuller consideration of the subject.

LOCATION AND STRUCTURE.

Every one supposes that he, of course, knows just where the heart is located; but the great majority of readers will be surprised, upon carefully noting the location as given under the anatomy and physiology of this chapter, to find that it is not so low as they had supposed, nor lying so much on the left side. It is a laughable fact that actors and actresses, who are supposed to be technically exact in all the details of their parts, in referring to the heart oftener place the hand on the pit of the stomach than over the organ which they are in the act of apostrophizing.

It is presumed that the reader has already studied the structure of the heart and its functions, as given in the first pages of this chapter. He has there gained a sufficient knowledge of this organ as the central figure in the circulation, and it only remains to speak briefly of its muscular structure and nervous organism.

The heart consists of seven layers of muscular fibers; the central fibers of the muscular wall are circular, and go *around* the heart, while the fibers toward both outer and inner surfaces pass rather from base to apex, *twisting spirally* in their course. The outer and inner fibers continue into or connect with each other. Thus the heart may be described as a *coiled* spring of muscular fiber. Some of the great anatomists have unwound these

that the health of other organs is impaired, and should be attended to, for even if the cardiac irritation is purely reflex, if it continues a long time it will result in a disorder of the heart itself, and remain fixed there.

HOW CAN WE TAKE CARE OF THE HEART?

To this broad question the general answer may be, *by avoiding all those influences which tend to derange its action, or cause disease to fix itself thereupon.* And right here I must warn you against going to the extreme of solicitude. *It is neither prudent nor safe to watch the heart with too much constancy.* I have known many cases of supposed heart-disorder to be caused by watching the heart's action and the pulse, or rather from watching *for* evidences of heart-disorder where none existed. Many persons become monomaniacs on this subject, and annoy their medical attendants very much by insisting that they have some affection of the heart, and doubt persistently the assertions of the physician after careful examinations that no actual disorder of that organ exists. Sometimes it is utterly useless for us to assure and reassure such patients. The best method I have ever adopted in such cases is to direct their attention to other organs as the source of complaint.

INFLUENCE OF THE WILL AND IMAGINATION.

We should keep well in mind the fact that, although the heart is made of involuntary muscular fibers, which are supposed to act independently of the will, it receives its supply of nerve-force from nerves which originate in the brain. We know, too, that mental emotions directly affect the heart, which they must do through these nerves. Why should not the brain, acting to enforce *will*, send its mandates to the heart? Some remarkable cases are on record to show that such may be the case. Physicians know that the action of the heart may be quickened by the mere centering of the consciousness upon it, without any emotion or anxiety. We all observe that when we begin to feel the pulse, it is always hurried if the patient fixes his consciousness on the act. In making examinations of healthy men for life insurance, I have often observed that the healthiest hearts will beat hurriedly and unnaturally, because the candidate was conscious that I was listening for disease. It is related of a gentleman, resident of Baltimore, a Col. Townsend, that, by an effort of the will, he could at any time cause an apparent cessation of all the vital functions, so that the *heart's action could not be perceived*, nor any respiratory movements be observed. It is possible that we possess some will-power on the heart, and that this influence might be increased by cultivation. I can imagine cases where it could be exercised with benefit.

who have already some organic disease of the heart. The latter class should always be careful in their exercise. The organically diseased heart will pump the blood into all its various channels with sufficient force to carry on the functions of life, so long as its work is regular and uniform, but it may fail the moment it is taxed with any unusual labor.

THE HEARTS OF CHILDREN

Are peculiarly delicate, and easily deranged. I imagine you asking the question: "Do children have heart-disease?" I answer yes, and very often. Quite a large percentage of children are born with some organic disease of the heart. These diseases arise from two causes, namely: (1) *Arrest of development*; (2) *Ante-natal inflammation*.

Some of you may have seen cases which belong to the first class. Among the most common is that disease known as "cyanosis," or the "blue disease," in which the child assumes, soon after birth, a blue or purplish color, and it soon dies—few live to mature years. I ought to say here, that it is recommended that children born with such a disease be placed on their *right* side, with the head and shoulders elevated as high as 45 degrees, or nearly half erect. This allows the heart to work more easily, and sometimes prevents the arterial blood from mixing with the venous. It is this mixing of the two kinds of blood which causes the blue color that gives the disease its name. Cases have come under my care in which this position of the child had to be constantly maintained for days and weeks, or until the heart became able to carry on its work, or the malformation had been remedied. The child would breathe easily, sleep well, and have a good color so long as it was kept in the position I have described; but any change caused blueness, difficult breathing, and other symptoms.

There are certain diseases of children which may result fatally unless great care is taken that the heart is not overtaxed. Among these, rheumatism, diphtheria, scarlet fever and pneumonia are most prominent. Rheumatism usually leaves such injury to the valves that any violent motion excites the heart so much that the incompetent valves do not allow the blood to flow properly through the heart. Diphtheria is more dangerous to the heart than any other malady. You have heard of cases in which the child passed through an attack of this disease, and was supposed to be out of all danger. It would be allowed to sit up or walk about the room, when, to the astonishment of all, it has fallen down suddenly *dead*. Such cases are common. The child dies from paralysis of the heart, which has been poisoned by the virus of this fearful disease, just as the heart is poisoned by the venom of a serpent. After an attack of diphtheria or pneumonia children should be watched carefully, lest they make some sudden motion. They should be

TABLE OF THE CHIEF DIFFERENCES BETWEEN ORGANIC AND FUNCTIONAL DISEASES OF THE HEART.

ORGANIC.	FUNCTIONAL.
1. Palpitation usually comes on slowly and insidiously.	1. Palpitation generally sets in <i>suddenly</i> .
2. Palpitation or distressed action, though more marked at one time than another, is <i>constant</i> .	2. Palpitation is <i>not constant</i> , having perfect intermissions.
3. Percussion elicits <i>increased extent</i> and degree of <i>dullness</i> in the region of the heart.	3. Dullness in the region of the heart is not extended beyond the natural limits.
4. <i>Lividity</i> of the lips and cheeks, congested countenance, and dropsical appearance of the lower extremities, are often present.	4. There is <i>no lividity</i> of the lips and cheeks, countenance often greenish, and, except in extreme cases, there is no dropsical appearance.
5. The action of the heart is <i>not necessarily quickened</i> .	5. The action of the heart is generally <i>quickened</i> .
6. Palpitation often <i>not much complained of</i> by the patient, but occasionally attended with <i>severe pain extending to the left shoulder and arm</i> . (See Angina Pectoris.)	6. Palpitation <i>much complained of</i> by the patient, often with <i>pain in the left side</i> .
7. Palpitation is <i>increased by exercise</i> , stimulants and tonics, but is relieved by rest.	7. Palpitation is increased by sedentary occupations, but <i>relieved by moderate exercise</i> .
8. Is more common in the <i>male</i> than the female.	8. Is more common in the <i>female</i> than the male.

While such affections of the heart as we have named are usually not attended directly with bad results, there are cases in which death has taken place, as in angina pectoris and neuralgia.

People who suffer from disturbances of the heart can rarely tell the nature of the trouble, and only in those cases in which some condition or habit of the body is known to be the direct cause can one tell whether the disorder is functional or organic. It is, therefore, of the utmost importance that, in all cases where there is a doubt as to the real condition, a physician be consulted.

People are generally more anxious and alarmed about a nervous disorder of the heart than if it were organic. Its constant or paroxysmal disordered action worries and annoys them, and they cannot help thinking of the heart; and the more one fixes the mind upon that organ, fearing it is diseased, the worse it acts.

There is a marked correspondence between functional disorder of the heart and the same condition of the lungs. In both, the sufferer is anxious and loses hope. If, on the contrary, the heart or lungs be structurally diseased, the patient is calm and hopeful, and never seems to appreciate his

Arnica, if the disorder results from an injury, may be alternated with aconite.

Belladonna is indicated by delirium; dark-red and slimy surface; red, dry tongue. [Hamamelis is a specific for this disease.—HALE.]

The diet in the beginning should be light and unstimulating. When suppuration takes place, highly-nourishing food is needed.

ENLARGED VEINS.—VARICOSIS.

When the coats of the veins become weakened by lack of nutrition, by pressure from obstructed flow of blood, and like means, they become dilated to such an extent that the valves fail to support the blood on its way to the heart. From this, the vessels become distended, and in many cases burst and form a fine network, giving a blue appearance to the tissue surrounding them. The difficulty is mainly confined to the lower extremities, except when it takes the form of piles.

The affected veins are tortuous, knotted, of a dull-lead hue, often discoloring the parts, and producing considerable swelling of the limb. When the horizontal position is maintained for any considerable time, the blood flows out of the veins, and they are greatly diminished in size.

Anything which obstructs the circulation of the blood induces this disorder, as tight shoes or stays, a tumor, pregnancy (the most common cause), stubborn constipation, and hereditary predisposition.

This condition causes some aching pain upon walking any distance, or upon long standing, and may be attended with bleeding from bursting of the veins, or with ulcers from imperfect circulation and want of nutrition of the skin.

TREATMENT.—The best means of relief is from moderate compression, by means of a closely-fitting bandage, or the elastic stocking. The pressure should be quite gentle and uniform, be applied in the morning, before the patient puts the foot to the floor, and be continued through the day. Where a single vein or a small portion of it is affected, a strip of adhesive plaster applied firmly over that portion will afford prompt relief. The limb should be bathed every morning, and rubbed dry before applying the bandage.

Hamamelis.—This remedy should be given internally, and also applied externally in the form of a lotion, one part of the strong tincture, or of Pond's Extract, to two parts water. Wrap the parts in a compress wet in the lotion and cover with oil-silk, placing a bandage over all. This should be worn during the night.

If any portion of the surface about the varicose veins should become

the pure air taken in by respiration, draws off oxygen, the life-giving element, gives off poisonous carbonic acid and worn-out tissues, and, in its purified state, goes to the left side of the heart, whence it is driven on to rebuild the waste in all parts of the body. Impure fluids of the body are also expelled by respiration, through the breath. The purification of the blood and expulsion of worn-out and deleterious matters are the offices of respiration.

COUGH.

Cough, being a symptom rather than a disease, may accompany a variety of diseases, and arises from many conditions. Oftentimes its character indicates the condition which produces it, and, as such, affords many signs to guide one in distinguishing the disease.

When cough is the result of irregularity in the digestive functions, from chronic derangement of the lining membrane of the stomach, from the presence of some irritating matter in the bowels, or from intestinal worms, these conditions should first be removed; and if the trouble still continues from having engendered positive irritation of the respiratory tract, then treatment should be directed to these parts.

If cough attends some evident trouble in the respiratory tract, it may arise from congestion, inflammation, catarrh or cold, the deposit of tubercular matter in the air-cells, or nervous irritation, causing spasmodic contraction of the air-tubes.

A short dry cough is an evidence of some acute inflammatory affection, and when accompanied with sneezing, watery and inflamed eyes, fever, and nausea, it usually indicates measles.

Painful, hacking cough, with stitching pain in the chest, accompanied with short, quick, difficult breathing, and fever, points to inflammation of the lungs.

A loose, rattling cough, with inability to raise anything, with constant titillation, is an evidence of inflammation of the back part of the throat, upper portion of the windpipe, or bronchi, and is usually of a catarrhal character.

Foreign bodies in the throat, as a hair, fish-bone, tumor, or enlarged palate, may produce cough, usually accompanied with an effort to swallow the offending substance.

A tendency to cough during or after any exertion, rapid motion, speaking, laughing, excitement of whatever nature, or derangements of the system in general, denotes a lung-affection, and usually one of an organic character.

Chronic dry cough, with difficult breathing, and induced by the least

exertion, accompanied with stitching in the chest, and an increased temperature of the body during the day, or at some special time thereof, is an evidence of tubercular deposit in the lungs; and when this increase of temperature is persistent, with loss of flesh, it is positive proof that such condition exists.

Never neglect a cough of any kind.

NASAL CATARRH, OR COLD IN THE HEAD.

The common affection known by the above terms consists in an inflammation of the mucous membrane lining the air-passages of the head. The membrane, at first dry, afterward gives out a watery discharge, usually attended with general lassitude, slight shiverings, weight in the head, sneezing, and watery eyes. There may be thirst, more or less fever, pain in the limbs, and loss of appetite. As the disease progresses, the discharge becomes thicker, yellowish or grayish, and with this the symptoms soon subside under a vigorous condition of the system or judicious treatment.

The affection may extend to the throat, bronchial tubes, or to the lungs, causing sore throat, bronchitis, pneumonia, and the like, or may result in croup, erysipelas, toothache, neuralgia, diarrhœa, and either of many other diseases, a description of which will be given hereafter. Catarrh may, from repeated attacks or neglect, become chronic, and is at times very persistent, and sometimes serious.

TREATMENT.—This consists in both local and internal medication, the disease being one of those in which the patient's own endeavors are relied upon to a great extent. Persistence and patience, especially in the chronic form, are necessary, and through them only, in many cases, is a cure effected.

An essential auxiliary in this course is cleanliness. The folds of the mucous membrane furnish receptacles for the deposit of the secretion which, from its acrid and irritating character, causes a continuation of the inflammation. This should be thoroughly removed by some simple wash which will change the character of the secretions, and be so used as to avoid any irritation from the application. The snuffs, medicines, douches, inhalers and the multitude of other appliances which are guaranteed to cure, should be avoided, and, in cases which have become chronic, a physician who has both skill and time should be consulted. A cure is to be resolutely sought, for statistics show that seventy-five out of a hundred cases of consumption arise from neglected or improperly treated colds.

The best instrument for making local applications to the nose and back part of the mouth and throat, and for cleansing the parts, is an atomizer. In selecting one, pains should be taken to secure that which is most easily managed and has the indorsement of a competent judge. Such an instru-

TREATMENT.—The treatment was formerly surgical, in the main, the removal of the tonsil being deemed the best method of cure. Happily this pernicious and unnecessary practice has given place to a wiser and better method. The first step is a resort to measures for toning up the body to render it less susceptible to atmospheric changes, which are one of the principal exciting causes. Other conditions favorable to the development of the affection need also to be corrected by a general or special regimen, as deranged digestion, taking cold, and frequent attacks of quinsy, or acute inflammation of the tonsils. The vigor of the body is promoted by outdoor exercise, cool salt-water bathing and nutritious diet, the patient meanwhile guarding against colds and indigestion.

Baryta carbonica is useful for children of a pale waxy skin, who are affected with the enlargement, and are disposed to frequent attacks of acute inflammation of the tonsils. Hepar is also adapted to persons disposed to the acute affection, and to those who are of a scrofulous tendency and subject to catarrh of the nose and throat. These remedies should be given once or twice a day and may be continued for several months. Patience will doubtless be requisite.

Cod-liver oil, a food rather than a medicine, will be found a valuable adjunct in most cases, and there are few who will not be benefited by it. Care should, however, be taken not to administer it when the stomach fails to properly assimilate it. It is best borne when given in small quantities, a teaspoonful or less after the morning and noon meals.

The local treatment consists in making direct applications of lotions and washes to the tonsils. Though this, as well as the internal treatment, is best done by a physician, it is given here because this ailment is not often under such care. One of the best local remedies is made as follows:

Tincture of iodine, 1 drachm.

Glycerine, $\frac{1}{2}$ ounce.

Mix.

Make use of this lotion to paint the tonsils once a day, by means of a camel's-hair brush. Another good application, to be used in the same way, is made of one drachm of tannic acid to one ounce of glycerine, well mixed. Spraying the throat with a steam or other atomizer is very beneficial. Hydrastia may be used in this way once or twice daily, a half-teaspoonful of fluid hydrastia being put into an atomizer half-full of warm water. Five grains of the crystal bichromate of potassa in an atomizer half-full of water, used as directed for hydrastia, will be serviceable. A persistent use of these measures, with a careful observance of laws for the promotion of the general health, will render the knife unnecessary in this common and troublesome disorder.

chemist, but for other cases, a very fair article can be made by any one possessing a good supply of fresh, sweet milk, and a proper place to preserve it. To make it, take

- 1 Bottle old koumiss.
- 5 Quarts new milk.
- 1 Quart water.
- $\frac{1}{2}$ Pound loaf sugar.
- 1 Tablespoonful brewer's yeast.

Dissolve the sugar in the water and add the milk, then the koumiss, and then the yeast; stir all together in an earthen jar and place in a temperature of 70° to 75° F. When fermentation has been thoroughly established (which will be indicated by the surface being thickly covered with bubbles), put into strong bottles and thoroughly cork, tying the corks firmly. After this, place the bottles on the side in a temperature of 40° to 50° F., and in twenty-four or forty-eight hours it is ready for use. The only way in which it can be successfully drawn from the bottles is by using a champagne faucet. By this means, it will remain sparkling until all is used, and there is no danger of wasting it. Shake the bottle if there should be any lumps preventing its free egress from the faucet.

The extract of malt is highly recommended as a very nutritious tonic, and there are many preparations of it which will prove beneficial in the treatment of this disease and others of a kindred nature. Trommer's Extract is the best at the present writing, and, combined with cod-liver oil, or pepsin, makes a desirable and efficacious remedy. It should be taken three times a day, a tablespoonful for an adult, half the quantity for a child.

Hypophosphites.—The syrup, or solution, of hypophosphites of lime and soda, after the formula of the celebrated Dr. Churchill, has met with grand results in the treatment of consumption, scrofula, and other exhausting diseases. Its use, however, should be under the observation of skilled aid and great care should be exercised in the amount taken, since harm has resulted from drenching the system with too large a quantity. The dose for an adult is one to three teaspoonfuls each day, children a less quantity according to age.

Clothing.—Special attention should be given to the clothing, as consumptive people are very susceptible to changes in the temperature, and are liable to take cold. Underclothing of flannel, lamb's-wool or silk should be worn the year round, care being taken in the summer that it is not too warm, as it may cause much perspiration. In the winter, the addition of a vest made from chamois-skin may be worn outside the flannel. Too much care cannot be taken to prevent exposure to extreme cold, and those who are predisposed to or suffering from this disease should always be prepared

CHAPTER VII.

THE SKIN.

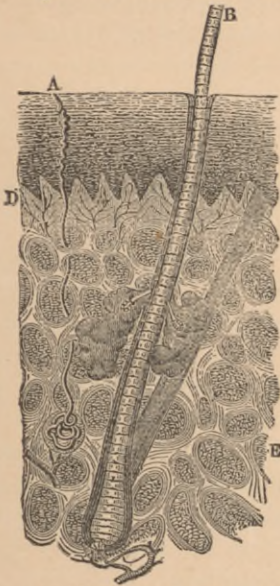
ANATOMY AND PHYSIOLOGY.

THE skin forms a thin but strong and elastic covering for the whole body. It is firmly joined to the underlying flesh, and, when viewed under the microscope, is seen to be composed of a multitude of little cells and fibers. It has two layers, known as the cuticle, or scarf-skin, and the true skin, a brief study of which will reveal an interesting and somewhat complex structure.

The scarf-skin consists of innumerable scales, visible when sufficiently magnified, which are simply rounded cells that are flattened as they reach the surface. These cells are not more than 1-25000 of an inch in diameter. They are subject to constant waste and renewal, like other portions of the body, and are cast off in the form of dry, bran-

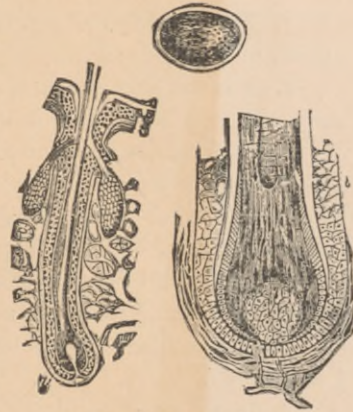
ny scales. This layer of the skin

has no blood-vessels or nerves of its own, and no sense of touch. Its deeper part, where it unites with the under layer, is called the *rete mucosum* and contains the pigment which gives the black,



40. MAGNIFIED SECTION OF THE SKIN.

C, Cuticle. D, Papillæ. E, Fat-Cells of the True Skin. A, a Pore, Sweat-Tube, and coiled Sweat-Gland. B, a Hair, with two Oil-Glands, and with a Muscle attached to the root.



41. THE ROOT OF A HAIR.

In figure a, layers of the Skin are indicated by 1, 2, 3. 4, An Oil-Gland. 5, The Hair-Sac. b is the lower part of a more magnified. c, is a Vertical Section of a Hair.

copper and other colors to the different races. This coloring matter is less abundant in the white races, and is nearly or entirely absent in the albinos.

The true skin is composed of cells, nerves, blood-vessels, lymph-vessels and glands, and is very sensitive. At its place of union with the scarf-skin are little projections, called *papillæ*, in which the nerves of touch end. Deeper down, at the bottom of the true skin, are oil-cells, or sebaceous glands, which constitute what we call fat and serve as a protective padding against external harm or cold. These glands generally terminate in the tubes from which the hair grows. In addition to nourishing the hair with the oily substance which they extract from the blood, they lubricate the scarf-skin, prevent it from drying and scaling off too rapidly, and keep the skin soft.

Over the whole surface of the body are what are popularly known as "pores." These are little tubes which are closed at the deeper end, and terminate at the other end in tubes coiled into bundles, called sweat-glands. It has been estimated that there are more than twenty-eight hundred of these to the square inch, or seven million in an average-sized man, equivalent to twenty-eight miles of the tubing. It is evident that an enormous amount of fluids can be filtered off from the blood by the extensive surface of these tubes.

FUNCTIONS OF THE SKIN.

1. The skin forms a protective and supporting cover for the whole surface of the body.
2. It is the seat of the sense of touch, the nerves of that sense being very copiously distributed in it.
3. It possesses the power of absorbing matters brought into contact with it, with more or less activity according to the nature of the substance and the condition of the skin. The true skin will absorb very rapidly and indiscriminately.
4. It is an aid to the lungs, taking in oxygen from the air and giving out a small portion of carbonic acid, with a great deal of the vapor of water. Compare the functions of breathing in the anatomy and physiology of Chapter VI.
5. It is a great regulator of the temperature of the body.
6. It is one of the main channels for the purification of the body, by throwing off the used-up or waste materials, the accumulation of which in the system is followed by most injurious results.

From foregoing remarks the reader has learned that the skin is a most important part of his organism, and that a derangement of its functions must bring serious consequences. Between it and the internal organs there

ligature. Caustery may be used. Mercurius corrosivus, two grains to a half ounce each of water and alcohol, or of water and tincture of thuja, applied two or three times a day, will sometimes remove them without resorting to the harsher methods. After cutting off the tops, one or two applications of carbolic acid will remove them. [The application of the chloride of ammonia has been found curative.—HALE.]

CORN.

A corn is usually a small, horny formation deeply seated in the skin, and painful on pressure. It is caused by ill-fitting shoes or boots.

TREATMENT.—Easily-fitting shoes or boots must be worn, in order to either give relief or effect a cure. The corn must be taken out, and this is best done after poulticing. Either the knife or a caustic may be used. If it is much inflamed or painful, a lotion of arnica tincture or tincture of veratrum viride, one part to ten of water, may be applied.

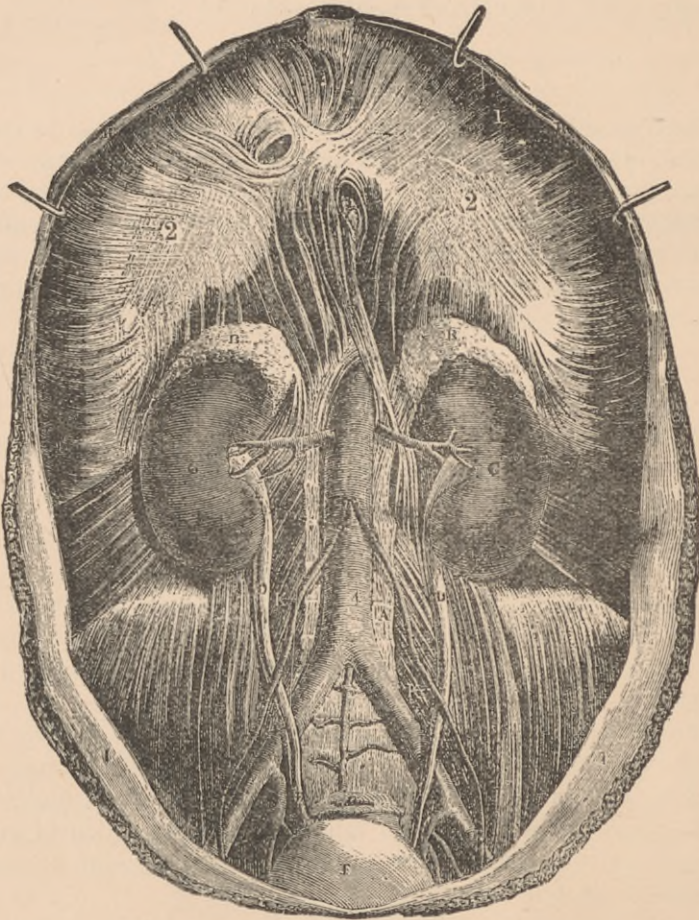
BUNION.

This is an inflammation of the large joint of the great or little toe, and is caused by the pressure of tight-fitting or narrow-toed shoes, which throw the toes together, one over the other, thus producing a sharp angle at the joint. It is attended with pain, redness and swelling, and if the cause continues, terminates in deformity of the foot, enlarging the joints by deposits which hold it permanently in this position. The discomfort attending it is so great that every means should be used to cure it in the start, for a bunion once formed is permanent, and inflammatory symptoms are liable to occur at any time.

TREATMENT.—To relieve the first inflammation and prevent the formation of a bunion, the exciting cause should be removed, the foot and toe be placed in as natural a position as possible, and a lotion of arnica be applied, one ounce of the tincture to four of water, or a lotion of veratrum viride, equal parts of the tincture and water. If pus forms, a poultice of linseed meal and poppy leaves may be applied.

BOIL.

So common is this disorder, and so varied and yet simple its general treatment, that little can be said with which all are not familiar. A boil is simply a circumscribed inflammation of the skin, usually resulting in supuration and the formation and expulsion of a "core." It is attended with severe pain, generally of a throbbing nature, and increasing in intensity



42. THE URINARY ORGANS.

C, C, Kidneys. D, D, Ureters. F, Bladder. A, Spine. 4, Aorta, with two branches supplying the Kidneys. 2, 2, Diaphragm. 1, 1, Mucous Lining of the Abdomen, turned back.

place the patient in the bed, enveloped in the blanket and covered with several other thicknesses. Perspiration will usually be profuse. If the patient seems weak after this, a small quantity of stimulants of some kind may be given.

Vapor baths are also beneficial, and are applied as follows:—Envelop the patient in a sheet wrung out in warm water, then wrap three or four thicknesses of dry blankets closely around him. Let him remain thus for twenty minutes to a half-hour, and then quickly dry him with towels and wrap him in blankets.

Cold sponging and friction with a bath-towel are highly useful. Rubbing with a dry salted towel is also good. Dip a towel in a solution of water and the sea-salt which can be obtained at a drug-store; let it dry, shake off any grains of salt that may adhere to it, and rub the body briskly and thoroughly.

The diet is important, and vegetable food is the best. The milk-cure, however, has produced wonderful results, and consists of milk exclusively. Give it cold or tepid, a half-pint every two or three hours. Such a course has been efficacious in some cases when all other treatment has failed.

The patient should have considerable outdoor exercise—as much as his temperament and strength shall dictate. A change of climate is sometimes necessary.

[Much experience and observation have convinced me that the indiscriminate use of mineral waters, particularly those of this country, so highly vaunted for the cure of this disease, oftener results in injury than in benefit. If drank at all, they should be used on the advice of a competent physician. The fact is that those waters which contain no mineral constituents are most beneficial in this disease.—HALE.]

THE GENITAL ORGANS.

Having treated of the disorders of the urinary organs, we shall perhaps be expected by some to pass on to the diseases of the genitals; but the writer will respect the public taste and feeling, and omit the details in troubles which are not topics of general conversation, and whose treatment is not appropriate here. Some general words of caution, however, will not come amiss.

Of the special books devoted to this subject there is occasionally one which is commendable in most features, and creditably fills its professed place. As some disorders in these parts may arise under the most legitimate conditions, just as in any other organs of the body, it is well that the family have

much prostration; coldness of the extremities; loose, watery diarrhœa, with greenish stools; chronic cases. The symptoms for ipecac are chills increased by external warmth; nausea; entire absence of thirst; thick, yellow coat on the tongue, which is moist and sticky; cold hands and feet. Give quinine for yellowish complexion; sinking, faint feeling at the stomach, without hunger; enlargement of the liver and spleen; slimy, bilious diarrhœa; sensibility to currents of air; depression and irritability. This remedy is especially adapted to recent cases, occurring in malarious districts. It should be used with caution, and only in cases in which it is clearly indicated. The best form for administering it is the following:

Sulphate of quinine,	10 grains.
Sulphuric acid,	2 drops.
Water,	2 ounces.

Mix.

The dose for an adult is two teaspoonfuls every two hours during the interval between the paroxysms.

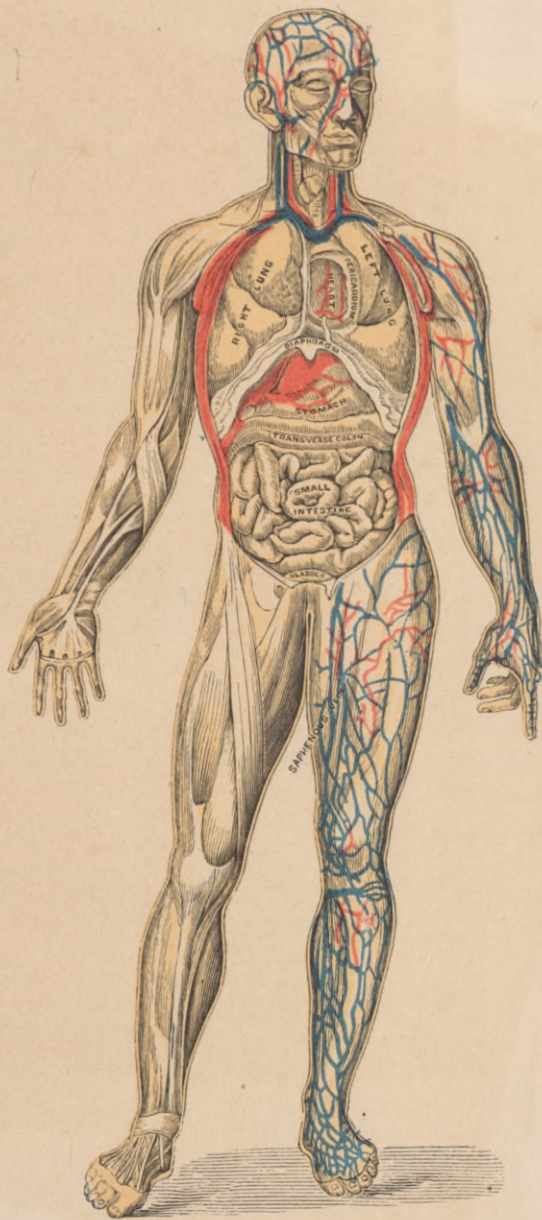
[It should be remembered by all who take or give quinine that it should not be used when the *tongue is coated*. Do not be in a hurry to break the chills, but give doses of mercurius, podophyllin, or euonymin, till the tongue is clean and *moist*; then take quinine in any form, one grain every hour or two during the intermissions. If the ague is broken up in this way, it rarely returns.—HALE.]

Sometimes the patient has a ravenous appetite during the intermission. This should be governed, and a light diet of gruel and broth be used. Animal food especially should be taken sparingly, a moderate quantity of vegetables, with plenty of fruit and water, being the most desirable.

Patients living in a malarious district would receive great benefit by a change to a more healthy locality. When this is impracticable, they should not go out in the evening air, and should sleep in an upper room, excluding the outside air as much as possible. Exercise during the day in the sunlight and open air is highly beneficial.

YELLOW FEVER.

This fearful disease expends its violence mainly in the lower latitudes of the United States, in Central America, and the neighboring islands, but has visited Canada, New England, and other Northern States, and has also invaded the western countries of Europe and different parts of South America. It is due to a specific poison, not well understood, which is generated outside of the body, is favored by animal and vegetable decomposition in a high degree of heat, and is carried from one person or locality to



THE INTERNAL ORGANS.

the least acting as a protection against scarlet fever. In fact, these diseases may prevail at the same time, and the same person be attacked by one, soon followed by the other.

Again, diphtheria has been considered an aggravated form of membranous croup. As these two, when occurring in or implicating the windpipe, are quite liable to be confounded, a tabulated showing of both is here appended:

DIPHThERIA.

1. Is a constitutional blood-disease, and depends for its existence upon a specific poison generated in the system.
2. The local manifestation in the throat is preceded by or accompanied with constitutional disturbance, as fever and general derangement of the system.
3. The exudation commences in the throat, on the tonsils, and reaches the windpipe only by extending from those parts.
4. The pain and uneasiness are first connected with the parts used in swallowing.
5. It attacks adults as well as children.
6. It is attended with great prostration and loss of strength; in adults is fatal from failure of the vital forces, and in children often by the added obstruction of the larynx, causing suffocation or paralysis.
7. The exudation is a dirty, grayish-white or yellowish color; is easily detached, the surface underneath being red but not ulcerated, and liable to bleed profusely.
8. From between the false and true membranes there exudes an offensive, sometimes bloody, discharge which imparts to the patient's breath a foul and sickening odor.
9. The glands in the throat are always enlarged, with stiffness and soreness of the neck.
10. The difficulty may extend to the nose, mouth, stomach, windpipe and the air-tubes of the lungs.
11. Is infectious and may attack whole families, or become epidemic and extend over large sections of country.

MEMBRANOUS CROUP.

1. Is a specific local inflammation, and the result of taking cold.
2. The local manifestation is not preceded by constitutional disturbance, the hoarse cough being the first symptom of the trouble.
3. The exudation is the result of the inflammation, is always found first in the windpipe and never extends above it, unless other parts are inflamed.
4. The pain and uneasiness are connected with the windpipe, causing trouble in breathing, not in swallowing.
5. Attacks children only, and rarely after ten years of age.
6. Is not attended with prostration; children often die in full strength, by suffocation, in a few hours after an attack.
7. The exudation is white or yellow, fibrinous, and cannot be detached until the disease has run its course, when it may be thrown off, in a complete cast of the tube, without bleeding.
8. The exudation is ropy, not foul, and the breath is rarely changed.
9. The glands in the throat are not swollen, and there is no obstruction to the free movement of the head and neck.
10. The difficulty never extends to the nose, mouth or stomach.
11. Is not infectious, never epidemic, and is always due to exposure to cold or changes in the atmosphere.

tion of disease-germs than any other known means. It acts with promptness and often prevents putridity and excessive accumulation of the membranous deposit. Take one part of pure alcohol to two of water, and either use as a gargle or apply a spray with an atomizer.

Hydrastia is excellent in mild cases. Add one part of fluid hydrastia to six of water, mix well, and use freely as a gargle, having the patient swallow a few drops at the same time.

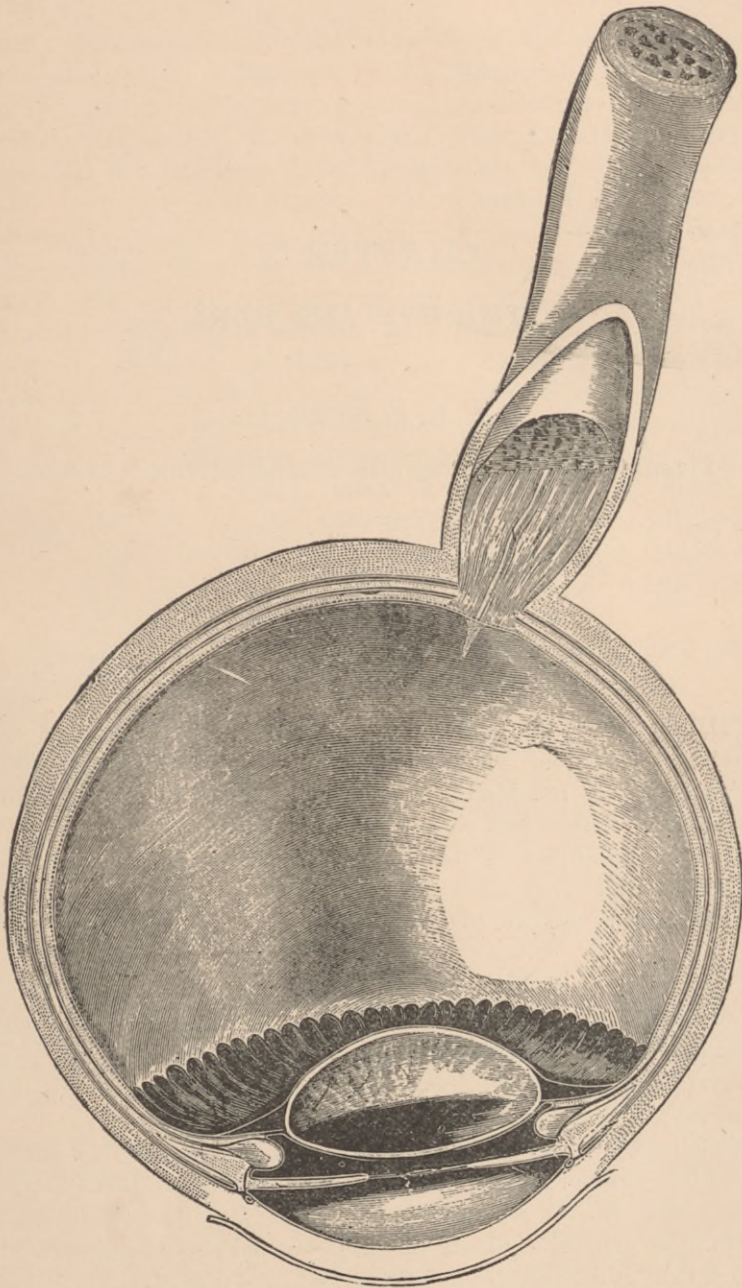
For both allaying the pain and lessening the swelling and amount of deposit, much relief may be obtained from various inhalations and vapors. The vapor of iodine is useful, and is best applied with an inhaler. If one



CHILD'S CRIB WITH A VAPOR-TENT.

is not at hand, however, it can be used in an open vessel or tea-pot as follows: Put a half-teaspoonful of the tincture of iodine in a pint of boiling water, hold the mouth over the vessel and inhale the steam—through the spout, if a tea-pot is used. The open vessel will be more convenient for use in administration to children.

Lime-vapor is also good. Make a tent or other close covering over the bed, or simply over the patient. Put into it several pieces of unslaked lime in a pan or open kettle, and pour on a sufficient amount of hot water to create a good supply of vapor for the patient to inhale, adding water or lime as needed.



43. SECTION OF THE RIGHT EYE, (Highly Magnified).

CHAPTER X.
THE EYE AND EAR.

By F. H. FOSTER, M. D.,

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SECTION I.

THE EYE.

ANATOMY AND PHYSIOLOGY.

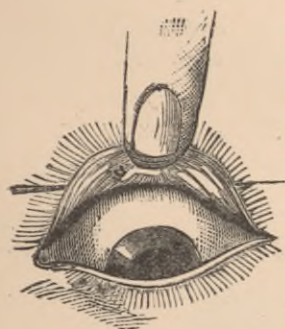
THE exercise of the senses of sight and hearing not only contributes largely to our welfare and happiness, but becomes an actual necessity to mankind in the struggle for existence. The impairment of either one to any considerable degree necessarily limits the sphere of usefulness of the person afflicted. It is therefore a matter of importance that every one understand something of the structure of the eye and ear, and of the care that should be bestowed upon them.

THE EYEBALL.

The eyeball is nearly spherical in shape, and measures about one inch in diameter. It consists of three coats or *membranes*, which surround and inclose certain transparent substances of different densities, generally known as the *humors* of the eye.

Of the membranes, the external one is of a firm, unyielding nature, and is divided into two portions: The posterior four-fifths is called the *sclerotic*, or white of the eye. It serves as a support and protection to the other coats and more delicate contents of the globe, and also as a framework for the attachment of the muscles by which the eye is moved. The remaining anterior fifth of this outer covering is termed the *cornea*. It is a highly polished, perfectly clear and transparent membrane. It can better be seen

performed. The patient is directed to look downward while the operator seizes the central lashes of the upper lid and gently pulls it down and somewhat away from the ball, making a slight pressure with the other hand by means of a probe, pencil-tip, or even with the finger, along the upper margin of the lid. It is necessary that the patient look down during the whole procedure. When the lid is once inverted, the foreign body can frequently be discovered as a minute speck lying on the red mucous surface, and can generally be easily wiped away with a soft handkerchief. Such a substance, if sticking to the cornea, and not imbedded in the substance of that membrane, can frequently be removed in the same way. If, however, two or three attempts with the handkerchief fail to bring away the offending body, it is probably imbedded and firmly fixed in the wounded tissue. It then becomes necessary to resort to some instrumental measures, and the services of the physician become indispensable, for certainly none but a careful



48. The Lid Inverted for the removal of Foreign Matter.

and trained hand should attempt to use any instrument about the eyes. In the case of children, owing to their crying and violent struggles, the administration of an anæsthetic often becomes necessary.

A quite frequent occurrence in the harvest-field, and one often productive of the most disastrous consequences, is the striking and lodging in the eye of minute particles from the beard of the grain. It is liable to be followed by a most destructive inflammation of the cornea in a very few days, and sometimes even hours, if the removal of the substance is neglected. Again, in some instances the eye seems to tolerate the presence of a foreign body for an indefinite time without much resentment. The writer recently removed the seed of a sunflower from beneath the eyelid of a lady who was positive that three weeks had elapsed since the time of the accident. The seed bore evidences of having been in contact with a liquid for some time, being considerably swollen and softened. She had experienced no pain and scarcely any inconvenience, being only reminded of it at times by a feeling of something moving under the upper lid.

Even after the removal of a foreign body from the eye, the same painful sensations may remain for some time, owing to the tissue being wounded or abraded. If the symptoms of irritation are persistent, the eye should be frequently bathed in cold water, a handkerchief be carefully tied around it, and all usage of the organ be stopped until such symptoms have ceased.

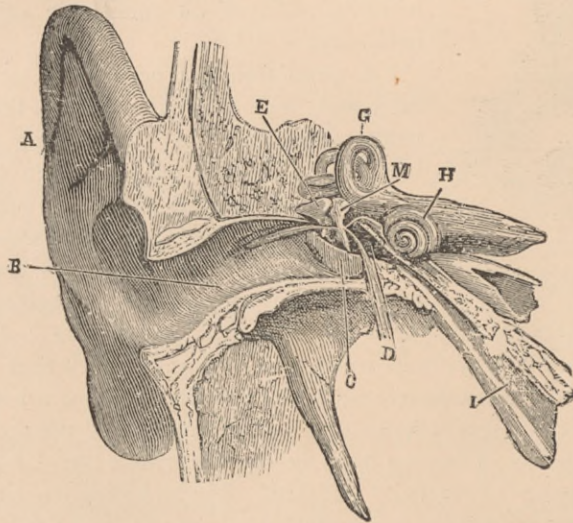
In case of a burn or scald of the eyes from hot liquids, a few drops of

SECTION II.

THE EAR.

ANATOMY.

ANATOMISTS make three divisions of the ear, the external, middle and internal. The external comprises the auricle and auditory canal. The middle consists of the ear-drum, or tympanum, the Eustachian tube, and the mastoid cells which are located back of the drum. A membrane, commonly called the drum-head, separates the auditory



51. SECTION OF AN EAR.

A, Auricle. B, Auditory Canal. C, Half of the Drum-Head. E, Incus, or Anvil. M, Malleus, or Hammer. H, Cochlea, or Snail-Shell. G, Semi-circular Canals. I, Eustachian Tube. D, Small Muscle.

canal from the cavity of the drum. The internal ear is otherwise known as the labyrinth, from the complicated structure of its numerous membranes, chambers and passages. Its main part is a large central cavity, called the vestibule. Into the front of this cavity opens a spiral-shaped passage which

diameter, and less than one two-hundredth of an inch in thickness. Though so delicate, it can be separated into three distinct layers. The outer layer, as noted above, is a continuation of the skin lining the auditory canal; the inner one is a like continuation of the mucous lining of the drum; the middle layer is composed of fibrous tissues and forms a framework for the other two.

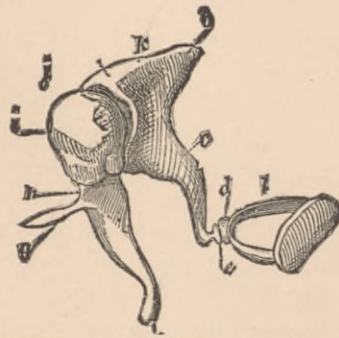
THE MIDDLE EAR.

The Ear-Drum.—This drum or cavity, called also the tympanum, is a little six-sided chamber measuring about a half inch from top to bottom, the same from front to back, and about one-sixth of an inch from within outward. Its roof consists of a thin plate of bone which separates this cavity from the one which incloses the brain; directly beneath its floor passes the jugular vein, one of the large blood-vessels coming from the brain; on the front wall of the cavity can be seen the opening into the



54. BONES OF THE EAR.

1, 2, 3, Hammer viewed from different positions.
4, 5, Anvil so viewed. 7, 9, Stirrup.
8, Foot-Plate of the Stirrup.



55. ARTICULATED BONES OF THE EAR.
(four diameters.)

f, g, h, i, j, Hammer. a, k, b, c, e, Anvil.
d, l, Stirrup.

Eustachian tube described below; a large part of the back wall is taken up by the opening into the mastoid cells; the outer wall is made up mostly of the drum-head; the inner one is bone and forms the division between the drum-cavity and the internal ear, or labyrinth. In the bony partition just mentioned are two apertures, one oval, the other circular, both leading into the labyrinth, the circular one being closed by a delicate membrane which is called the second drum-head; the office of the oval one is mentioned immediately below.

Within the ear-drum, and stretching from its outer wall, or drum-head, to its inner wall of bone, is a little chain composed of three minute bones, known as the *malleus*, or hammer, the *incus*, or anvil, and the *stapes*, or stirrup, the names being derived from a resemblance respectively to the

implicated, though the severity of the sensations is less marked. The predominating symptom is a persistent and obstinate itching, together with which there is often some pain, with a sensation of fullness and impairment of the hearing. The skin lining the ear is dry, red and thickened, and there is a notable absence of the ear-wax. The disease is often caused by digging or picking the ear with an ear-pick or hair-pin, or by dropping into it oils or some substance which is resorted to for the relief of toothache.

TREATMENT.—This can hardly be undertaken by one other than the physician. In case of pain the ear can be syringed with warm water, and for the relief of the itching a small quantity of cosmoline can be smeared over the irritated and diseased surface; but for anything further competent medical advice should be sought.

HARDENED OR ACCUMULATED WAX.

The ear-wax in a state of health is soft, of an oily nature, and yellow in its color. It is secreted in small quantities, and the natural tendency of the ear is to expel it without any external assistance. But it is sometimes secreted in such large quantities that nature cannot remove it in the ordinary manner. It is then abnormal in quality as well as quantity; instead of the yellow color, it appears dark-brown, sometimes quite black; and from a soft, yielding substance, it may become as hard as a stone. The changes come about gradually, and so long as the auditory canal is not entirely blocked or obstructed, one may be unaware that any trouble exists; but some morning he may find himself quite deaf. The condition is all the more unaccountable because the night before the hearing was apparently perfect. But the plug of wax which has slowly been gathering and hardening has slipped or been pushed down on the drum-head, and, stopping the canal as well, has produced this sudden deafness. Together with the impairment of hearing, there will frequently be associated pain, noises in the ear, and dizziness. The peculiarity of the trouble is the sudden nature of the attack. It may come on after bathing and getting water in the ears, and is often brought about by cleaning the ears out with the twisted end of a towel. The patient nearly always refers the trouble to a cold, and as this is a disease of the ear that is usually quickly relieved, he realizes, after receiving help, that the hearing has not for a long time been what it should have been.

TREATMENT.—Although the symptoms of this affection are well marked, it can be positively decided upon only by an inspection of the ear with the proper instruments, which must be done by the physician. After the diagnosis is once made, the removal of the obstruction is accomplished by the use of warm water and the syringe, or any other appliances adapted

CHAPTER XI.

EMERGENCIES AND DOMESTIC SURGERY.

IMPORTANT HINTS.

CUTS, bites, blows, sprains, burns, stings, poisoning, bleeding, fainting, choking, drowning, suffocation, fractures, dislocations, and other misfortunes come within the daily observation of almost everybody, but there is a deplorable lack of intelligence in meeting them, often in treating even the simplest and most common. Their frequency ought to convince every one that it is his duty to give to them some special study, particularly to the more urgent.

An eminent German surgeon has said that he has very often lamented the fact that so few people know how to render the first aid to those who have met with sudden injuries, and further remarks that many die miserable deaths every year who might have been saved by prompt service if those near them knew how to give it. Though the gravity of the subject demands for it special study and attention, it is far from the aim to dispense with the services of the physician by the use of the present work. On the other hand, the same urgency which calls for a universal knowledge of these matters should show the reader that immediate professional aid is imperative in many cases. It is hoped that one may here learn how to preserve presence of mind and give the right kind of help until the physician arrives.

1. *Be Ready for Accidents.*—An emergency leaves little time to read directions for giving aid. *By studying a few minutes now* you can secure a preparation which will give you confidence and efficiency in many accidents of common occurrence. Read over this part of the book, especially what is said on Bleeding, Wounds, Bites, Fainting, Choking, Drowning, Suffocation, Poisons and Antidotes. One should read such directions repeatedly, that he may gain the greater familiarity. He will thus be more fully armed for emergencies.

2. *Be Calm.*—If a case is urgent it certainly demands coolness. More good can be done in one minute with presence of mind than in ten without it.

Self-control in crises will be insured in great measure by an observance of the hint above on being ready for accidents.

BLEEDING: HOW STOPPED.

"It is a terrible position," says Professor Esmarch, the surgeon alluded to above, "to stand in view of some accident, to see the red blood pouring unceasingly from the wound, to see death every moment approaching nearer and nearer, and not know how to avert the threatened calamity." To gain a knowledge of this important subject the reader should first review the brief introduction on the circulation, Chapter V, noting especially "Circulation Described" and "The Pulse." He will there learn the general distribution of the veins and arteries, the serious nature of arterial or *sputing* hemorrhage, and see that a pulse-beat, wheresoever found, shows the presence of an artery.

When small arteries or veins are cut or broken, the bleeding will generally soon stop of its own accord by clotting. It is always well to aid this process by exposing the wound to the air. Further assistance may be given by applying cold water or cloths of pounded ice; and this expedient, since it contracts the blood-vessels and thus impedes circulation, is often alone sufficient. The pernicious practice of removing cloths when saturated with blood and then putting on others, or putting cloths on those already saturated, only makes the case worse.



57. STOPPAGE BY LIGHT PRESSURE.

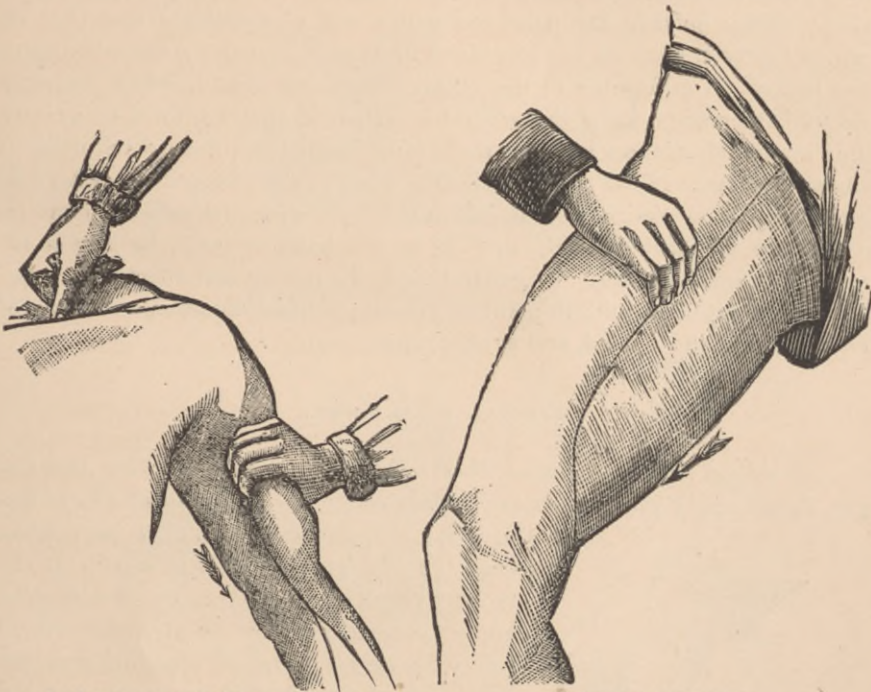
Stoppage in even severe cases may be effected by simply pressing the lips of the wound together, and thus closing the severed vessel until the clot forms. The circulation is thus restored just as one may bring the ends of a severed rubber tube together in the fingers so that a liquid may pass through, with little or no leaking so long as the ends are kept together. This method will be sufficient in the great majority of slight cuts on the hands and other parts of the skin. For some of the simplest wounds, as those on the face from the razor in shaving, carefully wipe off the blood and thrust down into the opening the point of a sharpened piece of alum. This will stop the blood if repeated until the severed vessel has been touched.

A tight girdle, garter, or other band will aggravate bleeding from a

vein, if it is on the side of the wound next to the heart. All such should be removed at once when they obstruct the passage toward the heart.

In serious bleeding, whether from an artery or vein, the above directions are not applicable, and pressure is needed.

Simple Experiments.—By proper searching and pressure with the fingers we detect pulse-beats, and thus learn of the existence of arteries, in the following locations:—1. On the wrist and forearm, back of the base of the thumb, between the shoulder and elbow, down between the two large mus-



58. ARTERY IN THE ARM AND SHOULDER.

59. ARTERY IN THE LEG.

cles; and in the armpit. These points are all in the artery that supplies the arm and hand. 2. In the middle of the groin; down the middle of the inside of the thigh; and on the inside of the ankle. These are points in the artery that supplies the leg and foot. 3. In the neck on either side of the windpipe; and on the temple. These are in arteries which supply the neck and head. 4. Just above the collar-bone, where the artery passes down behind that bone to supply the shoulder and armpit; this artery is continued by the one that goes down into the arm. It will be readily seen that 1 and 2 traverse the parts which are specially liable to injury in ordinary cuts.

into bleeding wounds, both those got from the chemist, such as perchloride of iron, yellow charpies, etc., and more popular remedies, such as spider's web. It is possible by such means to arrest trifling hemorrhages, but properly applied pressure attains this end much better. * * * * You find these styptics in some of the small packets used in giving 'first aid', but from their presence you may know that such packets have been put together by inexperienced persons."

Elevate the Wound.—As an experiment, stand a moment with one arm lifted above the shoulder, the other being left to hang loosely at the side. Then quickly compare the palms and you will see that the one which has been held up has less blood in it, as indicated by the absence of the redness so noticeable in the other. Thus we should, when stopping severe hemorrhage, keep the wound elevated so that the force of gravity may oppose circulation and thus materially lessen the pressure required to check the flow. If the wound be in the hand or arm, keep it up as high as a sling can conveniently hold it. If in the foot or leg, the patient should lie down and the limb be held up. If in the head or neck, he should remain standing or sitting. In general, keep the patient and affected member in such a position as will, in point of gravity, be least favorable to a flow of blood toward the wound, and avoid exciting him.

SPECIAL DIRECTIONS.

Bleeding in the Hand or Foot.—To check arterial bleeding in a finger, firmly apply pressure on each side, close to the hand, as shown in figure 60; a like pressure should be applied near the foot for a wound in a toe. If the wound be in the hand above the fingers, apply pressure at the point indicated in figure 61, thus cutting off circulation in the hand. For a wound in the foot, put the pressure on the inside of the ankle.



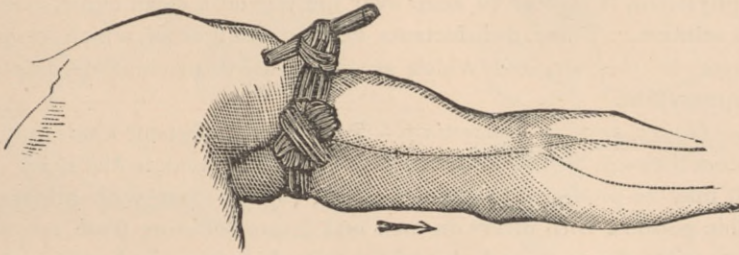
60. PRESSURE ON THE FINGER.

Bleeding in the Arm or Leg.—For a wound above the wrist, or one above the ankle, apply pressure as shown in figures 62 and 63. For injuries in the upper part of the arm, pressure may be secured by placing a thick stick between the arm and chest, and binding the arm tightly to the body, as illustrated in figure 64.

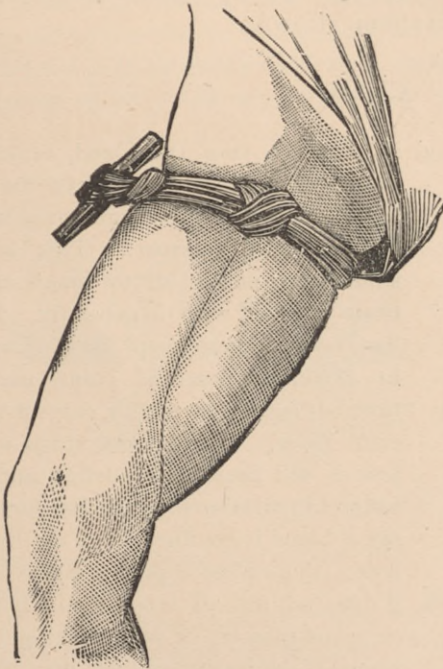
Bleeding at the Armpit.—If bleeding occurs in the armpit, or in the



61. PRESSURE ON THE WRIST.



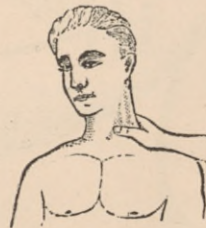
62. PRESSURE ON THE UPPER ARM.



63. PRESSURE ON THE THIGH.



64. PRESSURE UNDER THE ARM.



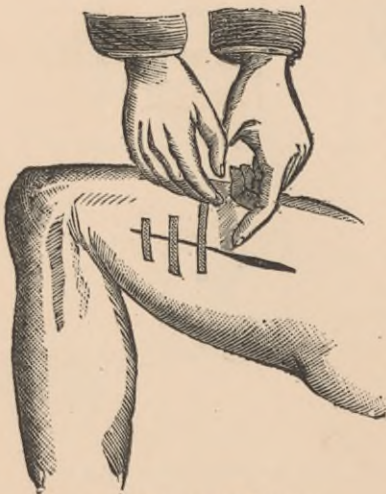
65. PRESSURE ON THE NECK.

2. *Prevent Suppuration.*—If it is clear that the case may be treated without a physician, *remove and keep out all impurities.* Neglect of this precaution has led to suppuration and even death from slight injuries. No wound is so slight that it may be neglected. With the greatest pains remove all foreign substances and wash the wound in clean water, applied with a syringe or a piece of clean, soft linen, being sure that no lint and threads are left in the wound. It is well to mix some disinfectant with the water, such as carbolic, boracic or salicylic acid, or chloride of zinc. Even when waiting for a physician, it is best to keep over the wound a clean cloth soaked in such a solution. These disinfectants destroy the germs which may exist anywhere in the air, and which are supposed to produce decomposition and suppuration.

3. *Guard against Poisoning.*—Poisons of malignant kinds may enter the system through any wound, however slight the break in the skin. Such a result may be produced by contact of the injured part with mineral and vegetable poisons, with ulcers on men and beasts suffering from contagious diseases, with diseased and decaying animal matter, and with poisoned wounds in general. The best preventive, next to absolute absence of contact, is the washing of the hands or other parts exposed to contamination in a lotion of carbolic acid, or in strong alcohol.

CUTS.

Dressing.—When a wound is clean-cut, stop the blood, remove all



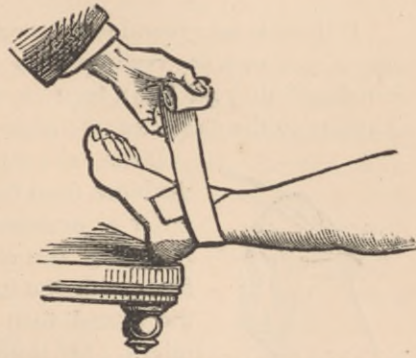
66. DRESSING WITH PLASTER.

foreign substances, neatly draw the edges together, and secure them thus with a bandage and pressure. This will be sufficient in nearly all the small cuts, as those inflicted with a penknife. If the bandage will not keep them *accurately* in place, an essential point, use plasters, but *never completely cover a wound with them.* Use narrow strips and as few as will preserve a perfect union, because suppuration will almost surely ensue if blood is confined in a cut by plasters. The *adhesive* plaster is the best, as it does not fall off when wet. Isinglass or court-plaster, or any sticking tab or stamp, if not poison or dirty, may be used, though none of these will be serviceable

keep them wet as before. If blood or pus is found, remove it with a soft brush or sponge, carefully avoiding disturbance of the wound or straps. Should a strap be loose, remove it *very gently*, one end slowly at a time, keeping it soaked in warm water; if it adheres very closely at any point and further removal threatens to open the cut, clip it off and leave the remnant

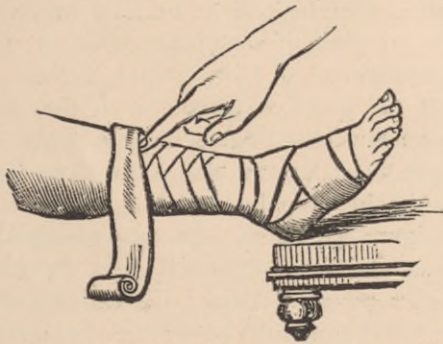


67 A. BANDAGED HAND AND WRIST.



68. FIRST TURN IN BANDAGING THE ANKLE.

to come off at a later dressing; with soap and water sponge off the sticky residue left by the plaster, and apply a fresh strip. In all the dressings after the first, use only as much water as is necessary in removing the coverings and sponging off blood and matter (not lymph), *without freely washing*



69. LAST TURN IN BANDAGING THE FOOT AND ANKLE.



70. BANDAGE FOR THE HEAD.

the wound. Greasing the surface will aid in removing sticky residue of the plaster.

Arnica and aconite, in alternation, may be given for some hours if there are fever and throbbing of the parts. For much pain and swelling, with headache, give belladonna in alternation with aconite. Hepar is needed

this urgent caution is given, not because the presence of the instrument is attended with extraordinary danger. Indeed, needles have remained in the muscles for months and years, traversing different parts of the body without causing pain after their entrance.

BITES: MAD DOGS AND OTHER ANIMALS.

If there is no ground for suspecting that the animal is mad (for symptoms of madness, see Hydrophobia in the part of this book devoted to the animal inflicting the bite), treat as for Punctures, Bruises, or Lacerations, according to the character of the wound produced.



71. TO EXCLUDE POISON FROM THE SYSTEM.

If the animal is mad, or in the least suspected, prevent the blood from flowing from the wound toward the heart, as far as practicable. This is best done by *immediately* removing the clothing, when necessary, grasping the flesh with the teeth so as to take in the full depth of the wound, then pressing and sucking with all of one's might. Of course the spittle should be most carefully thrown from the mouth at once. Friends of the patient should abstain from this sucking if they have any break in the skin about the lips, or in the mucous membrane of the mouth, and should also prevent contact of the blood or other discharge from the bite with breaks in the skin on any part of their bodies. Such a precaution is not so imperative in the patient, since he has already been infected. In place of such a procedure, if friends can not suck the wound, or if the patient is alone and can not reach the point of trouble with the mouth, forcible pressure with the fingers may be resorted to. As soon as possible after the bite, a handkerchief or other ligature should be applied close up to the wound, as shown in figure 71, as an accessory means to the sucking and cauterization. This will check the flow

of blood back into the system and thus materially lessen the chances of that infection which often lurks in the blood, keeps the patient in constant dread that hydrophobia will set in, and thus produces a mental unrest that is most prejudicial.

After the above step has been taken, or when it is impracticable, thrust down into the wound some small iron or other metal, raised to a red (not black) heat, a white heat being still better, holding it there until the flesh all around and to the bottom of the wound has been thoroughly seared. A

parts. If fever-symptoms come on, give aconite; belladonna, if there is much swelling or headache. Keep the body cool.

BURNS AND SCALDS.

CAUTION.—So many serious injuries result from fire in clothes, curtains and other fabrics that we recommend that in washing them, especially the clothes of children, the last water used in the rinsing contain some alum. This is a simple, cheap and convenient precaution, renders the clothes less inflammable, and may be the means of avoiding the saddest of accidents.

Unlike most wounds of the flesh, burns and scalds are serious in proportion to the *extent of the surface* affected, not to the depth. It is of much importance that this be known. If any tissues are destroyed, a scar will inevitably be formed, and according to the extent of its surface will “draw” the adjacent parts, producing disfigurement or even the greatest deformity, even though it be treated by a skillful physician. There is, therefore, a necessity for immediate attention, to keep down the scar as far as possible.



72. EXTINGUISHING A BLAZE.

In a burn, the first thing to do, of course, is to put out the fire. If it is in the clothing, the patient should not run about, since that will fan the flames, nor should he utter cries, for thereby flames or steam will be inhaled. By his own hands, or by friends who may be near, he should be quickly wrapped in a cloak, blanket, coat, rug, or other covering,

and be rolled about. If a bed is at hand, it furnishes a good means, though it may increase the danger of setting fire to the house. Mere rolling on the floor or ground may be sufficient, and should always be resorted to, whether covering is at hand or not. Dashing water on the flame is not as reliable as the smothering mentioned, and should *never* be resorted to for the purpose of putting out the flames in a lamp, or in any fire where oil or acids can be scattered by the water, for it will then only increase the fire.

In extinguishing a fire and in cases of scalds, *keep the flames and hot steam away from the mouth and nostrils*, because their entrance into the lungs is attended with the gravest results. In addition to this precaution, the face, neck and hands should be protected as much as possible, because any subsequent disfigurement of these parts will be more conspicuous. After the flames have been quenched, pour water on any remaining embers



74. INSPIRATION.



75. EXPIRATION.



76. A PART OF THE MICHIGAN METHOD.

NAME.	CLASS.	NAME.	CLASS.
Poke.....	XXVI	Spanish Fly.....	XXIV
Poppy.....	XXV	Spigelia.....	XXV
Potash, Bichromate.....	XIV	Stramonium.....	XXV
—— Caustic.....	XI	Strychnine.....	I
—— Cyanide of.....	XVII	Sumac.....	XXVI
—— Iodide of.....	XIII		
—— Nitrate of.....	XII	Tansy, Oil of.....	XXVI
Potato Balls and Sprouts.....	XXV	Tartar Emetic.....	VIII
Potato Bug or Fly.....	XXIV	Thorn Apple.....	XXV
Prussic Acid.....	XVII	Toadstools.....	XXVII
Pulsatilla.....	XXVI	Tobacco.....	XXV
		Toilet Powders.....	VII
Quick-Silver.....	IV	Verdigris.....	V
		Vermilion.....	IV
Ratsbane.....	II		
Realgar.....	II	Wall-Paper.....	II
Red Precipitate.....	IV	Wells, Gases from.....	XXIII
Rum.....	XXII	Whiskey.....	XXII
		White Precipitate.....	IV
Saffron.....	XXV	White Vitriol.....	IX
Sal Ammoniac.....	XI	Wild Cherries.....	XXVI
Saltpetre.....	XII	Wines.....	XXII
Sanguinaria.....	XXV	Wines (Poisoned).....	III
Savine, Oil of.....	XXVI	Wolfsbane.....	XXV
Scheele's Green.....	V		
Sea Onion.....	XXV	Yellow Jessamine.....	XXV
Silver, Nitrate of.....	X	Yew.....	XXV
Skunk's Cabbage.....	XXV		
Soda (Baking).....	XI	Zinc, Chloride of.....	IX
Soothing Syrups.....	XX	—— Sulphate of.....	IX
Sorrel, Salt of.....	XIX		

I.—STRYCHNINE.—NUX VOMICA.—DOG-BUTTON.

SYMPTOMS.—This is one of the most rapidly fatal poisons known. In a very short time after it has been swallowed, distress comes on, followed by convulsions; screams; locking of the jaws; livid face; head and heels turned back; muscles of the abdomen rigid; death. The mental faculties are retained to the last.

TREATMENT.—Give an emetic at once until the stomach is thoroughly cleansed. Pour cold water on the head and make alternate hot and cold applications on the spine. Put over the heart cloths wet in hot water and apply friction to the surface. If breathing is feeble or has ceased, use Artificial Breathing, Circulation, Warmth and Strength (see "Drowning"). Before the jaws close in convulsions, put a cork or stick between the teeth, so that remedies may be artificially administered if necessary. Poisoning by strychnine is similar to suffocation, and the artificial means for restoring respiration may be efficacious some time after breathing has stopped. If convulsions have commenced before treatment has been begun, let the patient cautiously inhale chloroform. Large doses of veratrum viride are also very highly recommended for internal treatment.



82. MAIDENHOOD.

CHAPTER XII.

THE MAID AND THE WIFE.

SEX.

UNDER the same circumstances the childhood of one sex, if left to nature unrestrained, does not greatly differ from that of the other. It is a matter of frequent remark that the little boy and little girl engage with like zest in the same sports, and that, though a difference is always perceptible, the habits of the two are strikingly alike. After a time, however, a radical change begins in both, causing a divergence in tastes, bodily form, features, manners and pursuits. The separation grows wider and wider each year until all those characteristics have been developed which distinguish the man from the woman. The playful, thoughtless and innocent familiarity of childhood's days gradually gives place to the reserve which nature and propriety impose, and which perhaps makes the two upon reaching maturity little less than strangers to each other. This transformation is the outgrowth of an inherent difference which does not assert itself in the early years. The nature and importance of the transition should be understood by all, but the present subject does not lead us to speak of it as it manifests itself in the male sex.

OVULATION AND MENSTRUATION.

In woman, the basis of the change noticed above is found in the development and functions of two small, firm organs, called the ovaries, in size and shape resembling large almonds, which are located above and at the sides of the womb. Each is connected with the womb by a tube about four inches in length, known as the Fallopian tube. Within the ovaries are a great many diminutive vesicles which at their maturity contain eggs, or ova, one of which is necessary to the production of a new being.

Every four weeks, with few exceptions, a vesicle bursts from its ovary and liberates the egg, thus effecting the function of *ovulation*. The egg thus set free traverses the Fallopian tube into the womb, and is thence expelled and lost. This process is attended with an exudation of ordinary

venous blood through the mucous lining of the womb, known as *menstruation*, the monthly flow, or the menses.

The Mother's Advice.—In the United States the average age at which menstruation begins is fourteen and a half years. In some it appears earlier or later, according to the general physical development. Girls who are stimulated by the influences of society, particularly in the cities, generally experience it earlier than those who live in the more quiet country. Warm climates and rapid growth also favor early menstruation. With some the period is delayed until the sixteenth or eighteenth year. Whatever the age, it marks the era of fertility, or puberty, and its approach should be a signal to every mother to teach her daughter to expect the change peculiar to her sex, so that she may be prepared to protect herself from unnecessary exposure to cold and fatigue, and thus insure her future good health.

“Some girls, in their ignorance and false notions, look with disgust upon this function and designedly or carelessly use cold baths or other means for suppression, and they have a life-long invalidism as a consequence.” The recurrence of the menses at regular periods is one of the most important functions of the female organism, and it should not only never be interfered with but should always be most jealously guarded. However much good advice may be given in books of this kind to girls and young women, nothing can take the place of the mother's kind instruction and advice in warding off the excitement incident to the first appearance of this function and in correcting subsequent imprudence. Details upon this matter are omitted here so that mothers may be left with the full responsibility of a duty which some are too prone to neglect. Besides, a sense of modesty makes the maiden shrink from having detailed directions upon her peculiar anatomy open to the eyes of all readers of a work of this nature, and a respect for that feeling has led the writer to pass over such details. Yet she would not thus ignore the urgency of her obtaining the needed knowledge of herself, but would insist that she secure a suitable book, upon the advice of a physician or other qualified counsel, that will treat the subject adequately and temperately.

Duration of the Menses.—The duration of the monthly period varies in different individuals. Though it is generally about four days, in some it is six or eight. While the interval between the periods averages about twenty-eight days, it may vary moderately in the same individual without causing any material disturbance. In exceptional cases, menstruation takes place every three weeks; in still other cases perhaps but once in six weeks; yet the girl or woman may enjoy good health.

Cessation of the Menses.—Menstrual life, or the period of fertility, continues about thirty years. Its cessation, or, as it is commonly known, the

"change of life," is spoken of more particularly among the disorders considered below. It is a critical time in a woman's life.

DELAYED MENSTRUATION.

Though the period of the first menstruation may in some cases be delayed much beyond the average age, as noted above, often without inducing poor health or inconvenience, such delay becomes a subject for anxiety if it continues after all the external signs of womanhood have appeared. In the latter condition, there will be excessive languor, drowsiness, periodic sickness, irritability or frequent change of temper, pain in the head and along the spine, palpitation of the heart and shortness of the breath upon the slightest exertion, pain in the lower part of the bowels and between the thighs—all showing that nature is unsuccessfully trying to establish the menstrual function and is in need of some rational assistance. The cause of this derangement in the majority of cases is probably an original delicacy of constitution, or some long-standing chronic affection. Oftentimes it will be found that the disturbances supposed to be due to delayed menstruation really arise from deficient or innutritious food, or from sedentary habits. Tardy menstruation also occurs in girls who are predisposed to any form of consumption. Sometimes it is attended with an exudation of blood through the mucous surfaces of the respiratory passages, and the spitting or vomiting of blood naturally causes alarm.

TREATMENT.—In the treatment it is best to first ascertain whether there be any structural cause, any lack of development, or any deformity of the organs of generation. If the physician, upon an examination, finds no mechanical obstruction, remedies may be given as here directed.

Iron in some form is a leading remedy when absence of menstruation is associated with debility, languor, palpitation, indigestion, and sickly complexion. Phosphorus is useful for persons of delicate constitutions and sensitive lungs, and for those in whom expectoration of blood in small quantities takes the place of the menstrual discharge, with cough and pains in the chest. Give iodine or iodide of potassa to scrofulous patients with enlarged glands and a lymphatic constitution. *Calcareo carbonica* is suited to constitutions similar to those needing iodine, but with chronic indigestion, heartburn and hysteria. *Calcareo phosphorica* is an excellent remedy when the patient has a confirmed cough, with hectic hoarseness, emaciation and debility. Scrofulous patients troubled with leucorrhœa and itching of the genital organs are benefited by sulphur. *Pulsatilla* is indicated by delayed, suppressed, or irregular menstruation; pains in the abdomen and loins; hysterical symptoms; nausea; vomiting; palpitation of



83. THE MOTHER AND HER BABE.

CHAPTER XIII.

THE MOTHER AND HER BABE.

SECTION I.

THE MOTHER.

MARRIAGE AND PARENTAGE.

MAN and woman are complementary to each other, mutually dependent for health, happiness and virtue. Marriage is necessary to the perfection of their being, and if suitable and happy will lengthen life. One of the objects of the conjugal union is the transmission of life, and it is a solemn duty to insure to the offspring as vigorous minds and bodies as can be secured by the most conscientious pains-taking. To be sure, the responsibility rests upon both the husband and the wife. If their growth or development is defective, there must be imperfection in the offspring. No organism should reproduce while it is itself incomplete, a remark which may be applied to early marriages. When the marital relations are assumed too early, the development of the prospective parents will be more or less arrested, and their offspring will have a heritage of proportionate feebleness. It is impossible to fix an age for all individuals at which marriage is advisable, because some arrive at the requisite maturity earlier than others. Though it is often said that the proper age for the woman is from twenty to twenty-three and that for the man from twenty-three to thirty-three, the figures seem quite arbitrary, and it is safer to say that both should attain to a healthy and substantial maturity. Yet it is important that the development be both physical and intellectual, for the two kinds are so far from always co-existing that they often exhibit a marked contrast. Besides, the moral part of one's being exerts such an influence upon the mind and body that on both physiological and higher grounds it must be admitted that the happiest issue of marriage can be experienced only when the moral sense of both husband and wife is pure and elevated. Though education and proper attention to

the laws of life and health may improve an imperfectly organized embryo or child, the fact remains that the quality of the germs furnished at the period of impregnation will influence the offspring throughout life. It is therefore a matter of serious moment that the expectant father and mother maintain the best possible health, with temperance in all things, the mind being cheerful and elastic, and the body active and vigorous, in short, with all possible essentials of good health. Parents who transmit disease or weakness to their offspring, causing it to decay before its full development or linger on in pain and debility, are certainly infringing upon the most sacred rights of posterity. We now speak more particularly of the mother.

MATERNITY.

From the beginning of the divergence of the two sexes which was spoken of in the last chapter, the girl gives more or less marked evidences of those instincts and affections which develop with her age, and are called maternal in her later years. These are a natural and inseparable part of her being, a spiritual element of her life, whose purity, strength and elevation very largely determine the type of a woman that she is to be. When she becomes a wife, their intensity is heightened until the impulses to maternity take rank among the strongest and noblest of the human breast. Conscious however that increased responsibilities are to be imposed upon her by maternity, with more or less anxiety and even pain, she very naturally wishes to know how to care for herself during the periods that precede and follow the birth of her babe. With such matters we are now concerned.

SIGNS OF PREGNANCY.

When a young married woman in good health ceases to menstruate she should know that she is probably pregnant. Absence of the menses is the rule in pregnancy, though there are exceptional cases in which the discharge takes place regularly during the continuance of this condition. In most cases "morning sickness" occurs at any time from two to six weeks after conception, and is one of the most annoying and disagreeable experiences of pregnancy. A sensation of fullness, with a throbbing, tingling pain in the breasts, accompanied with their enlargement, is one of the signs which are less evident to others though especially noticeable to the prospective mother. The delicate pink-colored circle around the nipples seen during maidenhood becomes several shades darker. This is more especially true of the first pregnancy, and the original color does not return. The presence of milk in the breasts is considered very conclusive evidence of pregnancy but it is often

THE BABE: ITS CARE AND TREATMENT.

SECTION II.

TABLES of mortality present a pitiable spectacle of deaths among infants and young children. Of ten thousand human beings born about one-third die before the fifth year, nearly one-half of this number coming into the world lifeless or dying on the birth-bed. Even after the crisis of the first day has passed, a distressingly large number pass away before reaching the age of one year, and three-fourths as many die before the second year closes. The first year is a critical one and the babe who passes it in health will be fortified against many of the ills which subsequently ensue. The object of this chapter is to fill a great and conspicuous gap, left open by books of this character, by telling the young mother what general care and treatment she should bestow on her babe during the days when she knows that it often suffers without being able to make known its pains and wants in an intelligible way. It is a pleasure to acknowledge as the source of a great part of the suggestions a little work entitled "What Every Mother Ought to Know," by Dr. Ellis, whose wide experience in the treatment of children is a sufficient guarantee of the value of what is offered.

The diseases which are incident to the first few days of the child's life will be first considered, since their treatment more properly comes in close connection with that of such disorders as afflict the mother. Other diseases of childhood are treated in the earlier chapters of this book.

PROTRUSION OF THE NAVEL.

Carelessness, bad dressing of the navel, and sometimes a natural weakness of the muscles of the abdomen cause the navel to protrude. This condition ought not to be neglected.

TREATMENT.—The navel should be gently worked back into place with the fingers and be held in place with a little pad made of a coin, convex button, or other body of like shape and weight, covered with several thicknesses of cotton, the whole being secured by a band passed around the body.

CRYING AND RESTLESSNESS.

Infants often cry and are restless and sleepless without any apparent cause. Nervous irritability from atmospheric changes and deranged digestion are among the most common causes.

TREATMENT.—If any treatment is undertaken, avoid all stock “soothing syrups” and cordials which annually kill so many children. (See other remarks on this topic on page 357 and in the following pages of this section.) A few drops of chamomilla will usually relieve all the trouble; it may be alternated with aconite if fever be present. The fault is often in the clothing, and their removal followed by gentle rubbing of the body will many times afford the desired relief.

INFLAMMATION OF THE EYES.

Too sudden exposure to light, contact with the discharges of the mother at birth, uncleanness and a scrofulous constitution are often the causes of this malady. The mucous membrane lining the lids, together with the glands within their edges, are the diseased parts, showing redness, agglutination of the lids, great sensitiveness to light, and a profuse discharge of thick, yellow pus.

TREATMENT.—Keep the eyes clean by washing them often with a fine sponge and tepid water. Use a camel’s-hair pencil to clean under the lids. A solution of ten drops of fluid hydrastia in an ounce of warm water may be rubbed on the eyes once or twice a day, and cloths wet in the same may be laid on if there is much inflammation. Many times the mother’s milk is all that is needed, a few drops being put in the eyes at each nursing. Cold tea and milk are good for lessening the heat and inflammation.

“SNUFFLES.”—OBSTRUCTION OF THE NOSE.

Nurses would call a slight catarrh by the truly suggestive name “snuffles.” Whatever be the name, the condition often seriously interferes with breathing and suckling, and is besides a common cause of deafness.

TREATMENT.—Much relief will be afforded by smearing the inside of the nostrils with plain cosmoline or goose oil, applied with a camel’s-hair brush or a very soft feather. Promote the general health.

VOMITING.

Some infants vomit very easily, and generally after each feeding, probably because they have taken more than the stomach can digest; or

CHAPTER XIV.

HOME NURSING.

IMPORTANCE OF THE SUBJECT.

WHILE no remedy is applicable to all disorders, nor to all cases of the same one, proper nursing is invariably helpful, often absolutely essential. Poor nursing can counteract the virtues of the most wisely chosen medicines and frequently baffles the highest medical skill. In this essential part of treatment there is a lamentable lack in the exercise of common sense, and too often an exhibition of positive stupidity. The fondest affection is no guarantee that one will or can suitably nurse the sick of even his own household. In view of such a defect in information the present chapter has been prepared, with a confidence that it will be especially welcome and be a medium through which anxious friends may intelligently set about doing the best thing for their patients. These directions are designed entirely for the domestic nurse, and since the greater part of nursing at home falls upon the wife, mother and sister, the feminine pronoun is more commonly used in alluding to the nurse.

It will be seen that the notes are applicable to cases of severe illness, and quite often to protracted ones. The nurse must exercise her judgment in adjusting them to minor ailments. In any case, she should keep ever in mind that *the welfare of the patient depends in many cases quite as much upon her as upon the physician.* This is too seldom heeded.

AIR AND WARMTH.

“The very first canon of nursing, the first and last thing upon which a nurse’s attention must be fixed, the first essential point to the patient, without which all the rest you can do for him is as nothing, with which, I had almost said, you may leave all the rest alone, is this: **TO KEEP THE AIR HE BREATHES AS PURE AS THE EXTERNAL AIR, WITHOUT CHILLING HIM.**” (*Nightingale*). It is not always possible to observe this rule to perfection, but it is our business to act upon it as precisely as the circumstances will permit. The fear that the patient will take a cold very often leads the nurse

to exclude all air coming directly from the outside; but let it be known that a condition often exists which is called a cold when it is really a clogging of the skin and lungs with the foul exhalations of a closely-shut room—a remark which applies in only less measure to the well. Proper clothing and bed-covering should be the precautionary means used against colds, while fresh air is let in through an open window or ventilator and circulates slowly in all parts of the room, around and under the bed.

Two cautions are needed in securing *fresh* air. First, it is sheer folly to admit air into a sick-room from another apartment, unless the latter has been thoroughly aired, for that is replacing impure air with impure. Second, the outdoor air may be polluted by a neighboring cesspool, privy vault, stagnant water, stables, decaying matter of any kind, kitchen slops, and the like. Nor is it enough that the nurse is not sensible of the contamination, for an enfeebled constitution is exquisitely susceptible to such influences. It is imperative that one guard against all taints, so far as possible. Equal cautions will also be taken against the admission of dust, smoke of all kinds, and the fumes and steam from the kitchen. Nor should towels, bedding, and the like be dried or aired in the room unless the vapors and effluvia escaping therefrom can be driven out at once.

There is a remarkable dread of night-air; perhaps because patients more often take cold in the night, particularly toward morning when the nurse has neglected to supply the extra covers required by the fall in the temperature, or has, from sleepiness, failed to keep up the temperature of the body when it declines during sleep. Good air is needed at night as well as in the day, and that which one gets at night is often, particularly in large cities, better than that of the daytime. There can be no doubt that patients in small-pox and other infectious diseases are made worse, often fatally so, and that others of the household are stricken, from the practice of shutting the sufferer in a warm, closed room with heavy wraps. All such conditions insure an accumulation of the disease-germs which it is well-nigh impossible to counteract. Indeed, unwholesome apartments are often the sole cause of these disorders, as well as of scarlet fever and diphtheria. Give all such patients an abundance of fresh air.

Fresh air does not mean cold air. Observe this distinction and you may avoid many of the colds which are incident to improper ventilation. Keep the room at an even and suitable temperature, prevent cold air from falling directly upon the patient from a window before it has taken on the temperature of the room, and little fear need be felt. It is always best to have an open grate in the room, both as a ventilator and as a means of securing due warmth. No other warming apparatus equal to it has been found, and it is best, even in hot weather, to keep a slow fire in it.

CHAPTER XV.

HYGIENE.

GENERAL REMARKS.

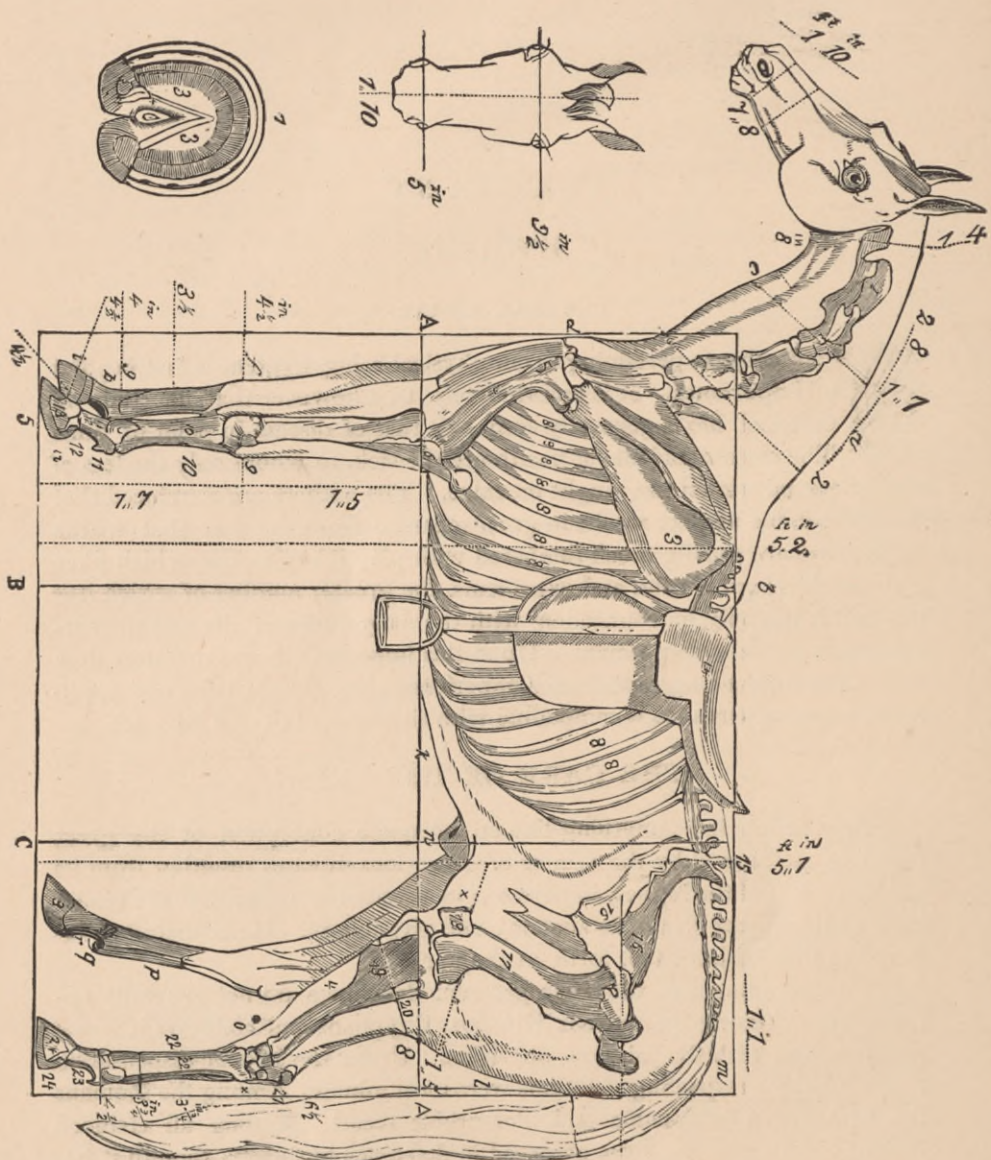
OF all subjects pertaining to our physical being hygiene is first in point of importance. It is unfortunately true however that its study in practical life is generally second to that of disease in point of time. The closest students of health are the sick, to whom only the loss of a priceless possession has taught its value. The authors are convinced that this lamentable neglect results in great measure from the fact that works on hygiene are usually much lumbered with plausible theories which have innumerable *logical* rules and expedients, the greater number of which it is impossible to apply in connection with the daily duties of life and the surroundings of the average man. Upon this important theme therefore they will select from a long professional experience some simple rules and appliances whose observance is compatible with the cares of even a busy life.

THE CARE OF THE SKIN.

Few people have anything like an adequate conception of the great functions performed by the skin or of the serious diseases resulting from its neglect. It is of the highest importance in a study of its care that the reader have an intelligent idea of its anatomy and physiology. He is therefore referred to that subject as set forth in chapter VII.

The advantages of thorough personal cleanliness are not generally appreciated. Among the ancient Hindoos, Egyptians and Hebrews it was a religious rite, with the priest as physician. Under the Mosaic dispensation the regulations respecting ablutions were most minute. Among the Romans the bath was a fashionable and pleasurable resort. Among all civilized nations cleanliness has been observed in deference to society, though it has too often been rather for the sake of securing an attractive exterior than in obedience to the laws of health.

If one were to say to the average man or woman, "You are not clean," it is very certain that said average man or woman would be horrified and



100. I.A. PORTE'S STRUCTURE AND PROPORTIONS.

EXPLANATIONS OF FIGURE 100.

The figure on the opposite page exhibits a complete outline of a perfect horse and indicates the measurements of the same. The whole is taken, by permission, from the *Horse-Shoer and Hardware Journal*:

SKELETON AND OTHER PARTS.

- | | |
|---------------------------|-------------------------------|
| 1. Vertebrae of the Neck. | 13. Coffin Bone and Hoof. |
| 2. Breast-Bone. | 14. Vertebrae of the Back. |
| 3. Shoulder-Blade. | 15. Vertebrae of the Loins. |
| 4. Bone of the Arm. | 16. Basin Bone. |
| 5. Radius. | 17. Thigh Bone. |
| 6. Ulna. | 18. Patella. |
| 7. Elbow. | 19. Tibia. |
| 8. Ribs. | 20. Fibula. |
| 9. Carpal Bones. | 21. Bones in the Hock. |
| 10. Metacarpal Bones. | 22. Metatarsal Bones. |
| 11. Great Pastern. | 23. Pastern Bones. |
| 12. Little Pastern. | 24. The Coffin Bone and Hoof. |

FAMILIAR TERMS.

- | | |
|---------------------|--------------------|
| a. Crest. | k. Body. |
| b. Withers. | l. Quarter. |
| c. Throat. | m. Dock. |
| d. Shoulder Points. | n. Sheath. |
| e. Arm. | o. Hock. |
| f. Knee. | p. Shank. |
| g. Fetlock (fore). | q. Fetlock (hind). |
| h. Pastern (fore). | r. Pastern (hind). |
| i. Foot. | s. Foot. |
| ii. Coronet. | t. Thigh. |

THE FOOT.

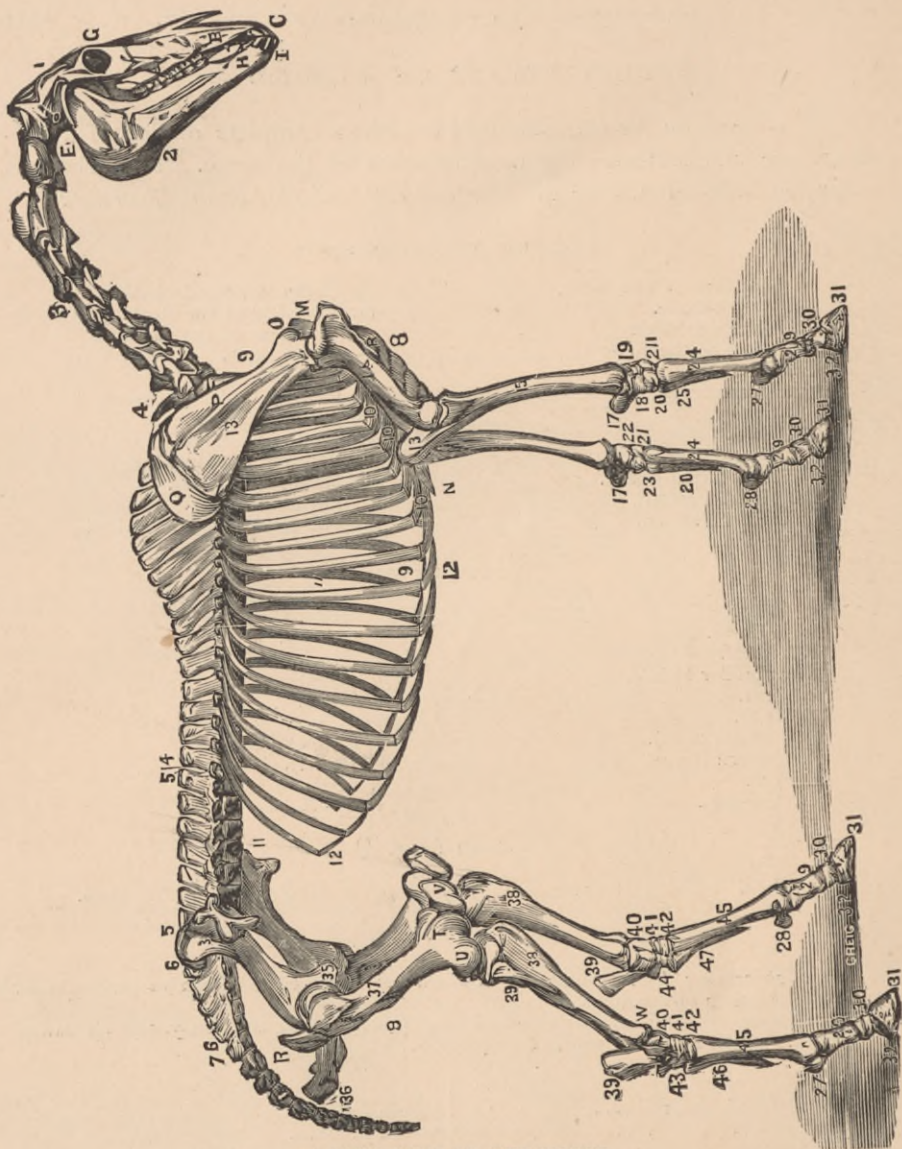
- | | | | | |
|----------|----------|----------|----------|----------|
| 1. Toes. | 2. Horn. | 3. Sole. | 4. Frog. | 5. Heel. |
|----------|----------|----------|----------|----------|

PROPORTIONS OF THE PERFECT HORSE.

A, line separating two rectangles which show the Depth of the Body as proportioned to the Length of the Legs.

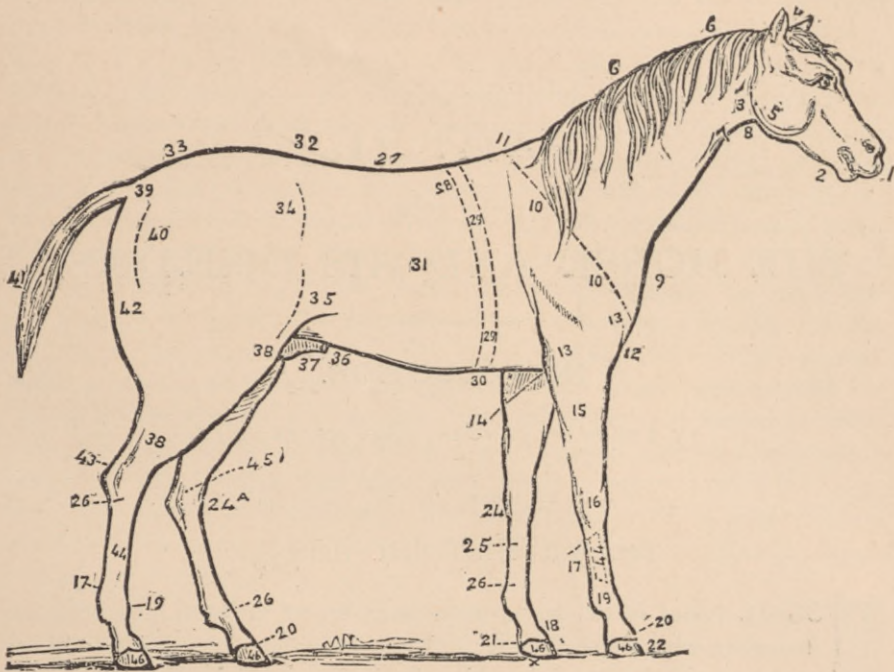
B and C, lines dividing off the fore and hind Quarters and the Body, and indicating their respective and comparative proportions.

	Ft.	In.		Ft.	In.
Length of Head, generally.....	1	10	Across Arm.....	0	6
Across Eyes.....	0	9½	Across Knee.....	0	4½
Across Nose.....	0	7	Across Shank under Knee... ..	0	3¼
From Eye to Cheek Bone.....	0	8	Across Fetlock-Joint.....	0	4
Neck across Gullet.....	1	4	Across Pastern.....	0	3
Middle of Neck.....	1	7	Across Coronary Bone.....	0	4½
Across Neck at Body.....	2	0	Highest Part of Hoof.....	0	4½
From Withers to Ground.....	5	2	Length of Hoof from Toe to Heel.	0	5¼
From Crest of Loins to Ground..	5	1	From Rump to Tail.....	1	1
From Elbow to Stifle.....	2	4	From Hip to End of Quarters....	1	9
From Elbow to Knee.....	1	5	Across Hock.....	0	6½
From Knee to Ground.....	1	7	Across Shank below Hock.....	0	3¾
From Withers to Chest.....	2	2	Across Fetlock.....	0	4½



97. SKELETON OF THE HORSE.

- | | | |
|-----------------------------------|----------------------------------|----------------------------------|
| 1. Cranium. | 13. Scapula. | 29. Os suffraginis. |
| 2. Lower jaw. | 14. Humerus. | 30. Crown bone. |
| 3. Cervical vertebrae. | 15. Radius. | 31. Hoof. |
| 4, 4. Dorsal vertebrae. | 16. Elbow. | 32. Wing of pedal bone. |
| 5, 5. Lumbar vertebrae. | 17. Os Pisiforme. | 33, 34, 35, 36. Os Innominatum. |
| 6, 6. Sacrum. | 18, 19.) | 37. Femur. |
| 7, 7. Coccygeal vertebrae. | 20, 21.) -Carpal bones. | 38. Tibia. |
| 8. Sternum. | 22, 23.) | 39. Os Calcis. |
| 9, 9. True ribs. | 24. Large metacarpal bone. | 40. Astralagus. |
| 10, 10. Cartilages of true ribs. | 25. Outer small metacarpal bone. | 41, 42, 43, 44. Tarsal bones. |
| 11, 11. False ribs. | 26. Inner small metacarpal bone. | 45. Large metatarsal bone. |
| 12, 12. Cartilages of false ribs, | 27, 28. Sesamoid bones. | 46. Outer small metatarsal bone. |
| | 47. Inner small metatarsal bone. | |



99. SKETCH OF THE HORSE.

Principal Points and Parts to be Examined for Defects, Injuries and Disease.

- | | | |
|---|---|---|
| 1. Muzzle. | 16. Knee, or Wrist; sometimes swelled, having a fungous growth; or the skin may have been broken. | 29, 29. Girth, or Circumference in Measurement. |
| 2. Place of Fistula from Teeth. | 17, 17. Back Sinew: place of Curb. | 30. Place of Injury from Pressure of Girth. |
| 3. Place of Mumps. | 18. Place of Disease of Skin above the Coronet—Crown scab. | 31. Barrel, or Middle-piece. |
| 4. Place of Poll-evil. | 19, 19. Fetlock, or Pastern-joint. | 32. Loins. |
| 5. Angle of Jaw. | 20. Coronet. | 33. Croup. |
| 6, 6. Crest. | 21, 21. Heel. | 34. Haunch. |
| 7. Place of Fistula from Vein. | 22. Contracted Hoof. | 35. Flank. |
| 8. Throttle, Thropple, or Wind-pipe. | 24. Mallenders; 24A, Sallenders. | 36. Seat of Warts. |
| 9. Shoulder-point: place of Sores from Harness. | 25. Seat of Splint, or Exostosis, on side of Cannon-bone. | 37. Sheath, or Prepuce. |
| 10, 10. Shoulder-blade. | 26, 26, 26. Seats of Bursal Enlargements. | 38, 38. Gas-skin, or Lower Thigh. |
| 11. Withers; sometimes the seat of Fistula: height of horses reckoned from the ground to the Withers. | 27. Back, or spine. | 39. Root of the Dock, or Tail. |
| 12. Front of Chest or Breast. | 28. Place of Saddle-galls. | 40. Hip-joint—Round or Whirl-bone. |
| 13, 13. The True Arm. | | 41. Rat tail. |
| 14. Elbow; sometimes the seat of Tumors. | | 42. The Quarters. |
| 15. Arm, or Fore-arm. | | 43. Point of the Hock: seat of Capped-hock. |
| | | 44, 44. Cannon-bone. |
| | | 45. Place of Spavin. |
| | | 46, 46. Hoof. |

PART II.

THE HORSE AND HIS DISEASES.

INTRODUCTION.

BY LEROY F. CAGWIN, ESQ., JOLIET, ILL.

THE PREHISTORIC HORSE.

FOSSIL bones of the horse have been found in both hemispheres together with those of other animals which indicate an antiquity as great as any fossil quadruped. The relics found in Europe in the bone caves and drift deposits consist of innumerable skeletons as well as representations by drawing and carving on reindeer horn, bone and ivory, executed by their contemporary man countless ages before history began. Ecker says that the European horse of the fourth epoch probably gave birth to the small stunted breed with the large head, rounded forehead and short neck, which is found in fossil remains at Solutre and is still represented by the wild horses of the Rhone delta and the steppes of Russia; but he adds that this primitive breed was almost entirely supplanted by an Asiatic breed larger and more robust, and that our domestic horse is the result of a mixture of the two. The problem of the origin of the horse can no more be solved than that of man; unless we assume the unity of species, and that the Great Architect created each kind in a specific mould at the beginning, subject to the law of variation, limited by the power of reproduction each of its kind, that man, animals and plants had attained a degree of perfection in variety at some period or periods in the remote past, and that the process is now going on, slowly recovering from the great inundation which overwhelmed the earth during the glacial epoch.

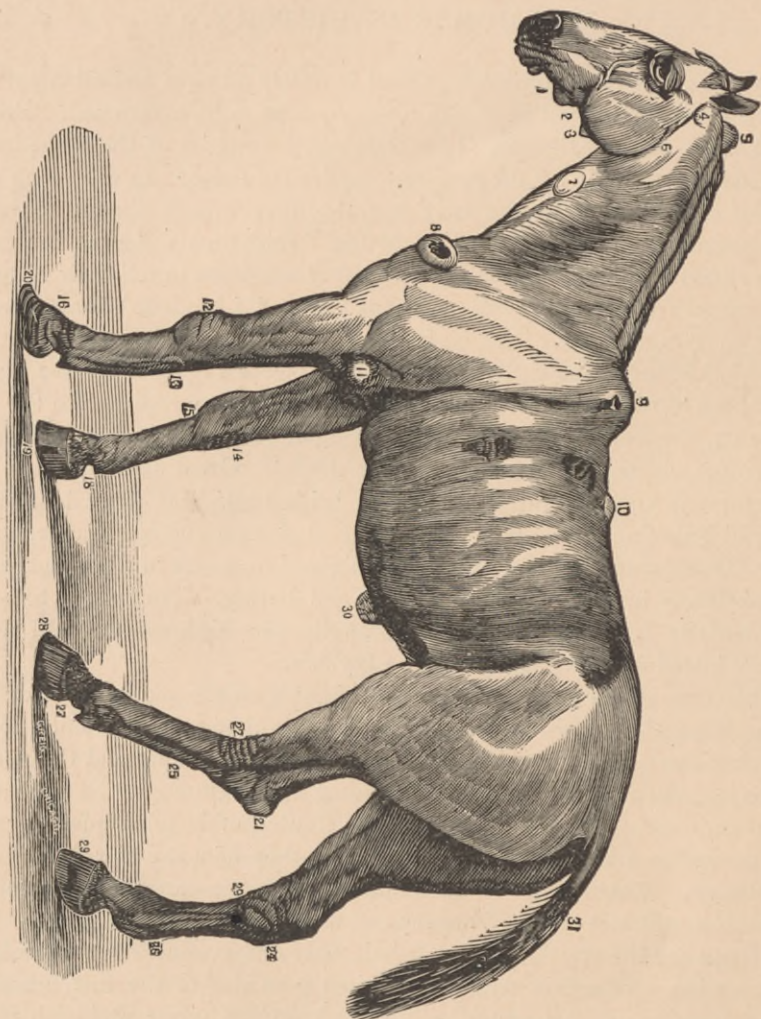
THE HORSE IN HISTORY.

Traces of the horse have been found in nearly all ages and all countries since the flood, the period at which history seems to have dawned. From time to time as the exigencies have demanded varieties of the horse have been produced suitable for the purposes required of them. In following the march of civilization from the very first, the finer breeds appear to have been maintained by the introduction of the Arab stock. Egypt, the most ancient of civilized monarchies that have left monuments to tell their history, as we gather from Rawlinson's "Ancient Egypt," introduced horses, probably from Arabia, under the eighteenth dynasty, and they seem not to have been known in the earlier times. They were regarded as too noble and perhaps too valuable for draught and agricultural purposes, like the ass and the ox, but were commonly either ridden or employed to draw curricles and chariots, chiefly by men of the upper classes. Great numbers were required for the chariots and cavalry. A brisk trade was carried on with Syria and Palestine where they were in great request and commanded high prices. It appears that they were not allowed to graze in fields but were kept constantly in stalls and fed on straw and barley. They seem to have resembled the Arab stock, being light, agile and high-spirited, and were probably introduced into Egypt by the Hyksos.

The same class of horses apparently figures on the monuments of the ruins of Nineveh, Babylon, Assyria, Persia, and other ancient oriental countries, while later, toward the decline of the Persian Empire and the rise of the Grecian, and about the time that the horse was beginning to be cultivated in Europe, the cavalry and war horse was stouter, of heavier quarters and limbs, drooping more at the croup, and altogether of a stockier mould and darker color. Peering into the realms of fancy we can weave a picture which the insufficient light of history can not satisfactorily complete. We can perhaps see the relation and conclude that the parent Aryan stock of the Caucasian civilization was the original possessor of the fine breed of horses known to oriental countries as the Arab, the white albinoish color and the refinement and symmetry peculiar to both going far in evidence.

The great epoch in the history of the horse is at the time of the rise of the Indo-Germanic nations. Spain before England was the nursery of the fine blooded horse. The northern countries supplied the ponderous horse used for war. The cavalry of the time, requiring the heavy armor for both rider and horse, created the necessity of a heavy animal, and to this fact we are indebted for the introduction of the modern draught horse about the time of the Norman conquest.

From that time the variety of purposes to which the horse has been



98. EXTERNAL MARKS OF DISEASE.

- | | | |
|--|---|---|
| 1. Caries of the lower jaw. | 10. Saddle-gall. | 21. Capped hock. |
| 2. Fistula of the parotid duct. | 11. Tumor of the elbow. | 22. Mallenders. |
| 3. Bony excrescence or Exostosis of the lower jaw. | 12. Induration of the knee. | 23. Spavin. |
| 4. Swelling by pressure of the bridle. | 13. Clap of the back sinews. | 24. Curb. |
| 5. Poul-evil. | 14. Mallenders. | 25. Swelled sinews. |
| 6. Inflamed gland. | 15. Splint. | 26. Thick leg. |
| 7. Inflamed jugular vein. | 16. Ring-bone. | 27. Grease. |
| 8. Fungus tumor, produced by pressure of the collar. | 17. A Tread upon the coronet. | 28. A crack in front of the foot, called cow-crack. |
| 9. Fistula in the withers. | 18. Quittor. | 29. Quarter-crack. |
| | 19. Sandcrack. | 30. Ventral hernia. |
| | 20. Contracted or Ring foot of a foundered horse. | 31. Rat-Tail. |

CHAPTER I.

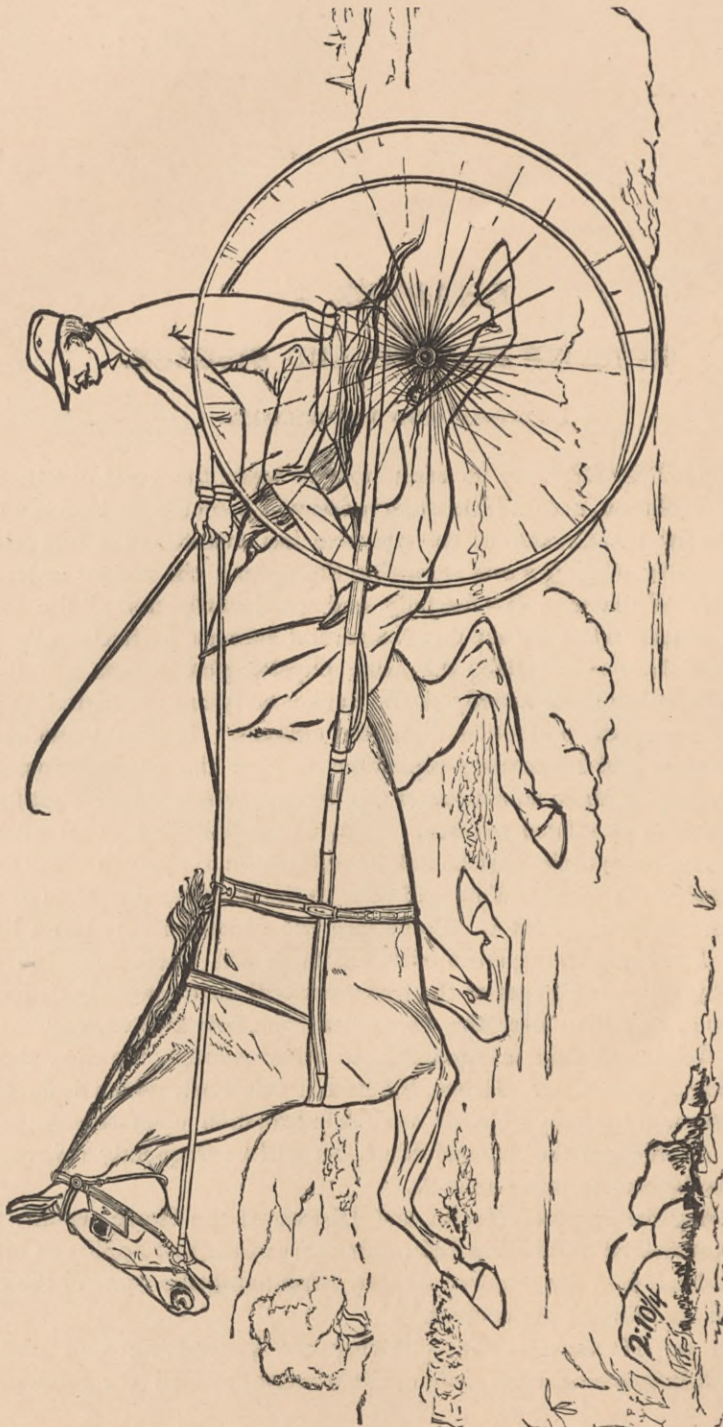
SIGNS OF HEALTH AND DISEASE.

ANATOMY AND PHYSIOLOGY.

WHATEVER may be one's opinion upon the great question of evolution, even a little observation will demonstrate to every one that the Creator of the universe has maintained a marvelous *unity of design and organism* throughout the various orders of animal life. While man is "fearfully and wonderfully made," the same wonder is aroused when we see that the several animals, particularly of the higher kinds, have substantially the same physiological organs and functions. He who has made a study of the human body has the material facts about the horse, ox and other domestic animals. It would evidently involve tiresome and unnecessary repetitions to give the general anatomy and physiology of these animals after the treatise which we have set forth on those subjects as related to man. The reader will find about all the information on these topics that he will have occasion to apply in the domestic treatment of his animals if he will refer to the introductory pages of the appropriate chapters in Part I. To be sure, the functions vary not a little and a few differences in organism exist, but these will be mentioned in the course of the following pages as the treatment will most properly demand. It is obvious, too, that after the horse has been fully treated, very much will have been said that is applicable to other animals, the cow, sheep, hog and dog in particular. Hence, the part of this book which is devoted to the Horse will not only give all needful information upon the comparatively few disorders of the Ass and Mule, but will be frequently referred to in the parts devoted to other animals.

In giving the Signs of Health and Disease of the Horse, we ask the reader to understand that he has before him very much that applies to other animals, and can gain the required facts by substituting the name of the one which he is studying in the context.

SIGNS OF HEALTH.—The following are general signs of health: Smooth and bright coat, loose skin, medium warmth of all the parts, clear



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101. MAUD S.

DRAWN FROM LIFE BY L. F. GAGWIN.

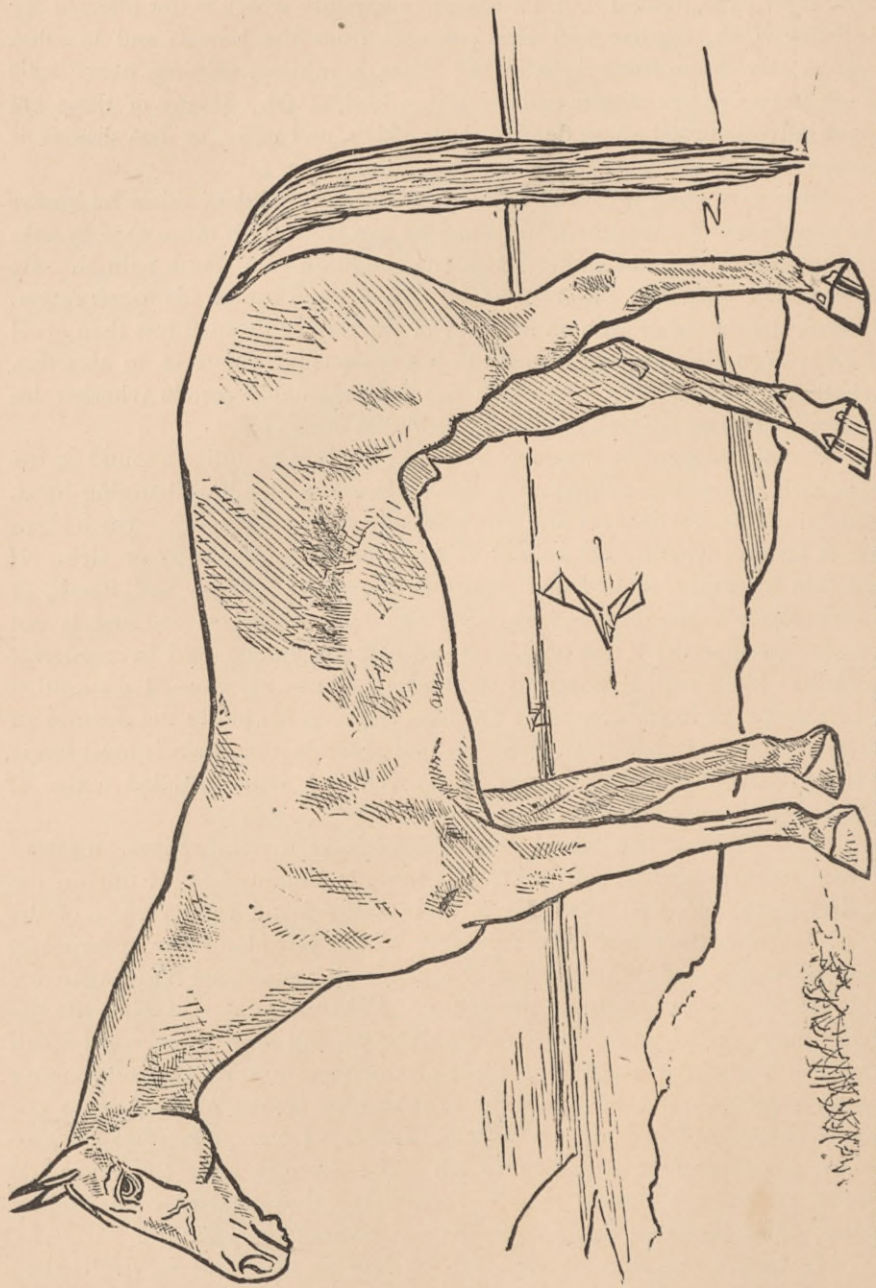
and bright eyes, natural but not excessive appetite which is not affected by ordinary work, regular and easy passages from the bowels and bladder, regular respiration from eight to ten times a minute, uniform heart-beats about forty-five per minute and a medium load of fat. If any of these are materially disturbed some derangement exists, and more or less disease is present if such disturbance is more than fitful.

SIGNS OF DISEASE.—The family physician is helpless unless he knows the symptoms of his patient, but these he can learn with more ease by asking questions than one can determine the condition of a dumb animal. He who would treat the latter must wholly depend upon his observation. Indeed, the owner of such an animal can scarcely be deemed less than cruel if he is so careless as not to extend to it a reasonable attention to ascertain whether it is in health. Any one can be reasonably certain whether his domestic animals are sick or well if he but be observing.

Prominent signs of disorder are these: Failure to notice a sound or the approach of another animal or a person, heedless standing, hanging head, general dullness, with eyes and ears perfectly still or drooping. Such signs are to be seen whether the animal is tired, old, abused, sleepy or sick. If the skin is pimply, or cold and damp, or unusually hot, dry and harsh, or sticks closely to the flesh and bones; if the hair stands on end and is not bright and smooth; if the nose, ears and feet are unduly cold in moderate weather; if the animal paws his bedding, or shows an unusual disposition to lie down, or looks around at his sides, switches his tail in the absence of flies, or uneasily stands on different feet successively, then pain is most likely present, and certainly the animal is not well. A more detailed notice of some signs is now in order.

The Pulse.—The pulse is the stroke felt at a point where an artery comes near the surface. In man, it is more commonly sought out on the wrist; in the domestic animals it is more easily found at the edge of the jaw. Passing the finger from the angle of the jaw along the lower edge, we will notice a slight depression or notch, and by pressing the finger into this we feel the pulsations of the artery. Whereas in man in adult life the heart beats, or the pulse, will be from 65 to 72, and may be increased a half or even doubled by excitement, those of the horse are much less, ranging about as follows: At birth, 100 to 120; at two weeks of age, 80 to 96; three months, 68 to 76; six months, 64 to 72; one year, 48 to 56; two years, 40 to 48; four years, 38 to 48. The average after three years is about 45. These figures may be considered the standard of a healthy pulse, some allowance being made for variations of temperature.

In health the pulse is regular, full, round and distinct, and when increased by excitement it retains the same relative characteristics. It is



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102. JAY EYE SEE. (Record, 2:10 $\frac{1}{4}$; at 4 years, 2 19.)

DRAWN FROM LIFE BY L. F. GAGWIN.

CHAPTER II.

THE NERVOUS SYSTEM.

BRAIN FEVER.—INFLAMMATION OF THE BRAIN.

THIS disorder affects the brain or its membranes, or both, and is caused by over-exertion in warm weather or exposure to the sun on a hot day; insufficiency of water; very stimulating food; hard blows on the head. It is not common among horses. At first the symptoms are mild, including heavy eyes, with red membranes under the eyelids; loss of appetite; the head rests on some object or between the legs; sleep,



96. VIOLENT SYMPTOM OF BRAIN FEVER.

followed by sudden waking, staring, and dozing again. In a day or two there will be delirium with convulsions and fits of excitement; heaving flanks; wild, red, staring, bloodshot eyes, wide open; nostrils stretched out;

the breathing has a snoring sound; constipation; scanty urine. Then may follow dullness, convulsions, loss of consciousness, and death; or the horse may grow more violent before death, plunging about, pawing, biting and striking at every one near, with eyes standing out from the sockets, breathing and pulse rapid, and mouth hot and dry; the horse dashes violently against any object by him, falls exhausted, foaming at the mouth, sweating, and then dying. Symptoms of colic may be confused with these, but in colic *rolling* is prominent, as it is not here, and consciousness is not lost. The symptoms of brain fever, or "mad-staggers," should be carefully compared with those of *apoplexy*, or "sleepy staggers," found in the next section. But those of stomach staggers (see section on that disease) are most likely to be confused with the indications of brain fever. Hence the following distinctions made by Gamgee should be carefully noted:

INFLAMMATION OF THE BRAIN.

Very rare; never epidemic.

History indicates the cause to be some local injury; sometimes due to disease of the ears.

Originates and progresses slowly.

Usually very slight functional disturbance of stomach and intestines, indicated by costiveness.

High fever of a persistent type.

Stupor, listlessness.

No signs of colic, and rarely sweats.

Permanent uneasiness, ranging very slightly in intensity; delirium occasionally marked, but more frequently coma.

Symptoms yield slowly and with difficulty to treatment.

Consequences.—No tendency to ruptured stomach; suppuration often results, with marked symptoms of coma or blood-poisoning.

STOMACH STAGGERS WITH DELIRIUM.

A common disease; often epidemic.

History indicates the cause to be repletion of the stomach.

Comes on suddenly.

Marked signs of derangement of alimentary canal.

Febrile symptoms easily dispersed.

Symptoms of severe pain.

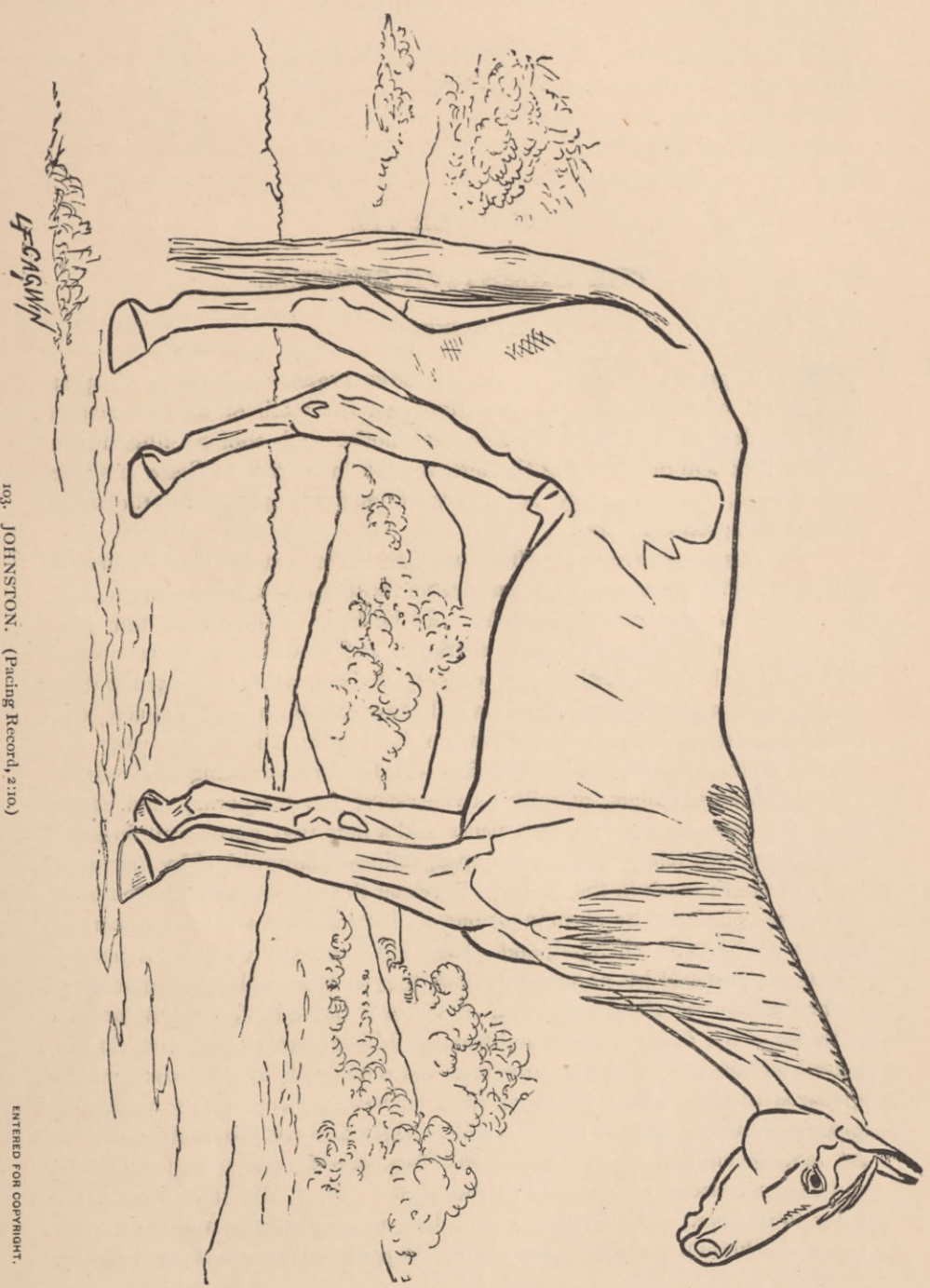
Colic, sweats, tremors.

Paroxysmal derangement and severe delirium.

When evacuation of the stomach is obtained the delirium disappears, and the animal soon recovers.

Consequences.—Death in a few hours in many cases; ruptured stomach, indicated by symptoms of vomiting.

TREATMENT.—The most common treatment is free blood-letting, with powerful cathartics. While this may give temporary relief, the depletion, even if recovery takes place, will often produce a useless animal, a fine-spirited horse scarcely ever becoming more than a broken-down hack. A much better treatment consists in arterial sedatives which lessen the fever and allay the inflammation. Among the best of these we mention



103. JOHNSTON. (Pacing Record, 2:10.)

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CHAPTER III.

THE DIGESTIVE SYSTEM.

THE TEETH.

THE general treatise on the digestive organs is found in Chapter IV of Part I, but the importance of the teeth of the horse as an index of age calls for a special notice and copious illustration. Points in determining the age are the following:—There are two sets of teeth, the temporary or milk-teeth, and the permanent, the same number being on each jaw.

The *temporary* are twelve front teeth, or incisors, and twelve molars, or grinders. The *permanent* set has twelve incisors, twenty-four molars, and *four canines or tushes in the male*. At birth, or within about ten days afterward, the two central incisors are found, and about the same time three molars on each side of either jaw appear; at six months, four more middle incisors are seen; about the eighth month, two corner incisors on each jaw; at one year, there is the full temporary set. During the second year are cut two molars on either side of each jaw—eight in all—making twelve incisors and twenty molars, of which twenty-four are temporary and eight (molars) permanent. At two years and a half two permanent incisors displace the two temporary central ones, and are distinguished by increased size and a dark mark in the center. Between three and four years the next incisors are displaced by permanent ones. Between four and five, the corner incisors are likewise changed, and about this time the twelve temporary molars are replaced by permanent teeth, to which are added the remaining molars of the *mare's* mouth. At about four and a half, the four canines or tushes of the *horse* are seen and become fully grown at five. At six the central incisors of the *lower jaw* lose the dark mark in the crown which appeared at about three, perhaps a little before. At seven, this mark disappears from the middle incisors, and at eight is worn from all of them. At ten, eleven and twelve, the mark disappears from the central, middle and corner incisors respectively of the *upper jaw*. We thus have a fair index to the age. The teeth becoming longer, their edges triangular (tushes round and blunt), dishonest men attempt to practice various impositions, by,

changing their appearance—"bishops" the teeth. For instance, a three-year old may be made to appear older by drawing the teeth which would soon drop out, thus allowing a more rapid growth to the permanent teeth; or a cavity is cut into the surface of the corner teeth and darkened with a hot iron or other means, to make a horse look younger.

COLIC.

This should not be mistaken for inflammation of the bowels (enteritis), or for stomach staggers. The following table will aid one in distinguishing it from the former, as well as from other disorders.

ENTERITIS.	COLIC.
The attack comes on gradually; restlessness and fever-symptoms being present five or six hours before the violent symptoms.	The pain comes on suddenly, without any symptom, and is violent from the first.
Pain continuous, with but slight intervals of comparative ease.	Pain comes on in paroxysms, with marked intervals of ease.
Pressure on the abdomen gives pain.	Pressure or friction on the abdomen gives relief.
The pulse quick and full, or hard and thready; as the disease advances, rising to double the number of beats, or even more.	The pulse not affected, except during the paroxysms of pain, or after the latter has continued some time. It is thus variable; sometimes natural, at others small and feeble, then full and quick.
The extremities cold.	The extremities warm.

Colic is of two kinds, the *spasmodic* and the *flatulent* or windy, and the two kinds require separate description and treatment.

SPASMODIC COLIC.

This form is caused by impure air and irregular exercise, with dry, poor food and insufficient water. It is aggravated or excited by sudden chills, chiefly after hard work; free drinking of cold or mineral water; constipation; gritty lumps in the intestines; violent purging; green food in undue quantities.

Symptoms of Spasmodic Colic.—Severe pains in the abdomen coming on in paroxysms; the horse, in apparently previous good health, turns his nose toward the flanks with a frightened look, paws, and is uneasy. As yet the pulse is natural; an appearance of ease is now observed for a short period, then the symptoms return and are aggravated; the horse stamps

PART III.

THE OX AND HIS DISEASES.*

CHAPTER I.

THE NERVOUS SYSTEM.

MAD STAGGERS AND BRAIN FEVER.

MAD staggers and brain fever are quite frequent among cattle, and come on rapidly from exposure to a hot sun or sudden change of temperature; or may follow ill-usage, high feeding, excess of blood, over-driving, or a blow on the head.

Symptoms.—*Mad Staggers* are marked by heaving flanks; wild, red, staring eyes; nostrils enlarged; furious delirium and frenzy; (the animal is unconscious, while in rabies it is not so—a distinction that should be carefully noted); animal exhausted, and finally motionless. *In Brain Fever*, the general symptoms of mad staggers are present, and in addition a marked aversion to red bodies during the frenzy; frightful bellowing; incessant and furious galloping; arched tail; the skin adheres closely to the flesh; spine and adjacent parts very tender; the animal falls headlong, and lies in a stupor; from the first, vivid redness and prominence of the eyes; dullness and drowsiness; thick, heavy, difficult breathing.

TREATMENT.—Give aconite for fever; delirium; red eyes; dry, hot skin. For great heat and swelling of the head, blood-shot eyes, delirium and frenzy, thirst, sensitiveness to light and noise, wild expression, give belladonna, which is also usually serviceable in the beginning, in alternation with aconite at intervals of from one to three hours according to the severity. For stupor, sudden starts, and involuntary passages of dung, give hyoscyamus. Bryonia is needed for stupor with delirium. Opium is demanded

* See "Signs of Health and Disease," Chapter I, Part II.

by stupor with giddiness, half-closed, glassy eyes, constipation, and slow, feeble pulse. Give arnica externally and internally once in an hour, or oftener in extreme cases, if the cause is some external injury.

Gelsemium, a wine-glassful of a mixture of twenty drops of tincture in a pint of water, given every two hours, is valuable in cases resulting from exposure to the sun, with weakness of the muscles and enlarged pupils of the eyes.

For further information, consult this disorder in the Horse. Keep the animal perfectly quiet. When the violence of the symptoms subsides, give soft food that is easily digested and readily taken.

APOPLEXY.

Apoplexy has causes similar to those of Brain Fever, but is much more rapid in its attack. For symptoms, treatment, and general care, consult the article on Brain Fever above, and on Apoplexy in the Horse.

PARALYSIS.

This is a loss of nervous power in the muscles, and may affect one muscle or many. It occurs mainly in old cattle in bleak countries, cold, unhealthy stables, or those exposed to cold after warm stabling.

Symptoms.—Legs, generally the hind ones, cold and weak, then stiff, dragging and resting on the pasterns; then the animal becomes unable to stand and sits on its haunches.

TREATMENT.—Keep the animal warm and well supplied with litter; change to nourishing food; turn the animal over two or three times a day. For further information, consult Paralysis in the Horse.

HYDROPHOBIA.

Hydrophobia occurs more frequently in the cow than in the horse, and results from the bite of a rabid animal.

Symptoms.—Loud and frequent hollow bellowing; stamping and butting; sometimes return of the food into the mouth about the third day; the secretion of milk diminishes; foaming at the mouth; paralysis; death in from four to seven days; *consciousness throughout.*

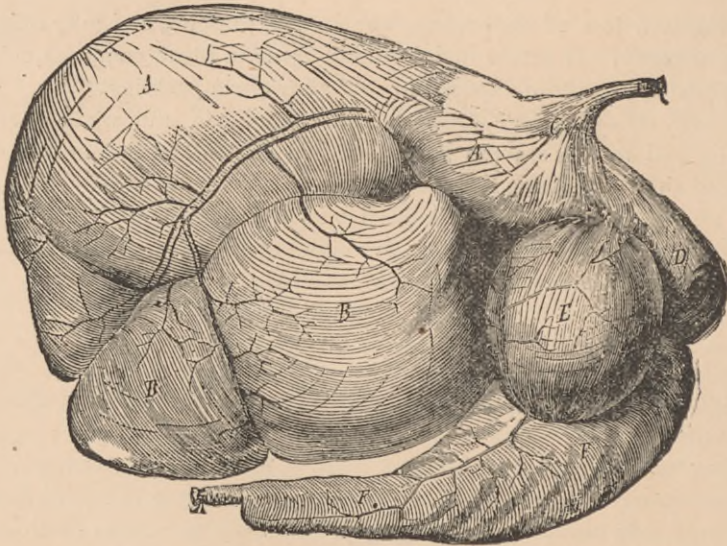
TREATMENT.—Wash the wound well with warm water and some disinfectant; then burn it with an iron, or apply strong nitric acid. Dress then with a strong carbolic acid lotion, or lime-water and oil. Belladonna and stramonium may afterward be used. When the case is *fully developed* medicine will generally be of little avail.

CHAPTER II.

THE DIGESTIVE ORGANS.

ANATOMY AND PHYSIOLOGY.

THE stomach of the ox, sheep and other ruminants is so peculiar as to call for special mention. It consists of four so-called stomachs. The first, known as the *rumen*, or paunch, is much the largest; its mucous membrane is rough, with elevations or papillæ, and is protected by a dense, scaly membrane. The second stomach, called the *reticulum*, or honey-comb, is the smallest of the four, and is connected with the



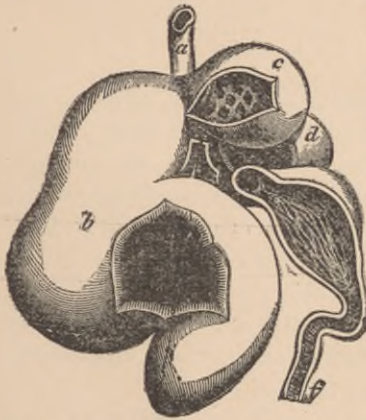
153. STOMACH OF THE OX.

A, Rumen (left half). B, Rumen (right half). C, Lower end of the Oesophagus. D, Reticulum. E, Omasum. F, Abomasum.

front part of the paunch, with which it freely communicates. The third stomach is named the *omasum*, or maniplies, the latter term being derived from the many folds of the membranes; its numerous membranes are of

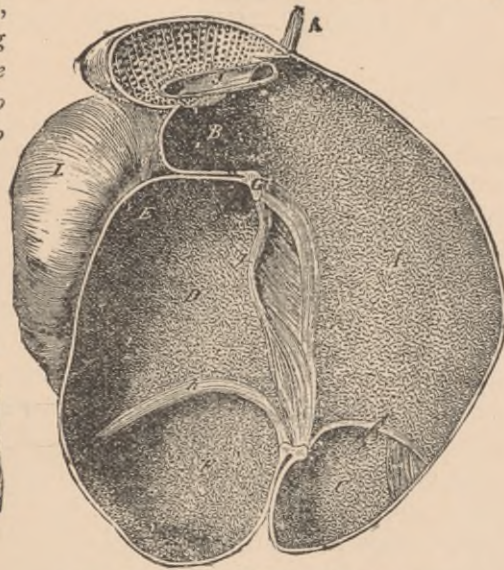
different sizes, and their surfaces are copiously supplied with papillæ; its contents are dry. The fourth stomach, called the *abomasum*, or rennet, performs substantially the same functions as that of man, is larger than the second and third but smaller than the first, is covered with a thick, velvety coat that has ridges similar to those of the omasum, and secretes an acid that is necessary to digestion.

The first three stomachs are involved in the process of rumination. Crushed food passes first into the rumen, or paunch, and is there heated in saliva, mucus and other secretions, its toughness determining the time it is to be so retained. The food next enters the reticulum, where the softening and dissolving are continued, being aided by a slow churning movement. *Fluids that are swallowed pass directly into this organ without going to*



154. STOMACH OF THE OX, exposing parts of the interior.

a, (Esophagus. b, Rumen. c, Reticulum. d, Omasum. e, Abomasum. f, Duodenum.



155. SECTION OF THE STOMACH OF THE OX.

A, Left Sac of the Rumen. B, Front extremity of the same turned back on the Right Sac, its rear extremity being C. G, Section of the front Pillar of the Rumen. gg, Its two upper branches. H, Rear Pillar of the same. hhh, Its three lower branches. I, Cells of the Reticulum. J, Furrow of the (Esophagus. K, (Esophagus. L, Abomasum.

the paunch. In this stomach secretions ferment the food or produce other chemical changes, reducing the contents to a pulpy mass. In the next place the food passes back to the teeth and is thoroughly masticated, this process being known as *rumination*, or "chewing the cud." The return of the food is easily detected, for one may see large masses pass up the gullet which is distended as in swallowing, though the movement is in the opposite direction. When the food passes into the mouth its liquid parts are immediately swallowed into the first three stomachs; and the solid food

is slowly ground by the teeth a longer or shorter time according to its toughness. When sufficiently ground the food is again swallowed, some into the first two stomachs, but the greater part into the third, thence into the fourth where the digestion is completed. Because of the tendency of liquids to pass directly into the second or third stomach there is some danger that in administering medicine by drenches or other mechanical means the desired results may be defeated, and even damage be incurred. Hence, in giving medicine to the ox or sheep it is always best when possible to induce the animal to swallow it voluntarily.

HOOVE.—GRAIN OR CLOVER SICKNESS.

This is a distension of the stomach caused by decomposition or fermentation of food, or by eating unusual articles of food. Rich grazing after poor or scanty food, wet grass in warm weather, fodder heated by being heaped up when wet, drinking cold water excessively, eating too much grain, bran, chaff, raw potatoes and oats, or boiled turnips, may cause the disorder.

Symptoms.—These appear soon and suddenly; loss of appetite and cud; whole body swollen, especially at the flanks, which give forth a drum-like sound when struck; sour and noisy belchings; moans and distress; animal stands still; short, difficult breathing; nostrils spread; threatened suffocation; the pulse grows harder, fuller and quicker; mouth hot and full of frothy slobber; eyes glazed, fixed, and blood-shot; the tongue hangs; veins of the neck and chest swollen; back arched; legs drawn under the body; tail curved; protruding anus; cold sweat; the animal finally totters, falls, struggles, discharges sour fluid and solid food from the nose and mouth; suffocation or rupture of the stomach, leading to death.

The distension of the stomach by gas may be distinguished from that arising from impacted food by a study of the table here used, which is taken from the excellent work of Lord and Rush.

DISTENSION FROM GAS.

The left flank, on pressure, feels soft, elastic, and yielding to the fingers. On percussion, sounds hollow and drum-like.

Frequent belching; the wind which escapes has an offensive smell.

Respiration quick, short and puffing.

Position: Standing; head stretched forward; unable to move; moans, and appears in great distress; eyes red and staring.

DISTENSION FROM IMPACTED FOOD.

The left flank, on pressure, feels solid; does not yield readily to the fingers on percussion; on being struck, sounds dull.

No belching or eructation of wind.

Respiration not much interfered with.

Position: Lying down, and is with difficulty induced to move; looking dull and listless.

PART IV.

THE SHEEP AND ITS DISEASES.*

CHAPTER I.

THE NERVOUS SYSTEM.

STAGGERS.—GIDDINESS.

THIS is very dangerous, occurring most frequently in lambs, especially in those not over six months old, seldom among sheep over two years of age. It is caused by small insects in the head. It is said that these insects will produce tape-worm in a dog, that the joints of tape-worm from the dog will produce the insects in sheep, and hence, that the presence of dogs will induce this disease. A cold, wet season and low, damp localities favor the development of the disorder.

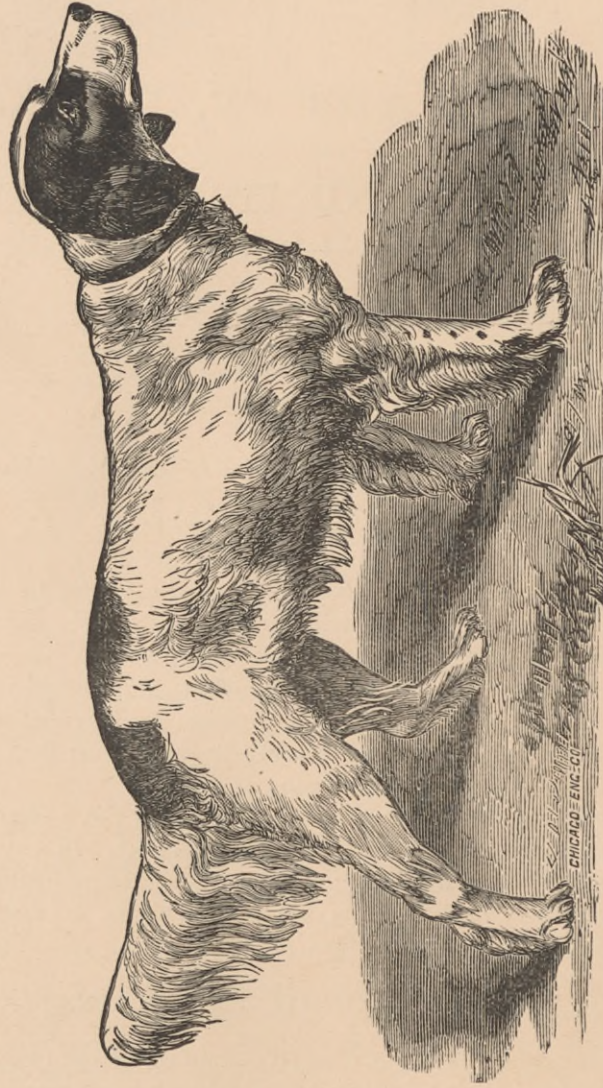
Symptoms.—Stumbling; turning round often; head turned to one side, or held high up and forward; impaired appetite; indifference; wild look; eyes bluish, the pupils enlarged and the eyeballs prominent; then blindness, stupor, loss of flesh, exhaustion and death.

Treatment.—Whether the bone be absorbed or not, a veterinary surgeon may perform an operation to remove the insect. In any case, the treatment should be applied immediately upon the discovery of the disorder. Belladonna is the only medicine that has effected cures. It may be given every day at first, then every two days.

INFLAMMATION OF THE BRAIN.

Inflammation of the brain, in which the brain is engorged with blood, is caused by over-driving, high feeding, blows on the head, sunstroke, and the like. It is most common among lambs.

* The reader should carefully note the remarks upon "Signs of Health and Disease" in Chapter I of Part II. He will also readily infer that all requisite information upon the treatment of the few ailments of the Goat will be easily derived from the following directions upon the Sheep.



170. ROB ROY. (Owned by Arnold Barges.)

PART VI.

THE DOG AND HIS DISEASES.

INTRODUCTION.

BY ARNOLD BURGES, A. M., HILLSDALE, MICH.,

Late Editor of the "American Sportsman," and Author of "The American Kennel and Sporting Field."

ORIGIN AND TRAITS.



IN the origin of the dog scientific men have differed widely. By some he has been declared a descendant of the wolf, and by others of the fox or jackal, and points of resemblance, such as cranial development, period of gestation, peculiarity of the eyes or carriage of the tail, have been cited in support of each theory. Still other writers have claimed he is of a distinct breed, and have attempted to prove this by the assertion that, though he will breed with all of the above animals, the progeny of the cross are incapable of propagation *inter se*, thus proving they are true hybrids, or descendants of distinct species, it being a well-established principle that hybrids are sterile if bred together. This theory has, however, been completely refuted by observation of the dogs of the Indian tribes, as it has been proved beyond question that these cohabit with the wolves, foxes and coyotes, and that the progeny of these unions are as fertile as any others. From this fact modern authorities have come to the conclusion that the dog is a mongrel, descended from crosses between all the animals to which he bears resemblance, and raised to his present perfection by selection and breeding for specific results. Animals in a state of nature vary but little if any from the original types, because they are

not subjected to any influences that would induce change. They dwell together according to their kind, often in packs or herds, and inbreed to a degree that would be ruinous but for the wise provision of nature which, through their ferocity and the law of force, secures the survival of the fittest, and these, from the prepotency of past consanguineous unions and the unvarying character of life generation after generation, naturally reproduce the typical characteristics of the race. Domestication has changed other animals as radically as it has the dog. Climatic influences and the demand for new and different services, tending to induce breeders to develop classes capable of meeting these demands, are sufficient to account for even the variations in size and instinctive qualities which the dog of to-day displays. Upon any other theory it would be difficult to trace to a common ancestor such different types as the mastiff, weighing nearly two hundred pounds, and the toy-terrier, weighing only a few ounces; the setter, pointer, spaniel and hound, each instinctively taking to the pursuit of game, but each in different form from the others; the bull-dog, with his brutal instincts, and the Newfoundland, with his amiable character and half-human intelligence. But when we remember that the most exaggerated specimens have been evolved from less-contrasting ancestors within the few years that fashion or special need has made them objects of desire, we can more easily regard them as absolute productions, and comprehend the effects of circumstances and influences extending back to the early ages of the world.

The dog is, of all animals, essentially the friend and companion of man. From the earliest times of which we have any record we find him a dweller in the tent of his master, the playfellow of his children, his assistant in the chase, his guard at night, at all times a servant "faithful even unto death." The most ancient pictures and the sculpture of exhumed cities unite with poets and painters of modern times to commend his courage and devotion, and make the dog a synonym of constancy and zeal. Other animals share his servitude, and some may by circumstances or the peculiarities of their owners be admitted to companionship in a greater or less degree. The wild tribes of the desert necessarily depend upon their horses for both subsistence and safety in danger, and the love of an Arab for his horse, with the intelligence the latter acquires from the association, is well known to all who have read the history of the nomadic races. The cat is the favorite with some, but the cruelty and the treachery of his disposition unfit him for the general trust and affection given to the nobler dog. Individual fancies occasionally induce the admission of other animals into similar relations, but of all the brutes the dog alone is the ordinary associate of man, and a reasonable study of his habits and disposition will convince one that he is justly entitled to the distinction.

DIVISION OF BREEDS.

Custom has divided the dogs of the English-speaking countries into "sporting and non-sporting classes." The former comprehends all that are used with the gun, hounds, fox-terriers and dachshunde; the latter, watch-dogs, sheep or cattle dogs, terriers generally, toy dogs, and those which may be classed under the general term "miscellaneous." "Stonehenge," who is recognized as one of the best authorities, divides these sub-classes as follows: The dogs used with the gun are setters, pointers, spaniels and retrievers. The hounds comprise the greyhound which hunts by sight, the bloodhound, foxhound, harrier, beagle and otter hound, all of which follow their game by scent. Fox-terriers are divided into the rough and smooth varieties, and the dachshund is identical with the German badger dog. Watch-dogs include the mastiff; bulldog; Newfoundland; Labrador and lesser Newfoundland; the St. Bernard and the Dalmatian or coach dog. The last Youatt says is "used in his native country for the chase," and Stonehenge says "without doubt the Dalmatian is a pointer when at home," but owing to the difference in his uses in his native country and elsewhere, Stonehenge adds, he "has always been included in our shows among the dogs not used in field sports, and for this reason I have classed him among the watch-dogs." The sheep and cattle dogs are the colly, the bob-tailed sheep dog, and the Pomeranian or Spitz which Stonehenge asserts is in his native country "employed as a sheep dog." Terriers are classed as rough and smooth, though there are also many which are properly described as nondescript, because, while possessing some of the attributes of certain breeds, they also differ too widely from the best types to be entered with them. The rough terriers are the Skye, both drop and prick eared; the Dandie Dinmont; the Bedlington; the Yorkshire and the Irish. The smooth varieties are the black and tan, or Manchester, the white English and the bull-terrier. The toy dogs, also divided into the rough and smooth, are first, the King Charles and Blenheim spaniels, the Maltese dog and the rough toy-terrier; second, the pug, the Italian greyhound and the smooth toy-terrier. In an appendix Stonehenge mentions the poodles, both French and Russian; the truffle dog; the Chinese crested dog and the Great Dane, these not being properly dogs of the British Isles.

USES OF THE DOG.

Field sports have existed in Great Britain from the earliest times. They have always been the prerogative of the aristocracy and wealthy class and have been protected by severe forest and game laws. Of old the keeping



175. HANDSOME TOM.

PART VII.

THE CAT AND ITS DISEASES.

BY E. M. HALE, M. D.

INTRODUCTION.

HISTORY.



THE admirer of the cat inquires about the origin of the graceful pet which sings on the rug or lies so comfortably on the lap of its mistress, and he learns that "blue blood" runs in the veins of the large family, scientifically speaking, to which it belongs. It is a member of the great class of felidæ, whose proudest representatives are the kingly lion and the royal tiger. In spite of much discussion, the question of the origin of the domestic cat is still without a satisfactory answer. It is very generally conceded that it descended from either the cat of ancient Egypt or the wild cat, but authorities are pretty evenly divided upon the two parts of this question. Mr. Wood says, "as far as is at present known, the Egyptian cat is the origin of our domestic cat," and we accept his conclusion, as well as his statement that it came to western and northern countries through Greece and Rome.

That the cat was known in very early times is shown by many allusions to it in the books of the Sanscrit language, which date back thousands of years before the Christian era. In ancient Egypt it commanded a veneration which staggers our credence. We are told that a Persian king captured an Egyptian city without opposition by resorting to the stratagem of giving a living cat to each soldier when going to battle, the enemy offering no resistance lest the sacred animal be killed. Stories of a like kind are



180. SKETCH OF A COCK.

- | | | |
|--------------------------|--|----------------------------|
| 1. Comb. | 9. Saddle-hackles. | 16. Primaries, or flights. |
| 2. Face. | 10. Sickles. | 17. Point of breast-bone. |
| 3. Wattles. | 11. Tail-coverts. | 18. Thighs. |
| 4. Deaf-ear or ear-lobe. | 12. True tail-feathers. | 19. Hocks. |
| 5. Hackle. | 13. Wing-bow. | 20. Legs or shanks. |
| 6. Breast. | 14. Wing-coverts, the "bar." | 21. Spurs. |
| 7. Back. | 15. Secondaries, lower ends forming the wing or lower butts. | 22. Toes or claws. |
| 8. Saddle. | | |

PART VIII.

POULTRY AND CAGE BIRDS.

CHAPTER I.

POULTRY AND LARGE BIRDS,

INCLUDING

Chickens, Turkeys, Ducks, Geese and Other Domestic Fowls.

BY H. H. STODDARD, ESQ., HARTFORD, CONN.,

Editor of *The Poultry World*, *The Poultry Post*, and *The American Poultry Yard*;

Author of "How to Feed Fowls," "How to Win Poultry Prizes," "An Egg Farm," etc., etc.

INTRODUCTION.



HE rapid growth of poultry interests in America and the consequent increase in the financial value of the stock have made a practical treatise on the diseases of fowls a pressing need. Feelings of mercy, to say nothing about self-interest, should prompt one to seek relief for his suffering flocks, but many find themselves helpless in the absence of a reliable guide. The family physician can give no advice, even if his services did not involve too great an expense, for the subject lies outside of his field. Nor does the domain of the veterinary surgeon adequately cover this ground. The poultry raiser must therefore be his own counselor. He is however generally limited to the advice of equally uninformed neighbors and to stray clippings from newspapers which are as useless as the large class of specifics for human ills which the paragraph hunter commits to the columns of the same papers.

During many years of practical poultry culture and an exhaustive study and publication of literature pertaining thereto, the writer has kept



CHAPTER II.

CAGE BIRDS.

BY HERR GUSTAV STAINSKY, LATE OF GERMANY,

Member of the Berlin Bird Society, and American Correspondent of the Same; Importer of Warbling Canaries; Proprietor of a Bird Hospital, Chicago.

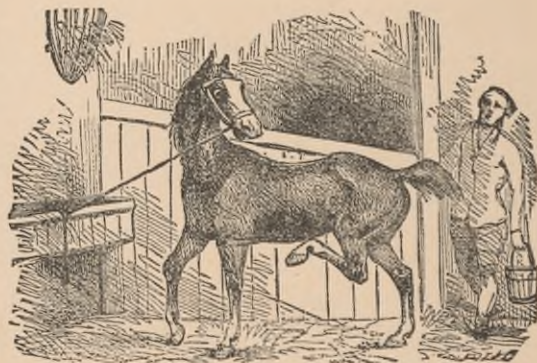
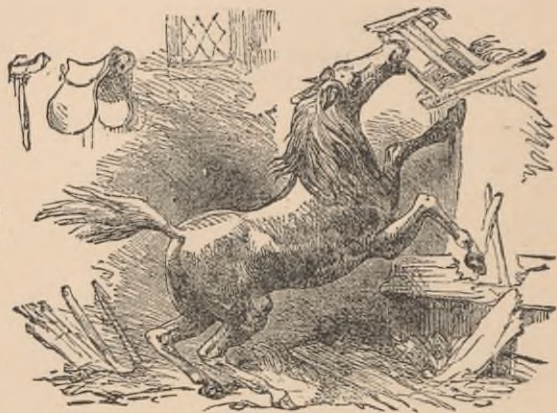


INTRODUCTION.

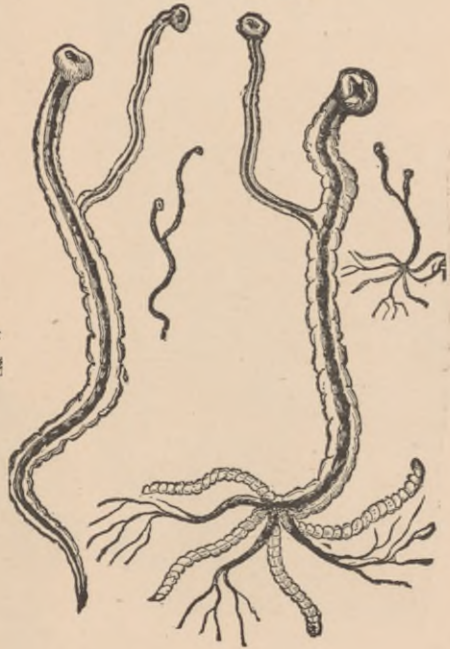
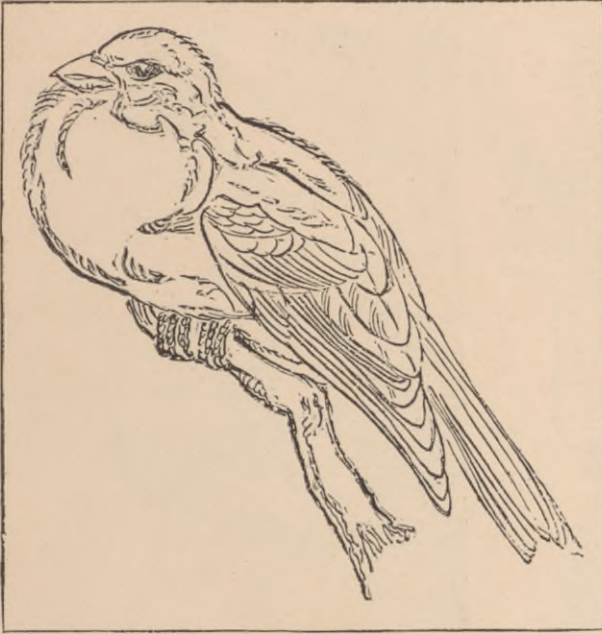
THE student of nature sees a mantle of beauty thrown over nature, in pleasing contrast to its manifestations of power. The cares and conflicting passions of life are most agreeably relieved by the varied tints of the flowers which clothe the field and garden, and by the birds which flit among them, to please with their wonderful symmetry, delight with their rich and gorgeous plumage, and charm with their entrancing song. These "beautiful and well-created things" stimulate and purify the love of beauty which is such an essential element of every normal mind and soul, and are thus ministers to our highest good. It is obedience to our better nature that we admire the feathered tribe in all its grades, from the majestic king of birds which sweeps the storm-cloud to the sparkling humming-bird which dances upon the sweet honeysuckle.

Aside from the information gained, an intense interest is felt in a study of the form, plumage, song and habits of these creatures of the air. In my native land, societies are formed expressly for such study, it being my esteemed privilege to have a membership in the one at our capital and to continue its correspondent in the fair country of my adoption. In such favorable circumstances I have learned many things which could not otherwise have come within my knowledge. While the beautiful life of birds in their natural freedom has been a constant theme of investigation, we have been led to give special attention to their needs and care when in captivity, for man's taste demands that the bird's of all climes, like other objects of

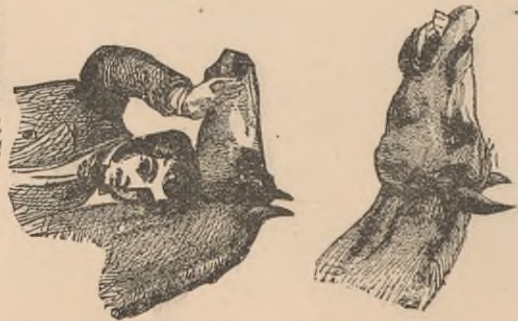
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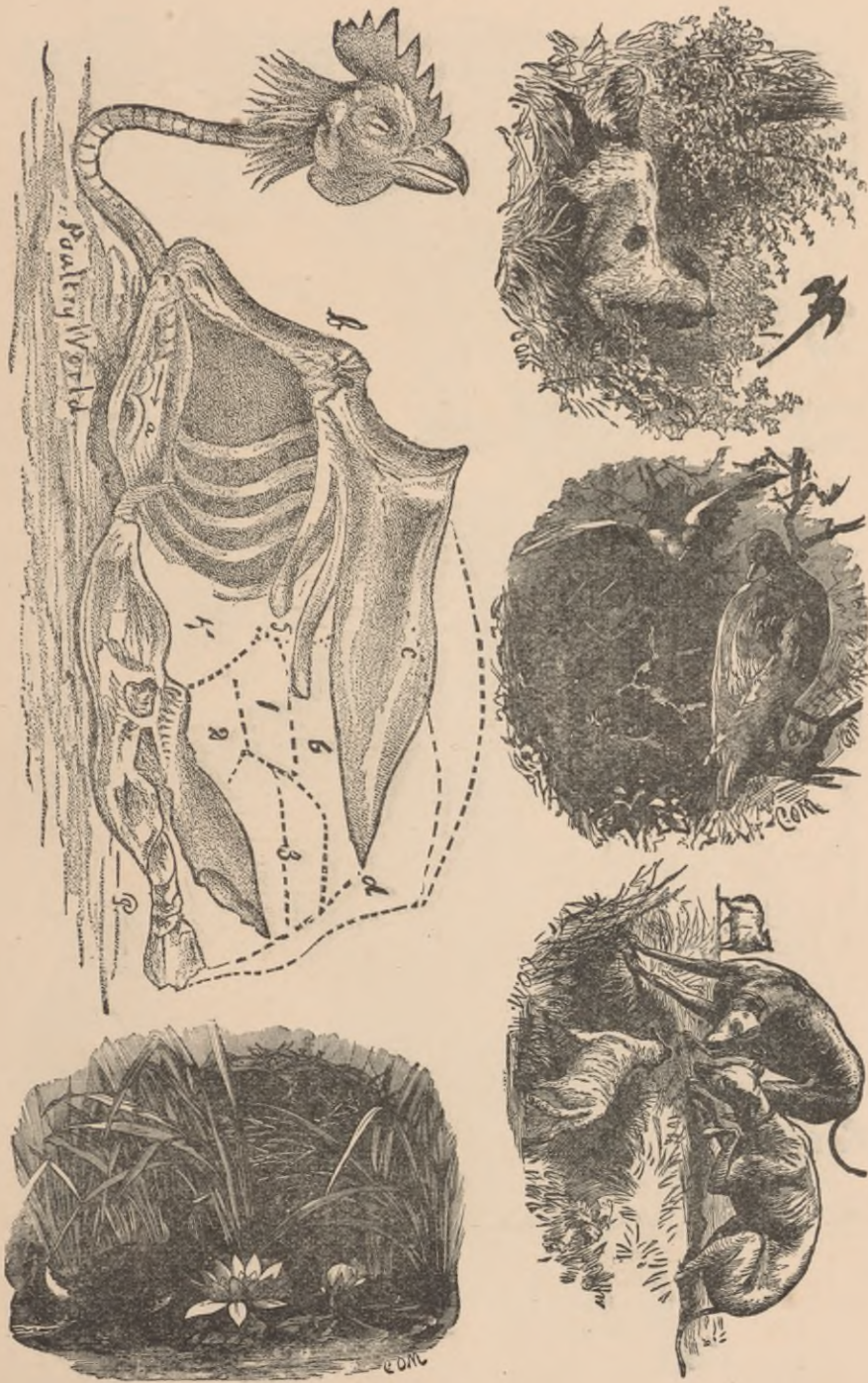
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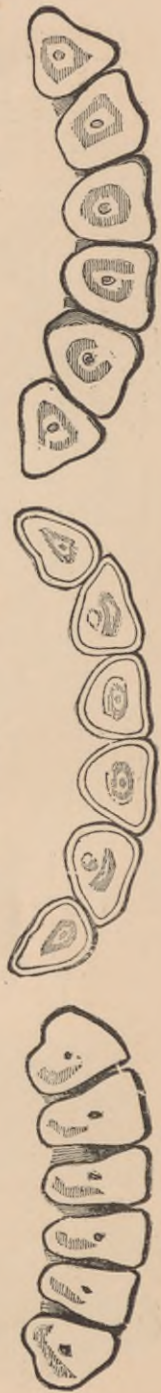
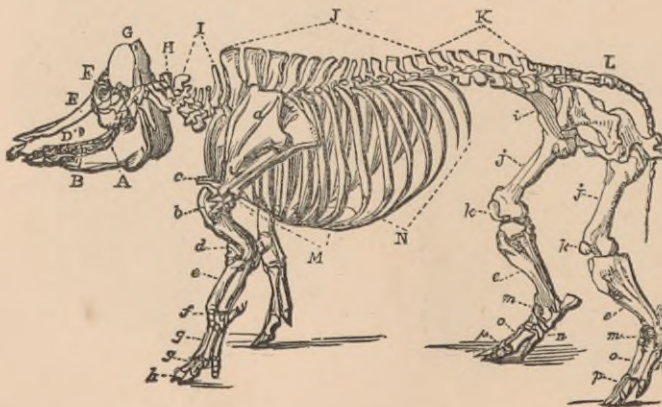
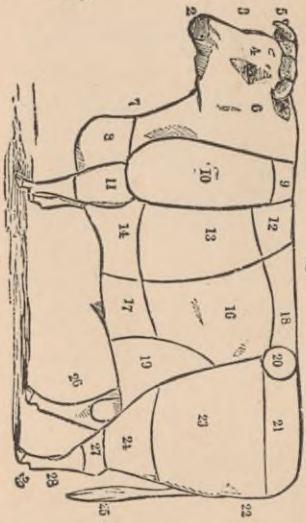
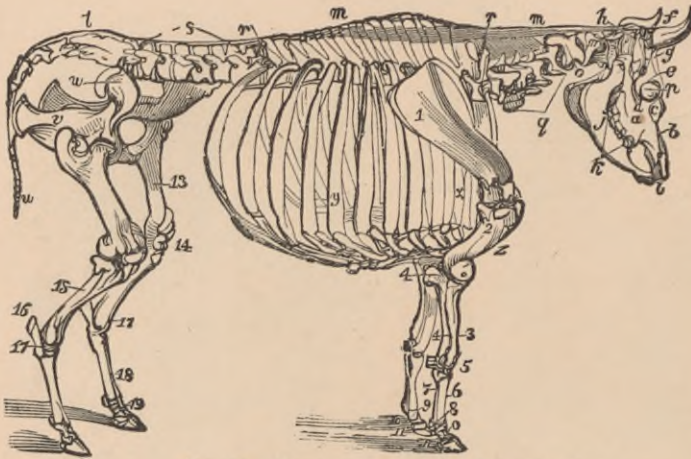
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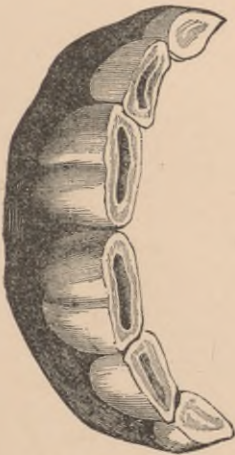
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MAKING THE MOST OF PERSONALITY

By MILDRED HOLLAND

Fitting Your Feet.

Every woman's feet should now look becomingly and truly gracefully shod, because never before in this country or any other has ready made footwear been so artistic, comfortable and varied in mode.

Straps are especially valuable in providing lines that are as flattering as possible to any and every size and shape of foot and ankle.

The central strap, for instance, extending from the vamp to an ankle strap, not only keeps a plump-footed woman's shoe from spreading, but also cuts the apparent width of the entire foot.

These straps, and the more or less elaborate cut-outs and applied decorations of the shoes of the present day modes, make it just as possible for every woman to find custom made shoes which disguise faults of her feet and ankles as it long has been to find ready-to-wear garments which cleverly disguise the commonest faults of the figure.

Women are beginning to select shoes far more scientifically than ever before. They are learning and acting upon the truth that extremely high heels are becoming to only a small minority, and that the medium height heel is quite as smart in outline and general effect and far more comfortable for the average foot.

The exquisite lines of a beautifully made French heel have inspired little rhapsodies from all types of male admirers, from novelists to writers of shoe advertisements—but all of these gentlemen visualize the graceful French heel only as it looks supporting the one and only type of foot to which it is becoming. In selecting footgear, the foot, ankle and shoe should be considered as a unit.

The pointed last is suited to an even smaller minority of feet than the high heel. The shoeing of a large proportion of population in broad-lasted army shoes was most influential in bringing home this fact to both men and women.

Pointed shoes, except in rare cases, do not provide as much room as the ball of the foot should have, even when they are long enough to allow the toes to lie in a nearly normal position.

Heavy women, who so often have small feet, are especially likely to yield to the temptation to buy shoes with narrow base heels and pointed lasts. The small heel is usually made of wood, and is extremely slender in the middle, so that the greater part of all her considerable amount of weight rests on a tiny, hard, unyielding peg.

The upward pressure of the small heel makes the feet themselves tired in only a fraction of the time they would feel any fatigue in a large-heeled shoe. Also, it turns the last of the shoe out of line, and makes it impossible for the toes to get the kind of grip on it that they should have.

This means that the weight of the whole body is wrongly distributed, and makes every muscle tired long before it normally should be.

Wrong lasts and heels spoil every line of the figure, and affect the poise of the head so that even the face is not seen at its best.

Every woman should have at least one pair of expertly made-to-order shoes in her life, even if she wears custom made ones ever after, because it will teach her about buying custom made lasts and heels to suit her individual feet.

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