GOOD HEALTH

EDITED BY FRANKLIN RICHARDS, M.D.

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A Cocoanut Palm.

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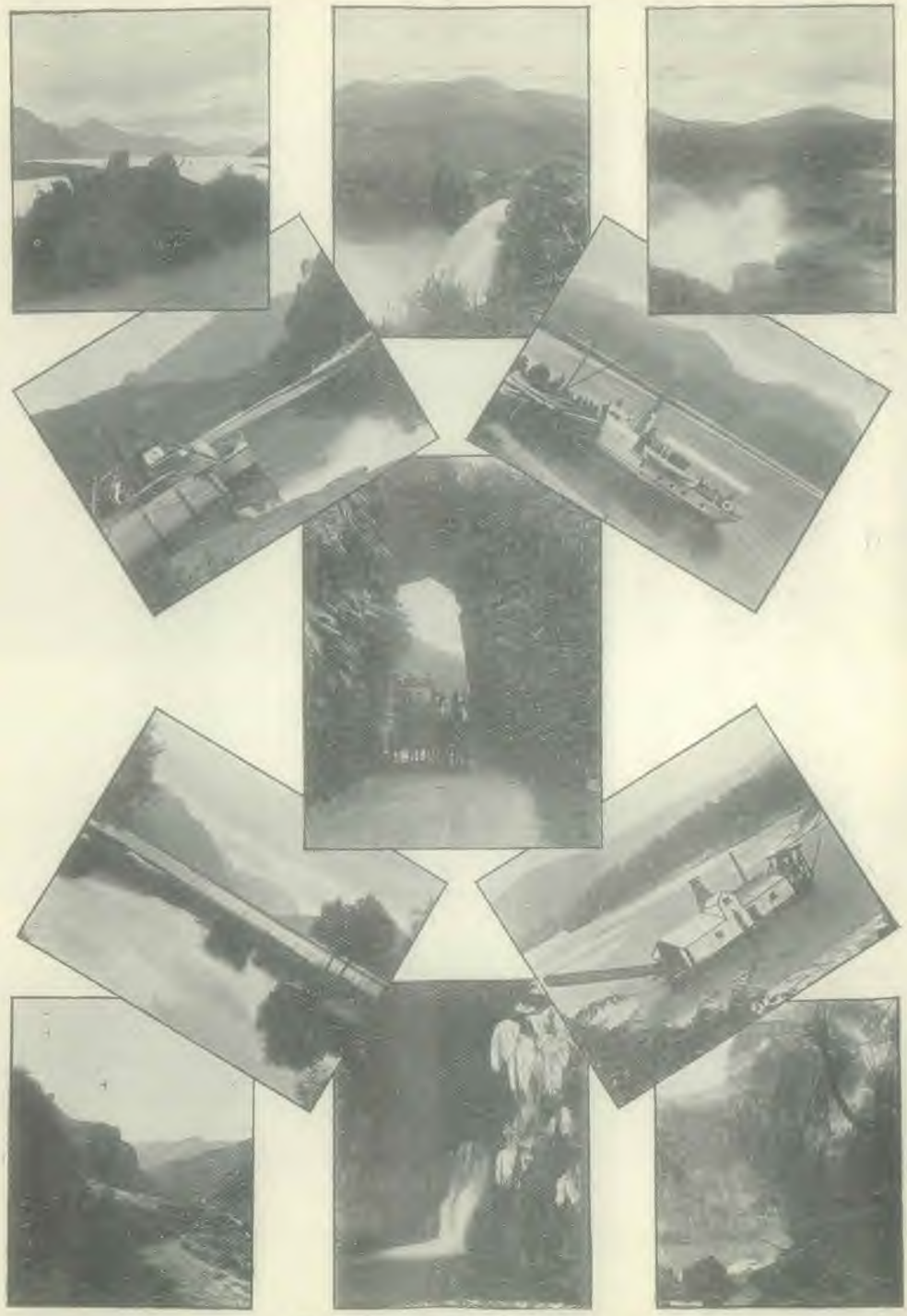


Picturesque New Zealand.

GOOD HEALTH

A Teacher of Hygiene

Vol. 11. Cooranbong, N. S. W., June 1, 1908. No. 6.

How Health Affects Ambition.

I KNOW a young lady who has very marked ability, and when she is in good health, when her spirits are up, she accomplishes wonders; but much of the time she is in poor health, and then her ambition is down, she is discouraged. The result is that she will probably never be able to bring out ten per cent. of her real ability, or to express more than a tithe of the best things in her.

Everywhere we see people doing little things, living mediocre lives, when they have the ability to do great things, to live grand lives, if they only could keep their health up to the standard.

Vigorous, robust health doubles and quadruples the efficiency and power of every faculty and function. It tones up the human economy; it clears the cobwebs from the brain, brushes off the brain ash, improves the judgment, sharpens every faculty, increases the energy, refreshes the cells in every tissue of the body.

The ambition partakes of the quality and the vigor of the mental faculties; and a brain that is fed by poisoned blood due to vitiated air, to overeating or bad eating, or to dissipation, or a lack of vigorous outdoor exercise, can never do great things. It is pure blood that makes pure thought, and pure blood can only come from a clean life, strong, vigorous outdoor exercise, a great variety of mental food, and an abundance of sound sleep.

We all know the advantage the man has who can radiate vigor, who has a robust physique. Great achievement is the child of a strong vitality. It can never come from a weak constitution or vitiated blood.—*O. S. Marden.*

The arctic traveller, Nansen, was asked by a neighbor, "Did you take any alcohol with you when you left the *Fram* to make your heroic expedition by sledges?" "No," said Nansen, "had I done so I should never have returned."

The Clotted-milk Cure.

SOUR MILK AND OLD AGE.

"TO REMAIN middle-aged at the height of all one's powers, until one is a hundred years old, or more, one has only to eat clotted milk with the same regularity that he does bread." So writes Dr. Mitchell in the *World's Work*, and though he doubtless somewhat overstates the case, there is truth in what he says.

This promise of renewed youth is based on Professor Metchnikoff's researches. By years of study and experimenting, Professor Metchnikoff has found that the germ which sours milk is the deadly enemy of the germ which causes old age. The old-age germ lives in the large intestine, and there thrives and multiplies at a prodigious rate. As a result of its activities, poisons are produced which harden the arteries and bring about the various other evidences of senile decay. To stop this process of poisoning, it is necessary to drive out the old-age germ (*Bacillus coli communis*), and this may be accomplished in many cases by setting against the old-age army a stronger force of sour-milk germs (*Bacillus lactis*).

Ordinary sour milk is not an effective weapon with which to fight old age, because ordinary sour milk is itself a decomposing food filled with the germs and products of fermentation and putrefaction. In order, therefore, to obtain benefit from the eating of clotted milk with the same regularity with which bread is eaten, the milk must be *scientifically soured*. Milk so soured is being used with gratifying results in the treatment of diseases due to the absorption of poisons from the alimentary canal. The preparation employed at the Sydney Sanitarium is known by the name of *lactosa*. Lactosa differs from ordinary sour milk much as a well-tilled field of corn differs from a piece of waste land. Only one kind of microscopic plants (germs) is allowed to grow in the milk. All other kinds are carefully weeded out.

Lactosa may be prepared at home, and as many of our readers have expressed a desire to learn how to make it, we have pleasure in passing on the method employed by the student-nurse who at present prepares lactosa for the Sanitarium patients.

HOME PREPARATION OF LACTOSA.

The first essential in the home preparation of lactosa is the *seed*—a pure culture of the *Bacillus lactis*. The second essential is the *soil*—milk Pasteurized by the method given on another page under the heading "Domestic Pasteurizing." Having these, and utensils which have been sterilized in boiling water, the method is as follows:—

After the milk is cooled down to seventy or eighty degrees Fahrenheit, it can be inoculated with the desired culture. It is most desirable to build up the starter by propagating it first in a small quantity of milk; and then after this has developed, add to it a larger amount.

After the milk has been inoculated, it should be kept at a temperature that is suitable for the rapid development of the bacteria contained in it; it should be sixty-five to seventy degrees Fahrenheit, which temperature should be kept as uniform as possible. This can best be done by setting the can in a vat filled with water at the temperature required, where it is left overnight.

The lactosa should not be thoroughly curdled and solid when ready for use, but slightly jelly-like. This point is important, for the following reasons:—

1. It is difficult to break up thoroughly the curd particles, if it is completely curdled.

2. The vigor of the lactosa is in all probability stronger when the milk is on the point of curdling, than it is after the curd has been formed for some time. The continued formation of lactic acid kills many of the bacteria, thus weakening the fermentative action. It is therefore highly important that the acidity of the lactosa should be closely watched.

The starter should be propagated from day to day by adding a small quantity to a new lot of freshly prepared milk. For this purpose, two propagating pans should be provided, so that one starter may be in use while the other is being prepared.

When lactosa is ripe, it should immediately be cooled down below forty degrees Fahrenheit, as the bacteria are then dormant.

Latent Malarial Infections.

A LATENT malarial infection is one in which the malarial parasites are present in the blood of a person, without chills or other characteristic symptoms of malaria resulting. Such cases of malaria are a grave source of danger to others. In case mosquitoes are present the plasmodia or parasites of malaria may be carried by them from the blood of one infected person to others, who will likely contract the disease in its usual form, and suffer from malarial chills and fever. For example, in the Tropics it is undoubtedly from natives having this form of malaria that the whites usually contract the disease, mosquitoes acting as carriers.

This obscure, lingering form of malaria is another of the rapidly accumulating evidences against the effectiveness of quinine, which has so long enjoyed the reputation of having a specific controlling action over malarial fever. Doubtless many cases of "latent malaria" were originally treated with full doses of quinine, with apparent good results. The chills and fever were broken and the patient declared "cured." Nevertheless, the health afterward was not all that could have been desired. What apparently occurred was this: The quinine succeeded only in changing the *form* of the disease. The original open, frank, acute malarial fever was transformed into a hidden, obscure, *chronic malarial infection*. If such be the case, surely the cure is worse than the disease.

The Open Door for Consumption.

THE open door through which consumption comes into the body is the food tube, rather than the air tube. The living germs of the "great white plague" are more often swallowed than inhaled. Meat and milk are the foods in which the germs are usually taken. Meat we can live much better without, so there is no excuse for contracting this terrible disease through its use. Milk, a certain proportion of the population are to a greater or less extent dependent upon. No child need contract consumption through its use, provided the milk is *properly prepared*. This preparation consists in the destruction of the germs of consumption by means of heat, the process being known as sterilization or Pasteurization. If the disease germs in milk were always destroyed by sterilization, there would probably exist less than one-half

the number of cases of consumption of bones, glands, and other organs now met with. For the sake of the children, if for no other reason, the mother, or some other responsible person, should see that no unsterilized milk finds its way to the table. It is a safe rule, when away from home, to refrain from using milk, or to use only milk which is known to have been sterilized by boiling, or cooking in the food.

Theoretically, milk which has been boiled is not so easy of digestion as raw milk. The boiling coagulates and hardens the curd of the milk in much the same way that the white of the egg is hardened by boiling. Practically, however, babies and persons with delicate digestive organs thrive on boiled milk, provided they are given at frequent intervals the juices of fresh, ripe fruits. The ideal method of rendering milk safe is Pasteurization, by which is meant sterilization at as low a temperature as is compatible with safety. Such a process does not harden the curd as does boiling. The chief objection to Pasteurization is that when entrusted to thoughtless, careless, unintelligent or otherwise incompetent persons, it will not be effectively done. *If it is carefully followed*, the method given herewith may be depended upon to render milk safe without impairing its digestibility.

Domestic Pasteurizing.

In Pasteurizing milk for household use, it is not desirable to treat at one time more than will be consumed in one day; hence an apparatus holding a few bottles will suffice. In this case the treatment can best be performed in the bottle itself, thereby lessening the danger of infection.

Several different styles of Pasteurizers are on the market, but special apparatus is by no means necessary for the purpose. The process can be efficiently performed by any intelligent person having in addition to the common utensils found in the kitchen an ordinary dairy (or bath) thermometer. The accompanying drawing indicates a simple contrivance which can be readily arranged for this purpose.

The following suggestions indicate the different steps of the process:—

1. Use only fresh milk.

2. Place milk in clean bottles or fruit cans, filling to a uniform level, and closing bottles tightly with a cork or a cover. If pint and quart cans are used at the same time, an inverted basin will equalize the level. Set these in a flat-bottomed tin pail, and fill with warm water to the same level as the milk. A pie pan punched with holes and inverted, will serve as a stand on which to place the bottles during the heating process.

3. Heat the pail until the temperature of the same reaches 155 degrees to 160 degrees Fahrenheit; then remove from the source of direct heat, cover with cloth or tin lid, and allow the whole to stand for at least half an hour.

4. Remove bottles of milk, and cool them as rapidly as possible without danger to the bottles, and store in a refrigerator or other cool place.

Good Health Gleanings.

Miss Rosa Symonds, the English vegetarian cyclist, who holds the world's ladies' record for long-distance riding, recently lowered her own record for the Land's-End-to-John-O'Groat's run and return, from 14 days, 4 hours and 20 minutes, to within 14 days. The distance covered was 1,860 miles.

German statistics show that total abstainers furnish one centenarian to every 2,272; drinkers, one to every 833,333. An abstainer's prospect of living 100 years is, therefore, 366 times as good as that of the drinker's.

The Burmese farmers, to meet the demand for peanuts, have planted this year 78,743 acres as against the 37,110 acres of last year.

New Yorkers have discovered that the dangers of germ infection from the telephone transmitter may be averted by placing the transmitter, in speaking, against the chest. It is found that the message carries just as well as when one speaks directly into the bell.

Why Eat Meat?

NO. I.—BY A. W. SEMMENS, MANAGER OF SYDNEY SANITARIUM.

PERHAPS the most astonishing statistics in Mr. Coghlan's book, "Seven Colonies of Australasia," are those that describe what the average Australian eats and drinks. Apparently he has the best appetite, if not the best digestion, of any human being on the planet. He eats every year 264 pounds of meat, which works out an average of two sheep and one-fifth of a bullock for every man, woman, and baby in Australasia: he eats more than twice as much meat as the average Englishman, three times as much as the average Frenchman, and four times as much as the average German and Swiss. He eats in addition about three and three-quarter hundredweight of wheat, two and one-quarter hundredweight of potatoes, and almost one hundredweight of sugar. If he is a Tasmanian, he eats one-quarter ton of potatoes in a year—quite a surprising feat.

One physician says, "I am personally of opinion that a meat diet develops higher physical and mental qualities than any other diet." Certainly, if this reasoning be correct, the Creator of the universe made a terrible mistake in giving man his first bill of fare, which was a bloodless one. Had man remained loyal, his diet would have remained bloodless, and consisted of the simple products of the earth. But of necessity, permission was granted immediately after the flood to slay and eat, although with that permission there was attached a penalty—*the shortening of life*. It is a remarkable fact of history that from almost one thousand years, the length of life has decreased to thirty-seven, or thereabouts. It can be satisfactorily proved that meat is one of the many agencies that destroy the body defence, and pave the way for the inroads of disease. Before we go more fully into the question, it will be well for us to study the nature of animal and vegetable productions, and become acquainted with relative food values; then we shall be better prepared to judge the merits of each.

The total nutritive values of the four leading kinds of meat are respectively as follows:

Beef	28 per cent.
Pork	61 " "
Poultry	26 " "
Mutton	28 " "

These give an average of thirty-six per cent.

The nutritive values of the three leading cereals are as follows:—

Wheat	86 per cent.
Oats	80 " "
Corn (maizemeal)	84 " "

These give an average of eighty-three per cent.

Rye, barley, and rice would raise the average a little, but as we do not use them as stock foods to any great extent, they will not be considered.

Flesh foods contain an average of seventeen per cent. of albuminoids; and grains eleven per cent.: the grains contain sixty-six per cent. of starch; and the meats none: the latter have fifteen per cent. fats; and the former five per cent.: the grains are only thirteen per cent. water, while the flesh foods are sixty-four per cent.; a small amount of salt and cellulose makes up the total nutritive value.

As eighty-three is about two and one-third times thirty-six, therefore flour, oatmeal, and cornmeal contain on the average two and one-third times as much food substance as beef, mutton, pork, and poultry.

Simple-minded people reason by analogy that because cattle are strong, eating their flesh must be very strengthening for man. This would be all right if the reasoning were carried a little further, reaching the conclusion that since cattle gain their strength from eating grain we can do the same. Our domestic animals gain all their strength and health without eating meat—why can't we? People can obtain strength from oatmeal as well as horses can from oats, and fat from maizemeal bread as well as hogs can from maizemeal.

As to healthfulness, it is generally admitted that grains are more wholesome than flesh foods. Fried pork is everywhere regarded as one of the most difficult dishes to digest, while cereal preparations are by common consent called health foods.

Roast pork requires five hours and fifteen minutes to digest, a longer time than any other food, while wheat bread requires only three hours and fifteen minutes. Fried salt pork takes four hours and fifteen minutes to

digest; fried veal four hours and thirty minutes; boiled chicken four hours, and roast duck a half hour longer.

Ordinary white flour is less nutritious and very much harder to digest than whole wheat or graham flour, besides being a common cause of constipation. This is not the fault of the wheat, but of the method of preparing it for food. Oatmeal would be very much more digestible if cooked from one to two hours instead of fifteen minutes. Soft pasty porridges are incompatible with sound digestion.

It would be far better if more of our breads were prepared without yeast; unleavened breads are preferable. The salting and the frying of foods make them less wholesome and digestible.

The eating of flesh foods is a common cause of liver complaints, rheumatism, and gout. Flesh meat increases the introduction of uric acid, it increases the formation of uric acid, and its salts diminish the excretion and elimination of uric acid. A milk and vegetable diet, provided no excess of albumen is taken, introduces less uric acid, causes the formation of less uric acid, and its salts promote the free elimination of all uric acid that is introduced into or formed in the body.

According to Landois and Stirling, the amount of uric acid excreted through the kidneys daily is thirty-two and one-half grains on a flesh diet, and from three to ten grains on a non-flesh diet. When we recognize the fact that uric acid is a product of imperfect nutrition; that it is the result of flooding the body with an excessive amount of nitrogenous waste substances; and when we take into account the further fact that uric acid has been shown to be, when taken in connection with other poisons which are always found present with it, one of the most active of all disease-producing agents, the figures cited become exceedingly significant. It is evident that the question is well worth careful consideration.

According to the latest investigations of Dr. Haig, "Gout is not a constitutional disease due to any defect in the formation or functioning of the body. It is a form of diet disease due to food poisoning. It follows from this that it can only be cured by leaving off the poisonous foods; and prevented by omitting such foods from the diet of the young." Gout is rheumatism, and rheumatism is gout, and the arthritis of both is due to the irritation produced by uric acid.

The questions are often asked, How does this uric acid get into the body? and Will the uric acid thus introduced suffice to account for all the uric acid of disease? First, from five to seven grains of uric acid daily may be easily introduced in the ordinary diet of meat and soups, meat extract, fish, poultry, etc. Secondly, if all this amount is retained in the body, it will mount up and form four to six ounces of uric acid in the year, though under ordinary circumstances nothing like this amount is retained in the body. Such an extensive introduction going on year after year for forty years, will with even a small retention easily furnish all the uric acid that we ever see inside a human body. If this is so, and it is so productive of disease, why eat meat when the Creator has furnished abundance of other foods which contain three times the food value, and contain no deleterious substances?

Colds, Their Prevention and Cure.

BY FRANKLIN RICHARDS, M.D.

THIS is the season of colds, if colds are ever "in season." Colds are too often looked upon as inevitable evils, too often considered of little consequence; but these are erroneous ideas. A cold is a dangerous disease, but it is a preventable disease, and curable if treated early. The best time to cure a cold is certainly before it begins. Colds are often voluntarily contracted. How often we have said, and heard others say, "I am taking a cold," with about as much complacency as would accompany the statement, "I am eating dinner." Such an attitude toward cold-catching is the chief cause of the commonness of colds. Suppose you knew you were taking consumption or pneumonia, would not this knowledge rouse you into action? Then why not become wide-awake over the fact that you are taking cold? For colds often usher in those diseases, and over fifty others. Do you know that eminent British physicians hold that one-half the deaths of the entire country are traceable to colds? Of course these fatal colds are for the most part neglected

colds, which were almost willingly "caught" and voluntarily kept. How very much wiser and better if, when the earliest sign of an on-

Wringing Fomentation.

coming cold is experienced, decided action be taken to divert its attack, and prevent its occurrence. It is certainly possible to do this, and it surely saves time and trouble.

Concerning the prevention of colds, three basic propositions are in order:—

1. A cold never comes without a cause.

2. The one great preparatory cause of colds is lowered vital resistance.

3. The usual immediate cause is chilling of the surface of the body, or of some portion of the surface, for example, the extremities.

Let us briefly consider these propositions, beginning with the first—colds never come without a cause. Those who are always catching cold, they know not how, would do well to bear this in mind, and diligently search for the cause of their supposedly mysterious colds. Until the cause of cold-catching is discovered, it is impossible to prevent repeated attacks, with their attendant dangers.

Second—the one great preparatory cause of colds is lowered vital resistance. This lessened body-resistance may be brought about in many ways, most common of which are indiscretions in eating and drinking; neglect of bathing, exercise, and ventilation; or by exposure, loss of sleep, and overwork.

Third—chilling of the surface of the body is most commonly due to sedentary habits. How common the experience of taking cold while engaged in writing, reading, or some other indoor employment which necessitates a state of inactivity. "I caught cold while *sitting* in a draught," is a frequent explanation of cold-catching. Had the person been *exercising* vigorously, the draught would not have caused the cold. Other obvious causes of chilling are the wearing of too little clothing, the disarrangement of the bed-clothes during sleep, over-clothing, sitting with the back to the fire, or standing at the fire in damp clothing; sitting or standing too long near an open window in cold weather; the use of hot drinks or stimulants before going out into the cold; the taking of a hot bath not followed by a cooling procedure; sleeping in damp beds; living in cold, damp, or ill-ventilated rooms; sudden changes of room temperature, as going from a warm sitting-room into a cold bed-chamber, etc.

When any portion of the surface is chilled, congestion of some internal part always results. A delicate balance exists between the outer and inner surfaces. This relation is well set forth in the

Carrying Fomentation

Applying Fomentation.

following lines by Sir Alfred Power:—

"There's a skin without and a skin within,
A covering skin and a lining skin;
But the inner skin is the skin without
Doubled inwards and carried throughout:
The mouth, the nostrils, the wind-pipe, and throat,
Are all of them lined with this inner coat,
Which through every part is made to extend—
Lungs, liver, and bowels, from end to end.
The outside skin is a marvellous plan
For discharging the dregs of the flesh of man;
While the inner one takes from the food and the air
What is needed the waste of the flesh to repair.
With clothing and exercise keep yourself warm,
And change your clothes quickly if drenched in a storm;
For a cold caught by chilling the outside skin,
Flies at once to the delicate lining within."

In view of the above propositions, which briefly comprehend the common causes of colds, the avoidance of colds very largely consists in maintaining vital resistance and avoiding chilling of the skin. Even infectious colds, due to the invasion of microbes, will be to a great extent avoided by attention to these two points. The skin may be trained to resist the cold, by the daily use of cool or tepid water, applied to the entire surface of the body with vigorous friction. This is one of the most effective measures against colds. Cool sponging of the body should also follow the warm bath, taken once or twice a week to keep the skin clean and healthy. The body should be properly clothed and scientifically fed, and otherwise cared for. Exercise and deep breathing are most useful in the prevention, also in the cure, of colds in their earlier stages. The use of stimulants and narcotics, and all other habits which tend to lower the vital resistance, should be avoided. Mouth-breathing is a very bad habit, which predisposes to colds.

THE CURE OF COLDS.

An important point is to begin early; when the first symptoms of congestion of the nose and throat are experienced, treatment should be begun and persisted in until relief is experienced. Those engaged in sedentary occupations are often able to cure a cold at its outset by means of vigorous outdoor exercise, accompanied by deep breathing. A brisk walk or a run, or an hour or two at the wood pile, will often suffice to break up a cold. Another excellent method of equalizing circulation, is the combined hot arm- and leg-bath. This is well suited to the needs of those who are too feeble to exercise to the point of perspiration.

Our illustrations show another method of treatment which is especially suited to the cure of a cold on the chest. It consists in the application of fomentations to the chest and back. The first illustration shows the method of wringing the fomentation from boiling water; the advantage of grasping it by the ends, which are kept dry, is obvious. The second illustration shows the method of carrying the fomentation. The part folded in, retains the heat. This part should be applied to the chest. The fomentation should be wrung as dry as possible, and covered with a dry flannel, which may be left on the chest while the inner flannel is being dipped and wrung a second time. In this way the heat may be renewed every four or five minutes. The part to which the fomentation is applied should become well reddened.

Various other sweating procedures are useful in the treatment of colds; they are best employed just before retiring, as otherwise chilling is likely to result. It is stated by a very good authority that the best, and indeed the only, cure for colds which have obtained a firm hold, is the "rest cure." This consists in putting the patient to bed for forty-eight hours.

How to Prevent Hydatid Disease.

HYDATID disease is caused when man or other animals swallow the eggs of a tapeworm, which lives in the intestines of the dog.

These eggs are voided by the dog with its excrement in great numbers. They are too small to be noticed unless they are searched for with a magnifying glass. After being passed they continue alive and are capable of hatching for a long time, but they can not hatch unless they enter the body of man or other animals by being swallowed.

When the eggs have been swallowed by man or other animals, and have hatched in the intestines, they do not become tapeworms. The embryos first bore their way to

some solid organ of the body—to the liver, the lungs, the heart, the brain, etc.—and there they may develop into bladder worms. These are what are called hydatids.

If parts of an animal which is infested with hydatids are eaten by the dog, the bladder worms again become tape-worms in its intestines. Then the dog passes the tape-worm eggs, and this circle of life can recommence.

The minute eggs of the tape-worm of the dog can gain access to man so as to be swallowed by him in various ways. They can be washed by rain into streams, ponds, unprotected wells, etc., and thus may be swallowed with unboiled water; they can be blown about with dry dust, and thus reach roofs, whence they may be washed into rain tanks, or they may thus reach and stick to articles of solid food; they may stick to vegetables which are commonly eaten uncooked—to lettuces in the kitchen garden or to watercress in the streams. The eggs also cling to the hair of dogs—about their bodies and about their muzzles: thus if dogs are much handled or allowed to lick the hands, or are fed at mealtimes, the eggs may unconsciously be carried direct to man's mouth on his fingers.

PRECAUTIONS IN PREVENTING HYDATID DISEASE.

1. Try to prevent dogs from getting the tape-worm. Never allow them to enter slaughter-house premises, nor to eat uncooked offal, nor to pick up food as they stray about; feed them carefully at home. Keep them clean; groom them occasionally; do not allow them to make friends with strange or stray dogs. Regularly scald out their kennels and the ground around any place at which they are chained up; for, notwithstanding all precautions, any dog may acquire tape-worm, and the eggs are easily killed with boiling water.

2. Ownerless and useless dogs should be systematically destroyed. These pick up their food where they can, and are most likely to have the tape-worm. Cared-for dogs are often infected by stray dogs which have the eggs clinging to their coats.

3. Do not allow dogs to enter the house; do not allow them to play with children; never allow them to lick hands or face; never feed them at mealtimes, but always apart.

4. Prevent dogs from entering any water which may be used for drink by man. Never drink water from unprotected ponds or streams until it has been boiled; it is very likely to have been contaminated by dogs.

5. Keep dogs strictly out of the kitchen garden. Boil all vegetables before eating them; but if salads are required, wash them in running water (not in a dish), leaf by leaf. It is better to avoid salads taken from unknown or unprotected gardens.—*From Suggestions for the Prevention of Hydatid Disease, Department of Public Health, N. S. W.*

The Story of the Factory of Life.

BY FRANKLIN RICHARDS, M.D.

No. 6.—The Machinery of Digestion.

ONE of the most marvellous of the processes carried out in the workshop of the body, is that of digestion—the conversion of food into blood. This transformation is accomplished in the *alimentary canal* by the combined mechanical, chemical, and vital activities of five principal machines, called digestive organs.

MOUTH DIGESTION.

The importance of the machine into which the food first enters is greatly underestimated by the average person. This machine, when in perfect order, is splendidly equipped with sixteen pairs of hard, well-polished, firmly fixed cutters, crushers, and grinders. No doubt well-kept teeth are attractive, but what is of greater importance, they are essential to perfect mastication. As the food is crushed and broken by the teeth, it is held between the upper and lower by the muscles of the cheeks and tongue. By the latter it is also rolled about, pressed and rubbed against the corrugated palate, and carried from one side to the other. Thus by this combination of many varied movements of the lips, cheeks, tongue, teeth, and jaws, the food is broken up and ground. But this is the merely *mechanical* part of mouth digestion. Accompanying these mechanical activities are chemical transformations most surprising—providing the first rule of good digestion is observed, and before the owner of this mill sits down to meat the pangs of *real hunger* are experienced. If only a

"faint" or "sinking," "weak" or "all-gone" feeling is felt; or if the food is being eaten simply because it is "mealtime," for sociability's sake, or for any other one of a dozen similar reasons (or excuses, rather) for eating; then what I am about to describe *does not take place*.

But let us take it for granted that the man who owns the mill has been working hard out of doors, and is really hungry. In that case the mouth begins to "water" at the mere

THE TONGUE.

Showing the nerves of motion and sensation (E, F, and G), the "taste buds" (H and L), and the roughened upper surface, by means of which the food is rubbed against the hard, grooved palate.

thought of food. Its savory odors call forth an abundant flow of active "appetite juice." This activity is still further increased by the sight of the food, and reaches its climax when the food is tasted. The salivary glands overflow, their active juice is poured out into the mouth, and thoroughly mingled with the food by the movements of mastication. And now takes place one of the interesting chemical transformations which commonly occur in the body. Suppose a crust of bread is being eaten. As it is chewed and moistened in the mouth, it soon becomes almost as sweet as sugar, indeed becomes sugar—not the ordinary factory kind of sugar, but a kind of far greater value to the body. The dry, hard, tasteless crust of bread has been converted into *maltose*, or fruit sugar. This change is wrought by the action of a ferment which is made from the blood by the salivary glands. The name of the ferment is *ptyalin*. Its digestive action on starch resembles the diastatic action of malt extract.

It has been shown that when mouth digestion is imperfectly performed because of bad teeth, feeble ptyalin, or, what are more common causes, fast eating and the taking of drinks with the food so that bread and other starch articles of diet are "washed down" in lumps,—when for any of these reasons or others mouth digestion is faulty, indigestion results and dyspepsia is ultimately produced. Therefore special thought and care should be given to the proper performance of this part of digestion. The food should be dry enough to require chewing and moistening in the mouth, and this chewing and moistening should be very thoroughly accomplished. Even liquid foods, such as soups, milk, etc. should be very slowly sipped and held in the mouth in order that they may be tasted, enjoyed, and partially digested before being swallowed. This is *your* part in the process of digestion. Therefore see that it is well done, and your reward will be great.

A Utility Tree.

FEW products of the vegetable kingdom can serve such numberless uses for man as the cocoanut palm. Its crown of graceful pinnate leaves branching from the top of a smooth trunk, makes it one of the most beautiful as it is one of the most useful of trees.

Where it is grown abundantly its leaves are employed for thatching roofs, its fibres for manufacturing many articles. Its trunk yields a timber known as porcupine wood, which is used for building, for furniture, and for firewood. Potash in abundance is produced from its ashes.

The fruit, which matures in bunches of from ten to twenty, each from twelve to eighteen inches in length by six or eight in diameter, and weighing upward of five pound, supplies no inconsiderable portion of the food of the people wherever the palm flourishes.

The nut is eaten raw, and is prepared for the table in many ways. Gathered while still green, and before the meat has

solidified, the flesh is soft like custard and may be eaten with a spoon, while a large quantity of delicious cocoanut milk, a crystal, cooling beverage, is obtained from each nut.

This milk can be used for all purposes of cooking, the same as dairy milk. A cream will also form on the top, if the milk is permitted to stand, which serves every purpose of both cream and butter.

The nut, as exported, is very nutritious, supplying both nitrogenous and fatty material in abundance and in a form most digestible.

In its matured state the nut is seldom used for food in countries where it is grown, the fibre being coarse for digestion. The water, too, having lost its effervescence and sweetness, is discarded.

The principal food use of the mature nut is for making milk. This is prepared by removing the flesh from the shell, grating it as finely as possible. When this is completed, a pint of hot water to each nut is added to the pulp, mixed well, and allowed to stand until cool. It is then dipped in portions in clean cloths ten to twelve inches square, is wrung first gently, then vigorously, until nothing more can be squeezed out. The last wringings contain the richest, most nutritious milk, which is at once ready for use.

A juice is also obtainable from the unexpanded flower spathes. This is termed toddy, and may be evaporated, as is cane juice, into a sugar. This juice is also made into an intoxicating liquor through fermentation and distillation, known as arrack.

The shell of the nut has a varied use as a table utensil, finger bowl, drinking cup, etc., and from it are made spoons, ladles, and a variety of other useful articles. The external husk or rind supplies a fibre termed coir, from which are manufactured ropes, door mats, and brushes. The cocoanut is most valuable also for its oil, which is extracted by pressure or by boiling from the kernels, which are first broken up into small pieces and dried in the sun. These broken pieces are termed copra. It is estimated that one thousand full-sized nuts will produce five hundred pounds of copra, from which twenty-five gallons of oil may be extracted. The solid portion remaining after the oil is removed, cocoa stearin, is used for manufacturing candles. The oil is variously used,—for cooking, soap making, and for other commercial purposes. From the fresh young stems of the tree is prepared a farinaceous substance similar to sago. A Polynesian proverb says, "The man who plants a cocoanut, plants meat and drink, health and home, vessels and clothing for himself and his children after him."—*Good Health* (*American*).

The Home Department.

CONDUCTED BY MRS. E. SISLEY RICHARDS, M.D.

Savory Soups without Meat.

WHETHER or not soup should be served with dinner, depends largely upon the nature of the soup and the manner of its serving. A thin soup which makes up for its lack of nutrition by its excess of pepper, would better be omitted from the meal; while a nutritious, wholesome soup may well be served in small amounts in connection with the chief meal of the day. It is always contrary to the laws of good digestion to take a large quantity of any sort of liquid with the meal (except when an exclusive liquid diet is being taken), but a moderate amount of good soup acts as an appetiser, and stimulates the flow of the digestive fluids.

It is quite possible to produce most excellent and tasty soups without the use of meat stocks. The water in which the macaroni is boiled makes a very good soup stock, as does also the broth from lentils or dried beans.

Following, are a number of recipes which may be helpful:—

LENTIL AND TOMATO BROTH.

Thoroughly wash a pound of brown or of German lentils, and leave them soaking in cold water overnight. In the morning put them to boil, and allow them to simmer gently until they are quite tender. It may be necessary to add boiling water from time to time. When the lentils are done, there should be sufficient water covering them to constitute the chief part of the soup. Drain off the broth, adding to it from one to two cups of strained tomato juice. Re-heat, season with salt, a little onion juice and herbs,

if desired. The lentils which remain may be rubbed through a sieve, seasoned nicely, and served as a purée on the following day. These are inexpensive and at the same time very wholesome dishes. If preferred some of the lentil pulp may be added to the broth, making a thicker soup.

Beans may be prepared and served in the same way as lentils. The broth from the brown beans, if thoroughly stewed, is wonderfully rich and savory. In fact, any of the leguminous broths, if properly prepared, can scarcely be distinguished from meat broths. The intrinsic difference is this—The leguminous broths are rich in nutritive elements as well as flavor, while the meat broths are rich in flavoring extracts, but poor in food elements.

If it is desired to produce a soup which is highly nutritious, milk may be added to the pulp of the legumes, as in the following:—

Cream of Bean and Cream of Pea Soup.

Thoroughly wash one pound of either good beans or dried peas. Soak overnight in cold water, then put over the fire in the morning. They should be cooked in the same water in which they have been soaking, unless the flavor of the legume is considered too strong, in which case fresh water may be used for stewing. Simmer gently for several hours, or until the legumes are tender. Then pass the beans or peas through a colander to remove the tough skins. To this pulp, add enough sweet milk to make a soup of desired consistency; season with salt and celery; re-heat and serve. A bowl full of hot cream of bean soup, with breadstuffs, would constitute a good luncheon for the boy or girl who returns home from school "as hungry as a bear."

Tomato Vermicelli Soup.

Strain one quart of stewed tomatoes through a colander to remove the skins and seeds. Take one-half cup of vermicelli, drop into one cup of hot salted water; cook until done, which requires only a few minutes; then turn into the tomato, heat together, season with salt, add one-fourth cup of cream. When adding cream to tomato, care should be taken not to put the cold cream into the hot acid, for it will curdle it. Either beat the cream first, or add a little tomato slowly until the cream is all warmed; then it can be turned into the tomato without curdling. Serve at once.

Tomato Bisque Soup.

Take half a cup of nut butter, two cups of tomatoes, three cups of water, four teaspoonfuls of salt. Rub the nut butter smooth in the tomato, add the water, heat to boiling. Add salt enough to destroy the acid taste of the tomatoes. Serve hot.

Split Pea Soup.

For each quart of soup desired, simmer a cupful of split peas very slowly in three pints of boiling water for several hours until thoroughly dissolved. When done, rub through a colander, re-heat, and when boiling stir in two teaspoonfuls of flour slightly browned and rubbed smooth in a little cold water. Boil until thickened, and serve. If preferred the soup may be flavored with a little celery or onion. Salt to taste.

Potato Soup.

Peel half a dozen good-sized potatoes and cook them in as little water as possible. When done drain off the water, but save it to return to the potatoes after they have been thoroughly mashed. Add enough milk to make the soup of the desired consistency. Season with onion, re-heat, and serve.

It is always well to serve zwieback or croutons with soup. To make the latter, cut white bread into slices a half-inch thick, then cut these slices into half-inch squares. Place them in an unoiled pan, and toast them in the oven until they are nicely browned and crisp throughout. This is a good way of utilizing stale pieces of bread.

Food Wisdom.

The average woman who finds herself alone in the world, could earn her living if she could cook—but she can't.—*Max O'Rell.*

There probably never has been a period in the history of the profession when the value of diet in the prevention and cure of disease was more fully recognized, than the present.—*Osler.*

The amount of proteid and albuminous food (consisting usually of meat) needed daily for the actual physiological wants of the body is not more than *one-half* that ordinarily consumed by the average man.—*Professor Russel N. Chittenden, Director of the Sheffield Scientific School of Yale University.*

Answers to Correspondents.

127. **Hot Foot-bath, Cold Shower, Ptomaine Poisoning, Stopped Nostril, Blotches, Varicocele.**—E. D., North Brighton: 1. Would it be injurious for one suffering from a cold during menstruation to put the feet in hot water? *Ans.*—No.

2. Would it be injurious to take cold shower baths under the above conditions? *Ans.*—Yes, unless the person possesses unusual vigor and power to react.

3. What should be done as first aid in case of ptomaine poisoning? *Ans.*—As soon as nausea, griping pains, chills, giddiness, faintness, or other early symptoms of ptomaine poisoning are experienced, vomiting should be induced by means of some simple emetic such as warm salt water, or the stomach should be thoroughly washed out by means of the stomach tube. Following this treatment, a dose of salts or other cathartic should be administered, and hot enemas employed: hot water containing salt in the proportion of one teaspoonful to one pint of water, should be freely and regularly drunk, at least half a pint every half hour for several hours. If more severe symptoms such as fever, restlessness, severe chills, cramps, numbness, drowsiness, and coldness of the skin, appear, hot blanket packs, alternate hot and cold applications to the spine and heart, and other stimulating treatment should be given. Of course a physician should be sent for as early as possible.

4. What is the cause and remedy for alternate stopping of the nostrils? *Ans.*—Catarrhal inflammation of the nose and throat producing obstruction through swelling of mucous membrane or accumulation of secretions. Cleanse the nose twice daily with cool normal saline solution, and practise forced breathing through each nostril alternately. The water should be drawn freely through the nostrils from a glass, being sniffed well up or deeply inhaled, and allowed to escape through the nose or the mouth.

5. To what are small, burn-like blotches and blisters on the face and hands due? *Ans.*—Probably to fermentative indigestion or constipation. Masticate the food thoroughly; take fewer dishes at a meal. Use albuminous foods very sparingly, and clear the colon by means of a coloclyster.

6. I am suffering from varicocele and have been advised by one physician to have the veins tied, and by another to have them cut out; would like your opinion as to which is the most effective and satisfactory method. *Ans.*—Operations on varicocele are not invariably satisfactory and successful, by whatever method. If varicocele is slight in degree and not particularly troublesome, I should not advise an operation of any sort. Cold water bathing and the wearing of a suspensory should give considerable relief. As to the comparative value of the two operations suggested, the present position of surgeons generally, is that the "blind operation," or the operation by tying, is neither safe nor effective. If recourse is had to an operation, I should certainly advise the "open method," that is, ligation and removal of the veins through an open wound, which should be made high up over the external opening of the inguinal canal.

128. **Milk between Meals, Swellings on Neck, Flatulence, Obstipation.**—E. W., Numurkah: 1. Is the practice of drinking milk between meals to be recommended? *Ans.*—No. Milk is a food, and as such, should be taken only at mealtimes, and then always with dry breads and cereals to ensure insalivation and prevent the formation of large hard curds.

2. I have small, permanent, itching swellings on the neck, and would be glad to know their nature and cause. *Ans.*—I judge from the description given, that these lumps are due to a disordered condition of digestion, causing impure blood. This condition renders easy infection of the skin from without. Improve digestion, relieve constipation, and increase elimination by free water-drinking, exercise, deep breathing, and baths daily.

3. What is the cause of belching of wind from the stomach, with disagreeable odor? *Ans.*—Fermentation of the food eaten. It may be necessary to wash out the stomach once a week for a time, or accomplish a similar cleansing by abstaining for a few meals from all food, except the juice of oranges and lemons; meanwhile drinking water very freely.

4. *Ans.*—The bowel disorder will doubtless improve with improved digestion from carrying out the suggestions given above. A thorough cleansing of the colon by means of a coloclyster two or three times a week, is also indicated. For catarrh, cleanse the nose with cool normal salt solution (one teaspoonful to one pint) daily.

129. **Pains in the Head and Heel.**—E. W., Coraki: I am troubled with pains in the head on rising, sometimes back and front, and in the left heel. Pains get worse when there is a change in the weather. Would a medical battery or mechanical massage give relief? *Ans.*—The pains are probably due to the presence of uric acid and other wastes produced in the body. Discard all flesh foods, including fish and fowl; tea, coffee, tobacco, and alcoholic stimulants. Eat sparingly of cereal foods, and freely of fruits. Drink water freely; keep the skin active by daily cold friction bath, and the weekly warm cleansing bath. The use of the battery or vibro-massage machine is not indicated.

130. **Digestibility of Dates, Milk, Rice; Weak Heart; Dandruff.**—J. J., Waihi: 1. Are dates easier digested when baked in puddings, than stewed? *Ans.*—Dates in moderate amount are quite digestible in both these forms. Like other foods rich in sugar, they must be eaten somewhat sparingly.

2. Is milk made more digestible by the addition of lime water? *Ans.*—Dilution of milk with lime water, plain water, or the admixture of well-cooked barley or oatmeal gruel, prevents the formation of large hard curds, which are formed when undiluted milk is taken as a drink. Milk is best eaten with

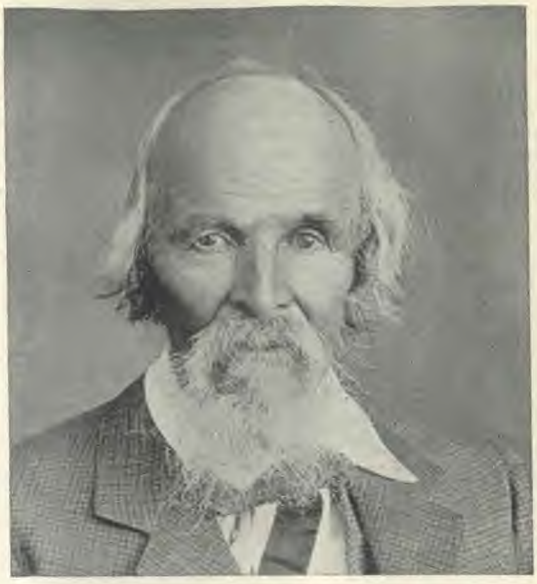
bread or cereal foods or cooked in the food. In all cases it should be sterilized before using.

3. Is plain milk-and-rice pudding a perfect meal, and do you recommend its daily use for indigestion and constipation? *Ans.*—Such pudding made with whole milk is well balanced so far as the proportion of starch and proteid goes; it is perhaps slightly deficient in fat. If well baked, milk rice pudding is easy of digestion, but not laxative.

4. What remedy do you recommend for weak heart (fatty)? *Ans.*—The best remedy for strengthening weak heart is carefully graduated exercises; the Schott system is successfully employed in sanitariums. Cold friction judiciously employed, is also beneficial. The diet should be spare, special care being taken to avoid articles of food which produce flatulence.

5. Can dandruff be eradicated? *Ans.*—Possibly. Treatment which is helpful consists in brushing and rubbing the scalp daily; shampooing once or twice a week, afterward applying a lotion composed of alcohol eight ounces, resorcin one dram.

131. **Pain in Chest and Arm.**—J. W. E., Lilydale: What is the cause of shortness of breath on exertion, and pain in the left side of the chest, which extends down the left arm? *Ans.*—You are probably suffering from weakness of the heart. As the pain is relieved by rest, the remedy is in your own power to apply. You will of necessity be obliged to give up the hard work to which you have been accustomed. With rest and total abstinence from the use of narcotics and stimulants such as tobacco, alcohol, tea, coffee, etc., the heart should gradually grow stronger. See answer to J. J., Waihi, for treatment.



WILLIAM LAYLEY.

From an Old Vegetarian.

BETWEEN thirty and forty years ago, I was obliged to abstain from flesh foods of all kinds on account of having suffered for some years with indigestion. I was so bad that the doctor told me I could never fully recover. But thanks to vegetarianism, I have proved his prophecy to be erroneous. Soon after I adopted the new diet, my headaches, biliousness, and heartburn left me, and I began to experience renewed youth. To-day I am seventy-seven years of age, and even now have better health than I had in the days when I used meat. I am nearly as active and can do a day's work in the garden almost as well as when younger. At the present my weight is a little under eight stone. I have had failing sight and hearing for some fifteen years, but this was caused through a severe fall from a horse.

I believe that food reform must become the foundation of moral and religious progress. I may say that I have never met a vegetarian who drank or smoked.

WILLIAM LAYLEY.

Sandford, Victoria.

"A line of vision unobstructed by discouraging thoughts, will transform obstacles into opportunities."

DEATHS from plague in India during 1906 numbered 56,619. Acting Assistant Surgeon Eakins, of Calcutta, says that these figures are comparatively low; 1,777 inoculations were performed and only one death was reported of those inoculated. Rat extermination is being vigorously carried out in many places.

PROFESSOR JAFFA, of the California State University, says in a bulletin just prepared for the United States Department of Agriculture, that ten cents' worth of peanuts contains more than twice the protein and six times the amount of energy contained in a porterhouse steak.

HEALTH COMMISSIONER EVANS has begun systematic efforts to reduce the number of consumptive cases in Chicago. He announced that tuberculine would be issued free to physicians, and if necessary the diagnosis would be made by physicians from the health department.—*Chicago Tribune.*

ANTI-RAT SOCIETY IN ENGLAND.

A SOCIETY has been formed in England for the purpose of exterminating rats. Sir James Crichton Browne, who is identified with the movement, gave an able address, in which he showed that the rat is a dangerous menace to health, as well as a nuisance.

MANY ILL FROM CHEESE POISONING.

AT the McKinley Banquet in Bay City, Mich., the guests who ate cheese were taken violently ill. It is said that about one hundred persons suffered.

EFFECT OF MIND ON BODY.

ALTHOUGH it has been fifteen years since John Shoeing, a Memphis cigar-dealer, lost his right leg in a railroad accident, he has suffered pain which he believed due to the fact that the limb was not properly buried. Accordingly the leg was exhumed, and readjusted in its box. Shoeing says he has suffered no pain since then. The effect would doubtless have been the same if some other leg, or an imaginary leg, had been dug up.

PRICE OF BOOK "MINISTRY OF HEALING."

IN the advertisement on page 119 of this issue, concerning the valuable publication "Ministry of Healing," an error is made in stating the price. It should read: price 7s 6d; by post, 8s 6d.

To get relief from a headache, an American blacksmith had recourse to morphine, and three hours later was dead.

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