

# The Hatchet

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## POPULAR • SCIENCE.

The modern abundance of meat and the increasing tendency to overeat are held by Sir William Banks to be a cause of the increase of cancer. He finds the view supported by the fact that cancer is increasing chiefly among the males who have added to their indulgence in heavy food much more than the females.

The photographing of condensed air waves that attend the flight of shot or shell will be remembered. In a similar effect, Professor Wood has photographed waves of sound, showing the alternate condensation and rarefactions of air. An electric flash, estimated at a millionth of a second, illuminates the source of the sound in this experiment.

During the winter, Dec. 21 to March 21, the earth is nearest to the sun, though the northern hemisphere is turned from the sun so that it does not get its rays directly, but at an oblique angle. The earth requires time to throw off the heat absorbed during the summer; this fact accounts for the chief cold of winter coming after Dec. 21, as a rule.

Du Bounier, a French physician, recently described before the Paris Academy of Medicine a new method of testing for deafness, namely, by applying a tuning fork to the knee or some other part of the bony structure. He said that a sound ear could not hear the note of the fork, but an ear in which disease had already made inroads could perceive it distinctly.

Live plants are plants with their particles in motion building up the plant's structure. This motion is known as vital energy. Physical energy results in decomposition. The material out of which plant structure is formed is known as protoplasm. The forms of flowers result from varying degrees and directions of vital energy, but what starts the motion in protoplasm, has not been demonstrated.

A Russian chemist has found that copper is dissolved by an alkaline solution of gelatine, the copper going into solution as colloidal copper. The old rule that the metals are insoluble in water is being widely disproved, solutions of metallic gold, mercury and silver, and now of copper, having been prepared quite recently. In all these the metals are in very fine condition, but are true metallic solutions.

The long "feelers" or antennae of insects are in reality sense organs. It has been found that they are covered with tiny pits to which nerves run. These pits are supposed to be the organs of smell of the insect. One often notices ants touch their "feelers" when they come together; they may communicate with each other in this way by their sense organs as they seem to understand each other. They are thought to be principally the seat of the organs of smell, but their uses have not been fully determined as yet.

Capt. Eckhoff, of the steamer La Hesbaya, from Antwerp to Baltimore, unwilling to slacken speed while off our coast, or averse to rescuing savage castaways, passed by a small, low iceberg on which were four large polar bears. They had evidently been carried away when the ice field broke from an arctic glacier. If the bottom of the sea where their bones finally rest is ever lifted and lithified as dry rock, the geologist of the future will have an easily demonstrated problem of possible very low latitude glaciation, if he so happens to regard it.

The London Optician reproduces the views of Dr. Kotz, a Russian physician, on fatigue of the eye. Whether muscular or retinal, fatigue of the eye, says Dr. Kotz, may be approximately measured by the number of eyelid movements, or involuntary blinks in a specified period. By this system, more than three movements per minute indicate a thoroughly unsuitable illumination. The experimental results obtained by this somewhat crude method are given as: Candlelight, 6.8 movements per minute; gas, 2.8; sunlight, 2.2; electric light, 1.6.

At the latest annual meeting of the Geological Society of America, Prof. I. C. Russell called attention to the recent discovery that many of the swamps and lakes in the southern peninsula of Michigan are rich in calcareous marl, suitable for making Portland cement. Although partly composed of shells the Michigan marl is principally a chemical precipitate which is still being formed. The precise method of its formation is not yet understood. The supply is practically inexhaustible. Large cement works have lately been constructed, others are in contemplation, and Professor Russell says that Michigan can easily take a leading place in that industry.

Among the most remarkable glimpses into hidden corners of nature that recent scientific advance has afforded are the frequent discoveries of micro organisms in unexpected places, where they produce phenomena heretofore supposed to arise from other causes. For instance, Dr. A. Pettersson, of Upsala, Sweden, has ascertained that in preparations of meat and fish containing, for purpose of preservation, salt to the amount of fifteen per cent. micro-organisms grow luxuriantly, and he concludes that the flavors and odors that are peculiar to various salt conserves are due to the micro-organisms with which they are crowded.

Morris Gibbs describes—what probably thousands of our readers have observed—the very curious hovering, or dancing, habit of a species of two-winged flies, which assemble in groups of twenty to one hundred or more, in some spot sheltered from the wind, and indulge in a fantastic dance for hours at a time. The motions consist of alternate rising and falling in periods of a few seconds, and over a distance varying from one to four feet. The insects seem to become so interested in their sport, if sport it is, that they cannot be driven away from one another, but immediately reform their companies when disturbed. Many species of insects have the habit of hovering in the air, some in parties only and some singly.

## GEMS OF THOUGHT.

The denial of self leads to the narrow way.

Kind benefits oft flow from means unkind.—Avenge.

Knevery's plain face is never seen till used.—Shakspeare.

God's music will not finish with one tune.—Sir E. Arnold.

In this life we want nothing but facts, sir; nothing but facts.—C. Dickens.

In the human breast two master passions cannot co-exist.—Campbell.

Life is a service, the only question is whom will we serve.—F. W. Faber.

Sin is that awful thing which looks God in the face and says "I won't."—A. F. Beard.

We are answerable not only for what we know, but for what we might know.—Manning.

Judgment is not upon all occasions required, but discretion always is.—Lord Chesterfield.

Nothing can be love to God which does not shape itself into obedience.—F. W. Robertson.

Resolving to forsake all things, remember among them to forsake thyself.—S. Bernard.

Those are the best Christians who are more careful to reform themselves than to censure others.—Fuller.

Duty is the great mountain road to God. Follow duty if you would know the Christ-like calm in the presence of wrong.—Lloyd Jones

The reputation of a man is like his shadow—gigantic when it precedes him and pigmy in its proportions when it follows him.—Talleyrand.

A forgiveness ought to be like a cancelled note, torn in two and burned up, so that it can never be shown against the man.—Henry Ward Beecher.

To live in a perfect world would be easy. The problem is how to live in this world and not be of it; how to participate in its labors and cares, and not contract its taint of moral wrong. The problem can only be solved in the light of Christianity which shows us how to live in and yet above the world; how to be citizens of heaven and yet sojourners on earth; how to retain a devout temper of mind amid the pressures of worldly duties and difficulties. The Christian restores harmony by bringing heaven down to earth.—Zion's Herald.

A word is the manifestation of a thought. If I wish to communicate a thought to you that thought takes shape in words. You cannot see my thought, but what is there comes through the channels of speech, and so travels through your ear to the mind, and becomes part of your thought. Now, Christ became the Word to take the thought out of the mind and heart of God and translate that thought so that we could understand it, so that what was before invisible and inaudible and beyond the reach of our senses, comes into our minds and hearts as something that was in God's mind and heart, but now is in ours. Beautiful, indeed, is this as an expression of what Christ is to us. You want to know God; well, then, study Christ and you will know all about him. "He that hath seen me hath seen the Father," said Jesus.—Arthur T. Pierson.

## CHIPS.

The descendants of Cromwell number several hundred.

People boast of ancestors to boost up a good-for-nothing carcass.

A wise man gets wisdom from fools just as bees get honey from weeds.

Beware of the flatterer, the oily-tongued are among the worst of people.

Just flatter. Never paint your picture true to life. No one wishes the truth told to him.

Some fellows think they are cute and quite cunning, but the wise one just steps in and takes the pile.

The economy consists of just spending your own money and keeping what you owe for the other fellow.

Good luck requires careful attention. The other article will drop on you without your looking for it.

How many true friends do we find in Washington, such as tell us our faults and hide them from others.

We have a colony of fellows in Washington who dress well, drink and eat, and never work. This is surely a capital city.

A coward is not the one who is most likely to keep out of trouble, he just gets his head brimful of it—a brave man avoids it.

We are never as cunning as we think we are, and when the other chap scoops our pile we drop to the fact that we have been a good sleeper.

The men and women with natures chuck full of foolishness turn themselves loose to show the public what a lot of sham they consist of.

The very worst thing you can have to live on is the pedigree some one has handed down to you. The safest pedigree is the one you make for yourself.

"Tis never too late to mend" as the cobbler murmured at 11:30 Saturday night, when he tackled a pair of shoes which the red necktie dude must have for Sunday.

The fellow who just throws away money should be looked on as a suspicious cuss. He is just as likely to be as reckless in the way he gets money as he is to throw it away.

Some politicians of this city could not get the cost of bean soup to bolster up their honesty. Yet they con their way to Kansas City and have their names printed in the papers.

Necessity is a thing that has caused lots of trouble in this world. If it was not for it, prisons would not be so full, and churches would have their congregations and hell would not have so many mourners to scorch.

Let faith postpone and trust awhile. It is no reason sons should take offence that the father giveth them not twice a year hire, as he doth to hired servants; better that God's heirs live upon hope than upon hire.—Samuel Rutherford.

The thing that is a puzzle to us, is that people would rather have some fellow tell him he was just the finest of the fine, when to tell the truth he was just the largest size fraud walking on Pennsylvania avenue. All take the "jolly" when the truth told to them would make a lot of cuss words come forth.

## CURIOUS FACTS.

A leaf is only a metamorphosed branch and the covering of seeds only a metamorphosed leaf.

A Boothbay, Me., fisherman, Ab Ak, claims to have the shortest name on record. There is said to be no abbreviation about it either.

By the simple trick of cutting wood across the grain, it is asserted that the match combine or trust is adding to its profits enormous sums yearly.

The sword blades forged at Toledo by the Saracens could be coiled up like a clock spring and would resume perfect straightness as soon as released.

The first skates were made out of the bones of animals. Sometimes children would sit on the jawbones of a horse or cow and propel themselves the ice by means of iron staves.

English insurance societies are badly divided over the question of war risks. Some refuse to have the volunteers at any price, while others think the men as safe in South Africa as at home catching influenza.

It is curious to know that wood tar is prepared just as it was in the fourth century B. C. A bank is chosen and a hole dug, into which the wood is placed, covered with turf. A fire is lighted underneath and the tar slowly drips into the barrels placed to receive it.

Among the Greeks and the Romans the goat was sacrificed to Bacchus because of its tendency to injure grape vines by eating the young tendrils and leaves. All the species of goats are natives of the old world. The Rocky Mountain goat, so called, of North America, really belongs to the antelope family.

The nature of the location and types of the nests of the Eastern North American birds show many curious features. The grebe nests in and near the water. The prairie hen, on the contrary, nests on the ground, being a terrestrial bird. Some birds, like the meadow lark, are partly arboreal, nesting near the ground in trees. The indigo bird is neither arboreal nor terrestrial, although it nests in the trees. The heron is a striking exception to the theory that habit decides the nesting site. Although a terrestrial bird it places its nest high in the trees, as does the wood duck, which is an aquatic bird. Our wood hawks inhabit trees, but the marsh hawks nest in bogs, as do the marsh gulls.

The danger of contact with sick pets is pointed out by the Ladies' Home Journal. Dogs and monkeys are subject to tuberculosis and are said to be capable of communicating the infection to human beings. A large number of canaries that die in captivity fall victims to the same disease. Parrots suffer from a malady peculiar to themselves. The bacillus that causes it is thought to originate pneumonia in man. Cats have been known to be the carriers of diphtheria, and possibly of scarlet fever and other infectious diseases. Great care should be taken during an epidemic to keep pet animals out of the reach of infection, or else away from the children, and at any time a bird or animal that seems ailing should be at once isolated.

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