

# The Automobile

## COLD ENGINE TROUBLE.

In cold weather, the best designed engines will often be difficult to start and will not give the best performance until the engine and the cooling water have become warm. In real cold weather many will require that "stunts" be resorted to before they will start at all.

The cause of this cold weather trouble is almost entirely due to the fact that gasoline will not vaporize at temperatures below about 60, even when in a partial vacuum, and that a mist of the gasoline will condense when it strikes a cold surface, as the cold manifold, so that it is difficult to get the fuel into the cylinders.

Actually, the carburetor will function properly, the gasoline spraying out of the nozzle and being converted to a mist, but then instead of this mist changing to a gas, it strikes the cold manifold and condenses on it, instead of going on and into the cylinders. Thus instead of a mixture of gasoline and air reaching the cylinders, air alone will reach them.

What can be done then to start the engine in cold weather, and what to keep it going?

For the first, the mixture must be made so rich in gasoline, that while much will condense, some will reach the cylinders and so give a mixture for an explosion. To keep the engine going at the slower speeds, heat must be supplied, either by heating the air before it passes through the carburetor, or by warming the manifold.

The mixture is made rich for starting in a number of ways. Some carburetors have an attachment by which the opening of the nozzles can be increased from the dash, while all either have a device for choking off the air (what is known as a choke valve) or for flooding the carburetor by holding down the float.

IN EXTREME COLD WEATHER. Generally using these priming devices will be all that is necessary to start the engine, but in extreme cold weather it will often be necessary to prime the engine by pouring a little raw gasoline into the cylinders through the compressor cocks or spark-plug holes.

Warming the gasoline used for this purpose by placing the can in which it is in boiling water for a while will help when it is found that even by priming in this way the engine does not start. Spinning the crank handle vigorously will also help. Unfortunately there is at present no satisfactory way to supply heat when starting the engine, but once the engine has started, the air which passes through the carburetor can be heated by placing a device, called a stove, over the exhaust pipe, so as to make the air first pass over this hot pipe. From the stove a flexible hose is run to the air intake of the carburetor. At the end of this hose a shutter is generally placed. In cold weather

this shutter should be closed, while it should be open in hot weather. Most people do not know the purpose of this shutter and run their car with it open in winter. The engine will run better and start easier if it is kept closed.

The manifold and carburetor are often heated by hot water packing them, using the hot water from the top of the engine water jackets for this purpose. Many cars have a valve placed in the piping of this water, so as to be able to prevent the circulation of the water through the jacket in summer. This valve is generally found near the water pump. It will be well for owners to be sure that this valve is open in winter. Usually it is open when the handle is parallel to the body of the valve.

USE NON-FREEZING LIQUID. As soon as there is danger of a non-freezing liquid should be put into the water in the radiator. The writer likes denatured alcohol for this purpose.

You can judge the amount of alcohol to use from the following tables:

Twenty-five per cent. alcohol, 75 water, freezes at zero.

Thirty per cent. alcohol, 70 water, freezes at five degrees below zero.

Forty per cent. alcohol, 60 water, freezes at twenty degrees below zero.

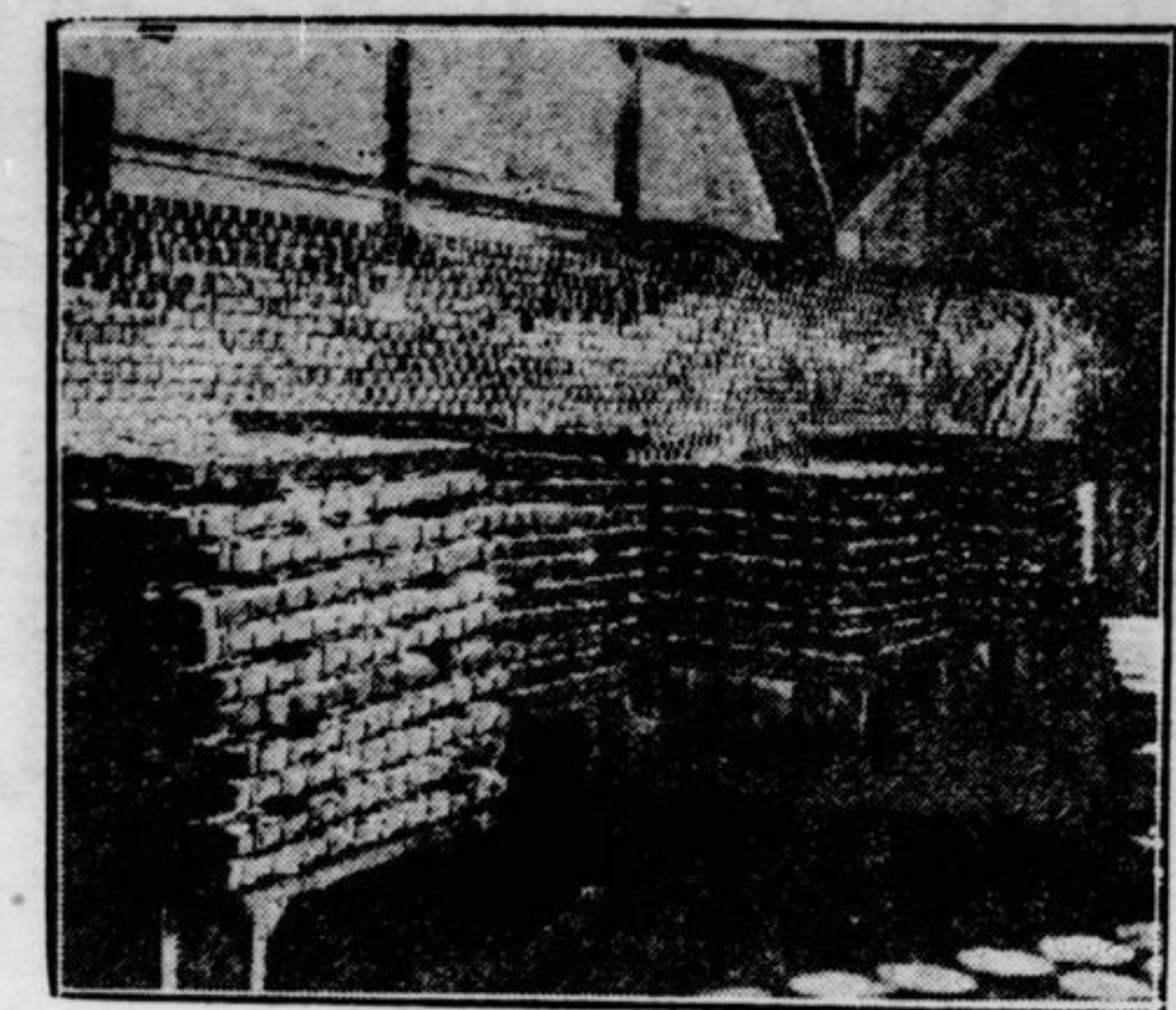
In time the alcohol will evaporate and so some additional liquid must be added from time to time. No rule can be given for this, as in a car the water of which has a tendency to boil, the alcohol will evaporate quicker than one in which the water is comparatively cool. It will also evaporate quicker in a car which is driven much than in one little driven.

It is often a good practice to cover the lower portion of the radiator, so as to prevent the passage of the air through it. If the water in the radiator tends to boil this covering should be removed.

Those who are using a heavy oil in their engine may do well to use a lighter oil in winter. The heavy oil by congealing will make the cranking of the engine difficult, and so make starting hard.

It is worth while watching the opening at the spark plug points in winter. Doing this will often prove a help in starting the engine. They must not be open too far.

In cold weather you use up the current in your storage battery much quicker than in summer, and it may be necessary to have it charged outside periodically, even though you did not find this to be the case during the warmer months. If the battery is nearly discharged, it will result in the engine being cranked so slowly that the suction will be weak and the length of time during which the mixture comes in contact with the cold manifold will be comparatively great, so that the starting will be made more difficult.



Once proud monsters of the surging Skenna, these leaping salmon have been housed in millions of cans to cater to the appetites of thousands of people in every part of the world.

## Toronto Students Become Industrious.

That the average student is more studious and better prepared for examinations earlier in the year than was the case a few years ago is the conclusion reached by the authorities of the University of Toronto from figures supplied by the University Library.

In the session 1922-23 an average of 270 students borrowed books from the library each day; in 1923-24 the average was 490; and for the first two months of the present session the figure is 540. This all is more surprising because, among students, it used to be a peculiar sort of tradition that no work was done in October and November. It may be that the students are becoming each year more serious-minded; or there may be more work to do; or the professors are applying each year more academic pressure on the students; or, with the passing of the frivolous post-war years, work bulks more largely in the thought of youth.

Whatever the cause, University students are certainly working harder than they did, or said they did, in years gone by. The significant figures just announced apply only to the main library of the Provincial University; in each faculty, college and department there are special libraries the volumes in which are always in great demand.



## Bravery.

If you are found singing a summer-sweet song  
In the gloom of a wintry day;  
If your eyes find the gold in the cloud-lands which throng  
The dusk of some twilight hour gay;  
The pluck of your song and your courage  
And cheer  
Will help all the others who're travelling near!

It's easy to laugh when there's many a jest.  
To smile when there's gladness around!  
It's easy to labor with energy—zeal,  
Where all things successful abound!  
But when the garb's shabby, yet regal  
And feet step out bravely, though weary and torn;  
When, hoarse with heart-sorrow, he sings what he can;  
We take off our hats to that man!  
—Ian Drag.

THE latest luxury train to run on British railways is the new Flying Scotsman; the engine cost \$37,500 and the coaches represent an outlay of \$175,000.

## An Epic of the Sea.

A stirring story of the sea is that of the schooner Kathleen Annie, which was wrecked in the Orkneys a few weeks ago. The hero of the occasion is Commander Frank Worsley, D.S.O., who is already known to fame as one of the gallant men of Shackleton's last expedition.

The Kathleen Annie was overwhelmed in a gale off the North of Scotland and went ashore. She was breaking up fast and the crew stood in the grave peril. In the height of the gale, Commander Worsley dropped from the bowsprit with a rope and made for shore. He reached it after a tremendous struggle and thus enabled his crew to come to safety by means of the rope.

## Fiddling Work.

A certain young New Zealander, six or seven years old, is very inquisitive. One day he was asking how things came to be here: "Mother, who made me?" The mother replied "God."

"Who made the horses and cows?" "God."

"And who made the elephants?" "Why, God, of course!"

A long pause, then: "Well, did God make flies?"

"Why, yes, my son!"

"Humph!" said the boy. "Fiddling work, fies!"

The driver is often the most dangerous part of an automobile.

# THE HOME GARDEN

## The Pleasure and Profit it Gives.

What constitutes a profitable garden? The monetary value of the crops grown is no doubt the first consideration with many; others garden largely for the pleasure derived from growing things. Where the two viewpoints are satisfactorily blended, pleasure and profit are combined. Much of the real value of the home garden consists in the prime quality vegetables we are enabled to have in a fresh condition. For instance, sweet corn two days old, as we buy it in the market, bears little resemblance to the fresh ears when used soon after pulling. To a lesser extent the same rule holds good with most other vegetables and with berries.

The love of flowers is increasing tremendously. So the perfect and profitable home garden must include both flowers and vegetables. The blossoms and foliage may not represent hard cash, but they give its equivalent in our enjoyment of their beauty and fragrance.

The best seeds are cheap, and if they are handled with reasonable care, a ten-cent packet of some choice vegetable may return us many dollars' worth of perfect produce.

We have a letter before us wherein our correspondent tells how from \$5.75 spent for seed almost \$100 worth of vegetables and flowers and plants, in addition to supplying his own table.

With a few exceptions the season just ended has not dealt so hardly with us after all, despite the unfavorable weather of the spring. Blankets instead of having to thin out the bush beans, where there were plants to spare they were carefully lifted with the trowel and used to fill up the blanks. The same procedure was followed with sweet corn and several other vegetables. Showers were so prevalent that in practically every instance the seedlings so moved made good.

In the flower borders things looked small-seeded species suffering most. Many of these seeds were flooded out, an dit was difficult to make the blanks good. However, this was ultimately accomplished, and by early September the garden had regained its old glorious appearance. This was not accomplished, of course, without some extra labor and care.

To grow successful crops of vegetables the fertility of the soil must be carefully attended to. Manuring and liming, lime being applied at least every third year, also the deep stirring of the soil when digging or plowing, all tend to keep it in condition.

Good viable seed, true to type, should be purchased; cheap, unreliable seed is dear at any price. Cultivation when the plants come through the soil, and regularly thereafter until the crops are ready for harvesting, is of the greatest importance.

Hoeling is not undertaken simply to kill weeds—of course weeds must

never be allowed to get ahead of us—but the great value of hoeing lies in creating a dust mulch over the surface which stops evaporation of the moisture contained in the soil.

A poor soil will not support a good garden. Plant food that is quickly available, also humus, must be present. The best fertilizer for all gardens is farmyard manure. It contains all the factors required in nourishing the plants. It also helps considerably to loosen up a clay or heavy soil, and in a sandy soil assists to keep the water from draining away too soon.

Then manure increases the bacterial action which assists in making available the plant-nutrient elements. In addition to nitrogen it also contains potash and phosphate.

If we apply manure in the fall it may be turned under in a fresh condition, but when applied in spring it should be well rotted and crumbly. It should be for a few weeks in a well-packed pile, it will rapidly decay and will lose little of its virtues through leaching.

Poultry manure is also an excellent fertilizer, containing a great percentage of quickly available nitrogen. It must not, however, be used indiscriminately or it may do more harm than good. Stable or farmyard manure may be spread over the ground three to six inches deep, but poultry manure must never be over one inch deep; in fact, it need not even cover the ground completely, and should always be half straw.

Poultry manure should be carefully stored as its available nutrients leach out quickly.

Those of us who are unable to get a full supply of manure should fall back upon fallen leaves. They contain considerable plant food, considered by many to be of equal value to animal manures. As in turning under rye, the acidity which leaves introduce to the soil should be neutralized with lime.

One method of preparing leaves is to pack them firmly in a pit three to four feet deep, five feet wide and fourteen feet long. Several such pits are kept going all the time.

Nine to twelve inches of leaves are firmly packed and well watered, and on top of them air-dried lime is spread in sufficient quantity to whiten the surface. Then put in another layer of leaves, more water, another coating of lime, and so on, until the pit is full.

If chicken manure is available a thin layer may be incorporated with each layer of leaves, but not in direct contact with the lime.

Keep the leaves well stamped down, and do not fail to water them thoroughly if they are dry. If the pile is forked over and thoroughly mixed once or twice during the winter, the material should be so decomposed by spring as to be ready as a substitute for manure.

Geniuses have often come from large families; Balzac was the youngest of a long line. Napoleon was an eighth child, Benjamin Franklin was the youngest of seventeen, Wagner and Mozart were both seventh children.

## How He Knew.

Peter was just beginning to learn about birds and was very much interested in the subject. His uncle was teaching him to recognize each bird by its song. One day he saw a humming-bird and came running into the house, exclaiming:

"Oh, mother, I saw a buzzard out in our yard."

"Oh, I think not a buzzard," replied his mother, "it must be another kind of bird."

"It is a buzzard," was the confident reply, "cause I heard it buzz."

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How are you and your hubby hitting it off?

"I'm hitting him for money all the time and he hasn't hit me yet."

The well known McGill University at Montreal is to have a fine pile of bells, shipment of which was recently made by the Meneeley Bell Co. These bells are to be installed in the new Roddick Memorial tower on the university's grounds which is being built and equipped by Lady Roddick in memory of her husband, the late Sir Thomas G. Roddick, one time Dean of the Faculty of Medicine at McGill. It is expected that the installation of the bells will be completed in time for their inauguration Christmas Day, and provision has been made by Lady Roddick to have the bells rung every day in the year without a lapse for Sundays or holidays, thus providing a perpetual memorial.

Tokio ranks fifth among the cities of the world, with a population of 1,917,308, according to a census taken in October of this year, says a Tokio despatch.

Although the city has gained 389,819 residents since the exodus following the earthquake and fires of a year ago, the population still is 260,000 short of the pre-quake census.

The latest census shows that there are 18,500 persons, representing 7,114 families, who are living in houseboats on the numerous canals that intersect the city.

There are many tests of human capacity, from Mr. Edison's questionaire to the Harvard entrance examinations, but few are so simple as the test that a hard-headed, self-made "Down East" business man applies to boys who ask him for work. "Get a jackknife?" If the boy says "Yes," there may be further inquiries; if he says "No," the interview ends. "Don't want you. Boy that ain't got gumption enough to own a knife would be any use to me."

World's Oldest Banks. The oldest existing bank in the world is said to be the Bank of Barcelona, in Spain, which was founded in 1401. England's first bank was opened in 1603 by Francis Child, a goldsmith. A number of other goldsmiths immediately followed suit. The Mint in the Tower of London had been the depository for the cash of merchants until Charles the First asked the money as a loan. Then the traders began to deposit their cash with the goldsmiths in Lombard Street.

Glass and Electricity. Molten glass conducts electricity well, although cold glass is an excellent insulator.

# Fourth Ontario Older Boys' Parliament.

The Older Boys' Parliament, which meets in its fourth annual session in the Legislative Assembly Chambers, Toronto, Dec. 26th, to 31st, inclusive, is in no sense a mock parliament.

It is first of all the legislative body of all the groups of boys in the evangelical churches of the province, following the Canadian Standard Fellowship Training Program. The one hundred members elected from the various districts are all older boys, and they all represent local Tuxis and Trail Ranger groups, and are responsible to them. They meet to discuss matters of general policy, improvements in the program of work, and plans for the financing of work, and provincial work, and to carry back information and inspiration to their district and local groups.

Incidentally the Parliament is a splendid training in practical citizenship, acquainting these older boys with the actual workings of democracy on its legislative and executive side. The aim of the Parliament is not a holiday nor a display, but a means of allowing for expression of older-boy opinion, of crystallizing convictions, and of evolving plans to improve and extend their work, and thus to promote Christian manhood in the entire province.

The platforms for the three candidates for the premiership reveal good practical sense, a fine constructive ability, and the highest type of idealism and capacity for service. The (Christian) people of the province will do well to watch the proceedings of this somewhat lengthened session with attention, to be assured that in the youth of the province is our hope. Let us all give these older boys our sympathy and support in their splendid undertaking of sharing responsibility with their leaders for their own boys' work throughout the province. —L. S. A.

## Natural Resources Bulletin.

The Natural Resources Intelligence Service of the Dept. of the Interior at Ottawa says:—

Fishing through the ice in winter is one of the activities of farmers and settlers in many parts of Canada, especially in the neighborhood of lakes. This industry is one of considerable importance in Western Canada, particularly among the northerly lakes. The lack of railways or highways and distance from markets precludes the taking of the fish in the open season, as there are no means of packing the fresh fish for market.

With winter, however, fishing is carried on very extensively, and large numbers of teams are engaged in delivering the frozen fish to the nearest railway point.

The most important fish taken is the whitefish, although pickerel, lake trout and other species are taken in considerable numbers. When taken, the fish are allowed to freeze solid, and are brought in piled up like firewood on sleighs.

The cold waters of the northern lakes produce fish of exceptional quality, the flesh not becoming soft, as is often the case with that of fish taken in the warm waters of the more southerly lakes and streams.

A large trade has been built up with the cities of Canada, as also in the middle and eastern States, and good prices are obtained for the winter catch of fish.

In Ontario and Quebec, however, the winter fishing in the smaller lakes and rivers is done for the purpose of securing a domestic food supply, and while there is no means of knowing to what extent this is carried on, there is no doubt whatever that considerable quantities are taken. In this way the fisheries provide a valuable source of food and a change in the diet of many who are not always within reach of a fresh meat supply.

Have a Definite Aim. A cabbage will grow to its full size in a few months. The vegetable marrow and the prize mushroom are both remarkable for their celerity at growing. The oak is slow. It never makes a spurt. It just keeps on growing. But what a splendid job it makes of it!

This is an age of haste. We want everything done quickly whether it is well done or not. But as the old hymn says: "To patient faith the prize is sure."

The great poet does not "dash off" his poems like making out a laundry list. He sometimes waits for months for the right word. When it is found it is the Right Word.

The greatest discoveries of science have not been made in a night, nor in a thousand and one nights. The great secrets have yielded to patient researches often spread over half a lifetime.

Life is Not Haste. It is plod, plod, plod—but with definite aims.

Tests of Ability. There are many tests of human capacity, from Mr. Edison's questionaire to the Harvard entrance examinations, but few are so simple as the test that a hard-headed, self-made "Down East" business man applies to boys who ask him for work. "Get a jackknife?" If the boy says "Yes," there may be further inquiries; if he says "No," the interview ends. "Don't want you. Boy that ain't got gumption enough to own a knife would be any use to me."

# Northern Manitoba Mineral Belt

A few years ago the Northern Manitoba mineral belt, in its initial stages of development, attracted considerable notice, and although there has been no public notice, this is not to be taken as indicating a failure of material. Such quietude is the variable experience of camps between the initial boom and the first productive stages, and in addition to this progress in the sector has been in less remote and cryptic areas of the Dominion. There has been a certain amount of steady progress maintained, as indicated in the report, Dr. R. C. Wallace, formerly Commissioner of Northern Manitoba, on probably the foremost authority on mineral possibilities of this area.

The most important progress in 1922 was made at Herb Lake, where the Blago interests are pursuing a programme of underground development with very satisfactory results. Further work at Herb Lake, both in prospecting and in development, is being carried on, as further operations in diamond drilling and intensive prospecting by the Blago interests with some other work in the copper belt, constituted the major operations of the 1922 season.

Although on the whole the work done in 1922 was somewhat limited in several areas it has significance for mineral interests, who are keeping in close touch with developments in this field.

Copper, Gold and Silver-Led. The operations of the district must be grouped under three headings: Copper, gold, and silver-lead. In general way this represents also the order of mineralization from west to east in the belt. In brief, both at Herb Lake and Elbow Lake the outlook is considered decidedly encouraging for the development of gold properties. The underground results of the Blago at Herb Lake, and the surface discoveries at Elbow Lake, are attracting the attention of responsible mining companies to both districts. The world copper situation has affected progress in the copper area, but there are good indications that underground prospecting will continue, and to judge from surface showings the chance for ore bodies being discovered in that area are good. Work is proceeding rapidly to determine whether the galena-silver occurrence in the sediments on the Little Herby River are sufficiently extensive to grade as an ore body. Much work will yet be required before the extent of the mineralization in a heavily covered country can be fully estimated.

There is a general satisfaction expressed over the ultimate prospects of Northern Manitoba as a mineral producer, and the opinion is fairly representative among experts that Manitoba will come to rank better with the other mineral-producing provinces of Canada. Development has been necessary, early slow, hampered by caution of investment in an unproven field coupled with its remoteness and difficulty of access. It is not expected that future development will be unduly rapid, but a certain amount of steady development will be maintained. The district has been receiving considerable attention from capitalists, and this, taken in conjunction with the influx to the area, at present evidenced, augurs faith in the existence of commercial minerals in Northern Manitoba and is an assurance of further development.

Mystery Bells. A legend of this kind is told of a country church near Freetown, England, the very name which nobody knows.

In Holland the story of the city of Heen is told every Christmas. This wonderful place was famous for its magnificence and beauty, and despite its wickedness and shameless dissipation one day the whole city was swallowed up by the sea.

The submerged bells of Heenwich, now covered by the sea, are said to join the ghostly chorus of the drowned.

Amongst the bells which will ring out to greet the coming Yuletide will be many ghostly peals, heard on no other night in the year; for tradition says that the bells of all buried choruses join the chorus every Christmas Eve.

There are the bells of Bategh, once a prosperous village in Nottinghamshire, England, now only a country village, all sign of habitation was swallowed up many years ago by an earthquake. It is said that every Christmas Eve the bells of the old church are heard to ring again.

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