The Automobile

AUTO EPENDS UPON OIL FOR MEANS OF LIFE.

To keep fairly cool under all circumstances and yet at the same time to be well lubricated is the demand made of the automobile by its owner. These two qualities appear to be necessary to keep the car going.

Three things are important when it comes to starting an engine in an auto. These are gas in the cylinder, compression and a spark. To keep it going there must be a cooling system and lubrication. Cooling is necessary to keep the cylinder walls at a temperature low enough so that the oil required can perform its lubricating function. For it is essential to keep a film of oil between the cylinder wall and the piston which travels up and down inside of it.

Without such lubrication the friction of the parts sliding over each other would be so great that the engine could not develop sufficient power to drive itself, to say nothing of the automobile with passengers or freight in it. To undertake to run an engine without lubrication is to put it out of business for all time.

To illustrate the importance of lubrication push your shoes heavily forward on an asphalt sidewalk. The leather soles become hot and the shoes will quickly show signs of wear. But if in this process you step on a banana skin at once the feet begin to travel rapidly. The banana skin acts as a lubricant. It is equivalent to placing a film of non-friction material between the shoes and the surface of the hard sidewalk.

FRICTION TO BE AVOIDED.

In the auto engine there are numerous places that have sliding contacts and consequently these points require lubrication. They include the cylinder walls, pistons, piston rings, bearings of crank shaft and crank pins, little bearings in the piston to support the piston pin, bearing on which the cam shaft revolves, the cams and the valve lifters which they operate, the guides for valve lifters, the gears and chains which operate cam shaft, possibly the pump shaft, the shaft of ignition timing and the generator. All these parts are usually contained inside of the engine and are lubricated from the common supply of oil that is placed in the crank case of the engine.

There are a number of different types of engine lubricating systems. In one of these the oil is forced under pressure to practically every sliding part. Perhaps the most common system is that in which the oil is carried in a compartment called a sump or reservoir in the bottom of the crank case. On the top or side of the crank case provision is made for filling this sump, and there is usually a float or some other device to indicate how much oil is on hand at any time. This crank case may carry a gallon or more of oil. As the indicator shows that the oil supply is getting low, fresh oil should be put in, or the entire supply should be renewed every 500 miles. In this system there is usually a pan placed directly over the pump in which there are small depressions directly under each crank pin to which the lower end of the connecting rod is joined. When the engine is going a small pump takes oil from the pump and forces it to this pan, where it runs into the depressions. As the connecting rod comes around it dips into the oil and throws it up into the cylinder, lubricating the cylinder wall below the piston.

When too much oil is picked up or when the pistons and rings do not fit the cylinder properly, the oil is likely to work past the piston in large quantities, get into the combustion chambers, be burned and exhausted in the form of smoke. This is one of the causes of carbon deposit in the cylinder, which in turn causes knocking.

OIL SPREAD TO ALL PARTS.

In addition to lubricating the cylinder wall this oil that is fed lubricates practically all other working parts of the engine. For instance, as the crank shaft revolves at high speed and the ends of the connecting rods dip into the oil, the oil is splashed and broken up into a very fine spray or fog. This is circulated by air inside the engine and is deposited on every part contained in it. Thus as practically every working part of the motor is contained in the crank case or in the compartments, such as the cylinder and timing gear case which opens directly into the crank case, the lubrication of the entire engines is cared for by this system. The possible exceptions are the fan bearings and water pump glands.

The pump which circulates the oil delivers much more oil than is used. This is done so that an ample supply may be assured under all circumstances. In order that the surplus oil will not go to waste the oil pan under the connecting rods has openings. These are placed at such a height that when a sufficient amount of oil is present any surplus will automatically drain back into the oil reservoir. It is a good idea to inspect the oil indicator each time before driving the car to be sure that there is an adequate supply.

When this oil is used over and over again it becomes filled with particles of metal. Also while the engine is going the vaporized gasoline in the combustion chamber will be forced past the piston into the crank case when there is pressure in the combustion chamber. This vapor condenses into gasoline and drops down into the oil sump, thinning the oil. This situation makes it desirable to change the oil about every 500 miles.

Keep sufficient oil in the engine, clean the crank case out and the strainer at the oil pump. There should be practically no trouble with the modern engine lubricating system. And the motorist will have at least one important detail in automobile ownership satisfactorily cared for.

Strangers.

My good man has no gypsy blood—
  He's always lived in town.
He wants his four walls and a roof
  When night comes thickly down.

He could not sleep beneath the stars,
  Nor rest beneath a hedge;
He would not like to race the wind
  Along the far hill's edge.

But I am of a different mind—
  Why did he mate with me
Who loves the wind, the rain, the sun,
  To wander and be free?

We live together year by year;
  He thinks he knows me well—
That I am fond of home and him—
  Suppose that I should tell!

He thinks I'm quite respectable—
  Suppose he knew that I
Have longed to lay me down to sleep
  With no roof but the sky;

That I have grown to hate his house,
  So tidy and so prim;
For I, who have a gypsy heart,
  What kin am I to him?

Some morning he will wake alone;
  And all his life he'll say,
"She had my love, she had my house,
  Why should she go away?"

—Abigail Cresson.

Poor Weak Things.

Miss Brown—"Men are but poor weak things in this day, Mrs. Simpkins—poor weak things!"

Mrs. Simpkins—"Ain't it the truth, Miss Brown. There's my husband don't go to work till five o'clock in the morning, gits off at five in the afternoon, and—would you believe it—goes to sleep talking to you before nine at night."

The Robbin' Robin.

A robin is robbin' our cherry tree;
A robin is robbin' us merrily.
O ribin, stop, robin, stop robin' our tree!
Oh, fly away, robin, or some one will see!

A robin is robbin' our trees. With a "tweet!"
As he pecks at a cherry he tells us it's sweet.
O robin, stop robbin'! You know that it's wrong!
"What, robin'? says robin. "I pay with a song!"

—Mary Carolyn Davies in Youth's Companion.

This clock, made and exhibited by Anthony Roshmanov, will tell the time in 500 cities throughout the world.

Summer.

The months we used to read of
  Have come to us again,
With sunniness and sunniness,
  And rare delights of rain;
The lark is up, and says aloud,
East and west I see no cloud.

The lanes are full of roses,
  The fields are grassy deep;
The leafiness and floweriness
  Make one abundant heap;
The balmy, blossom-breathing airs
Smell of future plums and pears.

The sunshine at our waking
  Is still found smiling by;
With beamingness and earnestness,
  Like some beloved eye;
And all the day it seems to take
Delight in being wide awake.

—Leigh Hunt.

Pocket Sundials.

It was not uncommon in the days of Queen Elizabeth for men to carry pocket sundials for the purpose of time-telling.

Dials of all kinds were common then, though previous to that time they had been little used in this country. One of the oldest, erected about the time of Edward the Confessor, is still to be seen over the south door of Kirkdale Church, in Yorkshire. It bears the inscription: "This is the sun's marker at every hour, and Hayward made me and Brand the priest."

The fashion for dials began to spread until the whole countryside, particularly in the North and in Scotland, was dotted with them. We see them to-day in interesting forms at St. Andrews, Melville House, Holyrood Castle, and many other places which are popular resorts of sightseers.

The legends engraved on some of these old dials are very quaint. One, humble in its opinion of itself and mankind, announces: "Shadows we are, like shadows we depart."

In China and Japan small dials made of boxwood are still carried and consulted by their owners.

Use Roofs as Stables.

Animals are kept on the roofs of the houses in Lima, Peru, and it frequently happens that a cow passes her whole life on a roof, being taken there as a calf and brought down finally as fresh beef.

Sunny Days in London Bring Crime Decrease

The fact that the sun has been making quite a show in England is held as the true cause of the decrease in crime lately. Since the opening of the last sessions at the Old Bailey there have been only twenty-five cases (they have been open three weeks), against more than a hundred in the same time at previous sessions.

A prominent London specialist is convinced that the lack of sunshine has a marked effect on certain phases of crime, and that sun-starved persons are more prone to morbidity than peoples of sunnier climes. Sun-starvation, says this medical nan, produces nerve starvation and lowers the national vitality. Suicides increase in certain months probably because dull, dreary days produce depression.

It may be possible, says this specialist, that a combination of good housing and sufficient sun will one day banish serious crime from the world. He does not, however, pretend to have any plan for the forcing of the sun to shine when it won't, and it generally won't in England.

That's What She Meant.

Wifie—"Don't you forget it, your wife's one woman who knows her proper sphere!"

Hubby—"The earth, I suppose, you mean?"

A Project in India.

A great irrigation project involving the storage of 80,000,000,000 cubic feet of water has been planned in Southern India. The water will be taken from the Cauvery river and distributed to 300,000 acres.

Getting rattled easily is often an indication that there is a screw loose somewhere.

While visiting St. John's School, Ealing, London, the Duke of Connaught presented a certificate of recommendation to P. C. Blake, an old school boy.

OPEN LETTERS TO A FARMER

By Rev. M. V. Kelly, C.S.B.

(Continued from last week)

IX.

Vanity of Vanities.

Before settling the question of your son's or daughter's going on with a high school or college course, it might be well to hear more on the subject from those best fitted to pronounce. Are you aware that, while people in every quarter are so loud in urging every one to get all the schooling possible, while the ambition, or vanity, to continue children at school is rampant, while attendance at all kinds of institutions is growing year by year, the leading men in every walk of life, including the heads of those very institutions, do not hesitate to say that the tendency is fraught with evil, is a menace to the future welfare of the country?

Let us try to see what this means. Can there be any objection to every one receiving the best education possible? One writer has said: "My education was very much interfered with by my schooling." The fundamental mistake we make is in confounding the two, in assuming that education consists in schools, that schools alone give education. Many spend their entire youth and manhood in school and colleges and are not educated. Many of our best-educated citizens were limited to a few years in a primary school. The pioneers of this country—the men and women of a few generations ago—had, as a rule, very little schooling; many of them could neither read nor write. But they had capability, courage and character; they faced all kinds of difficulties and overcame them. They knew their duty to God and fellow-man and fulfilled it; they were industrious, honest, generous and hospitable. They had that sense of honor, of fairness, of kindliness to others, which are the unmistakable marks of true gentility. They brought up families which have made Canada what it is to-day. This country owes everything to their memory. Will anyone say they were not educated? Do you expect your boy to acquire all these qualities by learning a certain amount of algebra, geometry, history and grammar for a few years in a high school or college? If there were anywhere a college or university undertaking to produce men or women of the calibre of our fore-fathers who felled the forests and tilled the soil, its reputation would be world-wide. The sons of the most ambitious from every land would crowd its halls. And the amusing thing is that we all know, all admit, that no such results are to be expected from those very institutions, which claim to have the highest things in education and to the support of which we are called upon to contribute millions of dollars annually.

Very often our attention is drawn to some man of eminence in a learned profession or in public life; we are told he achieved this wonderful success, although as a boy he had chores to do for hours before and after school—perhaps walked two concessions every evening to feed cattle—and that his getting to college at all depended on the money he could earn during harvests; Now the great mistake in telling this story is in using the word "although." We forget that his success was achieved because of those chores and laborious summer vacations; in these was his real education.

Teachers of all grades and qualifications meet in convention once or twice a year, and seem to consider it dreadfully important whether the youth committed to their care have a little less or little more of language-study, a little less or a little more of science, a iittle more or a little less of drawing, dancing, military drill or football. They certainly must know that immensely greater service than all these would they render young people, if they could give them unswerving habits of industry, if they could make them workers for life, in season and out of season. Unfortunately, we all know too well how little of that the schools of the country are themselves able to produce.

The following is from a country pastor, in whose parish were a number of boys adopted from institutions. The schooling given in these institutions was much superior to what was possible for a farmer's son of the same age to have acquired. "Send one of these nicely accomplished boys of fourteen or fifteen for the cows, and he will return to tell you they are not in that particular field or pasture; send your farm-bred boy of seven or eight, and he will not return until he has found the cows." Here is a very apt exemplification of a school's incapacity to endow its pupils with that very most important element in education, the sense of responsibility it inspires.

The School of Schools.

The more we think over this matter, the more we become convinced that the greater part of all that can be called true education must be acquired in the home, not in the school, that parents are essentially the teachers of youth, not the men and women who drill in grammar, history and arithmetic. These are valuable assistants in completing the less serious part of the work, but they are only assistants; so much is this the case that unless parents lead, their efforts give very meagre results. It follows, therefore, that the more time parents have to spend with their children, and the greater opportunity to look after their daily work, the more thorough and wholesome the education, and the more satisfactory the results all along the line. As a consequence, wherever conditions prevent children working alongside their parents, there is an inevitable deficiency in their education, no matter how competent be the schoolmaster or how efficient the school.

Many a father is heard to say: "I shall see that all my children have a good education; they should get along then." The ideal is magnificent; he will certainly have fully acquitted himself of his duty; it is all they need. The misfortune is that what he proceeds to give them is often a very questionable education. He forgets that to assure them real education he must be the principal teacher. Children are sent to school or college and deprived of the guidance and supervision of their parents. For years the father and mother have nothing to do with the formation that should go on day by day in the lives of their children. Very often these same parents are surprised to find that the boy for whom they tried to do so much has little to show for it, gives few signs of success in any walk of life, while the boy who worked side by side with them at home is everything they could desire.

Let us understand thoroughly that the vigilance and supervision of their parents in the evening, when the tasks set at school have to be attended to, is a small element in training. The great factor in education is the industrial home in which the business of life is managed by parents, the children working under their direction. The farm is the perfect example of this. It is the school of schools, with which no other can compare. If you are thinking of moving into the city, are you sure of finding anything like it there? When you go to work or business every day, will your boys and girls be with you? Where will they be? How much control will you have over their daily lives? I speak not of their conduct; let us suppose they will be safe, if you wish, but during those hours, will you be their educator at all? What will you have to do with their industrial training, with their wills their habits, their language, their thoughts during work hours? While they are still young, not only will they be away from you the entire day, but they will also be without work to do; when they are older and at work, their employment will be altogether independent of your supervision and guidance. In other words, the education of city children is one from which the parents' influence is largely excluded.

(To be continued).

Nature's Sunshade.

During days of prolonged sunshine and tropical heat, it is not sufficiently realized that there is nothing specially healthy about a "tanned" skin. The practice of exposing one's face to direct sunlight in order to get sunburnt is both absurd and dangerous.

Ultra-violet rays destroy the animal tissues of the skin, but Nature's antidote is the brown pigment underneath which develops and, acting as a filter, shuts out the harmful influence.

The most obvious precaution is a big sun hat, and if the hint furnished by Nature be acted upon, the color will be light brown.

Religious faith, cleanliness and honesty—these three to be sufficient must be excessive.

IN RABBITBORO