

# The AUTOMOBILE

## IN HOT WEATHER YOUR TIRES NEED WATCHING.

There are many hot weather ailments to which the automobile is susceptible. Certain forms of tire trouble sometimes come in the good old summertime which might not occur in cooler weather. If the tires are inflated to too high a pressure the car rides as though equipped with solid rubber, rather than pneumatic tires. In addition to the discomfort to passengers, there is excessive rattling of all parts of the car, the heavy vibration loosening nuts and bolts and tending to shake the entire car to pieces. When rounding a curve, if the road is somewhat rough, the car has a strong tendency toward going sideways, like a crab, and there is additional danger of skidding on smooth, wet pavements.

A lot of this sort of trouble can be avoided by not keeping the tire pressure quite as high in hot weather as in cold. Considerable heat is generated by rolling a tire over the ground. This heat expands the air in the tire and increases the pressure. In the winter-time this heat is absorbed to a large extent by the cold atmosphere and the cold, wet pavements; therefore the pressure does not vary so much. In the summer the roads are very hot, the atmospheric temperature is high and the heat, generated by friction, is not carried off to any appreciable extent.

On a recent trip I noticed the car was riding harder than usual. I tested the tires and found they were above normal in pressure. After letting out some of the air the car rode easier.

### Difference of Twelve Pounds.

To find out just what the difference in pressure would be I took the pressure of each tire the next morning before leaving the garage. After rolling about forty miles at an average speed of twenty-five miles an hour I took the pressure again. It had increased about twelve pounds in each tire.

Manufacturers of fabric tires insist that their tires be kept inflated in accordance with their specifications. If this be done, however, in hot weather especially, the tires have very little resiliency; and discomfort and sometimes even danger, due to the tendency of the car to walk off the road, is the result. This, no doubt, in a large measure, accounts for the popularity of the cord tires, in which considerably less pressure may be maintained without damage to the tire.

Of course it is generally known that more fabric tires are damaged by underinflation than by overinflation, because the former breaks down the side walls of the tire through running flat, while overinflation usually causes

a blow-out only when the tire is weak at some point. This fact must be taken into consideration, and for this reason care must be exercised in whatever allowance is made in tire pressure on account of the summer heat. It would be a good practice, however, in hot weather to leave the garage with the tire pressure about ten pounds less than that usually specified as being normally correct.

### Try It Out for Yourself.

It would also be a good practice for the driver to test out his tires after running at a good clip on a hot day to find out for himself just how his particular tires react to the heat. A little of such experimenting will soon indicate to him just about what allowance he should make for hot weather in the inflation of his own tires.

The question of tire inflation may be a question of sacrificing a little on the life of a tire in order to secure a greater amount of comfort in riding. Practically every owner of a car would be unwilling to use a substitute for gasoline, even though the substitute were cheaper or even though it gave a greater number of miles per gallon, if the result were going to be lack of smoothness in the running of the engine. And while it cannot be taken for granted that a little less air in the tires makes them wear out much faster, if at all, even if this result were sure to obtain, the added comfort secured would doubtless be worth more to the owner of the car than whatever little extra cost there might be involved.

For all-around comfort it is logical to conclude that a slight decrease in pressure in hot weather is desirable. Certainly this procedure cannot damage a tire to any considerable extent, because after a few miles of driving in warm weather the pressure will equal that recommended by the most exacting manufacturer of tires, and any overheating due to this cause would be a matter of very short duration.

### Use Common Sense.

In fact, I have known of some tire salesmen who are quite insistent upon a certain pressure being maintained in the tires they sell, and yet who make it their invariable practice to deflate their tires about ten pounds in hot weather. These salesmen certainly want the greatest possible tire mileage. It is safe to follow their conception of a combination of mileage, safety and comfort. This is simply using common sense methods in regard to tires in the good old summertime.

### How it Worked Out.

Mrs. Brown was tired of the borrowing propensities of her neighbor, Mrs. Smith. First it was some household utensil she wanted, then some small article of grocery. The other day a knock came to Mrs. Brown's door. It was Mrs. Smith's little girl. "Please mother wants to know," she said, "if you will lend her some pepper and the big flat iron?" Mrs. Brown was determined to stop her neighbor's borrowing. "Tell your mother I've got other fish to fry," she snapped, and the little girl went away. It was not long before she came back. "Please, mother wants to know if you'll lend her some of the fried fish."

### In Kind.

In many of the rural districts where money does not circulate with great rapidity, services are paid for in kind. Farmers, for example, will give potatoes, eggs, etc., in payment for debts. A young surgeon, who had occasion to operate in one of these districts, hopefully approached the husband of the patient and asked for his fee, which amounted to \$100. "Doc," said the old man, "I haven't much ready cash on hand. Suppose you let me pay you in kind." "Well, I guess that will be all right," replied the young doctor, cheerfully. "What do you deal in?" "Horse-radish, doc," answered the old man.

## World's Most Wondrous Canal

When the Panama Canal was opened about seven years ago, there seemed little likelihood that it would ever be inadequate for the world's commerce, but experts are agreed now that it will have to be widened or supplemented by another canal.

The weight of opinion is in favor of cutting another waterway, not at Panama, but along the Nicaraguan route—from Greytown, in the Atlantic, to San Juan del Sur, in the Pacific, via Lake Nicaragua. The total length of the new canal would be one hundred and eighty-three miles.

Begun in 1882, and opened in 1914, the Panama Canal consists of about twelve miles of locks and canals. In the sea-level sections the width is 500 ft., and in the other portions it ranges at bottom from 300 ft. to 1,000 ft.

To cut through from ocean to ocean necessitated the removal of 252,133,000 cubic yards of soil, and the continuous working of one hundred and one steam navies, each of which could lift ten tons of material at a time.

Huge locks had to be constructed. In all, there are twelve, arranged in pairs, with forty-six gates, containing 60,000 tons of steel. The concrete used in the locks totalled 4,500,000 cubic yards.

One of the most difficult parts of the work was the Culebra Cut, a great gash, about twelve miles in length, through the Culebra hills. When the cutting was made at the ordinary slope, there were such enormous landslides that the French engineers abandoned the job in despair.

The Americans, on taking it up, cut a deeper and wider channel, but the continued landslides and fleets of enormous trains, each capable of removing 100,000 tons of material a day, could

not keep pace with them. Indeed, when the shovels removed more soil than had slipped down, waters were no better, because material began to rise from the bottom of the cutting just as if it were being pushed up by hydraulic power.

In the end the difficulty was overcome, but only temporarily. Since the canal has been opened the cut has filled up frequently, the soil on one occasion rising to a height of sixteen feet above the water level.

The greatest single work in the canal is the Gatun Dam, which is an enormous barrier one and a half miles in length, half a mile wide at the bottom, and one hundred feet wide at the top, with gates in the middle capable of discharging the overflow at the rate of 187,572 cubic feet per second. This structure contains 23,000,000 cubic yards of material.

The human side of making the Panama Canal is a romance in itself. At one time forty thousand persons were engaged upon it—enough, if lined up and touching hands, to form a living link between the Atlantic and the Pacific—and among the workers was distributed a large proportion of the cost of construction, which amounted to about \$500,000,000.

One can realize that the new canal will be a stupendous undertaking, and one which will call for brilliant engineering skill as well as an enormous expenditure of time and money.

But that it will be a commercial success cannot be doubted. The distance from the ends of the Nicaraguan Canal to San Francisco and New York will be five hundred miles shorter than from the ends of the Panama Canal, and in connection with the facilitation of transport it is good business to spend millions for the sake of saving minutes.

—and the worst is yet to come



## HIGH STANDARD OF FARM PRODUCTION

### CANADA WINS PREMIER AWARDS FOR WHEAT.

### Survey Proves Dominion Produces the Finest Crops of Cereals in the World.

Frequent articles in the public press have dealt with Canada's international victories in carrying off the premier awards for the production of quality wheat on the American continent consistently for the past ten years, as well as the greater number of the honors for oats and barley. The contention in these collated facts is that Canada produces cereals which are second to none the world over, and in the face of the evidence there is no gainsaying this.

Whilst Canada comes into open competition with the world in the quality of her agricultural produce of all kinds, and can grow on her fertile farms crops of the highest grade, she is unable as yet to enter into comparison in the matter of total production. A vast portion of her rich agricultural land, amounting to many millions of acres, and forming potentially one of the world's great farming areas, is undeveloped and awaits settlement and the plough before producing to capacity in the manner that has made the quality of Dominion crops famous.

Canada can, however, come into active competition with other countries largely agricultural, the United States, for example, with respect to the fertility of her land, its growing qualities and those of the Canadian climate and farming season. Compared as to average production, she makes a very fine showing. A comparison between Canadian and United States production for the past three years shows that Canada has maintained a high standard in all the crops she cultivates, and has in the majority of cases exceeded the average achieved by the older producing country.

### The Centre of Wheat Production.

It is not so long ago since agriculturalists scoffed at the idea that it would be possible to grow wheat profitably in Canada. Canadian farmers answered this by taking most of the premier honors for this crop at international exhibitions. Not only that, but it is apparent that the Dominion preserves a higher average production throughout the country in both spring and winter varieties than the United States, taken as a whole. In the year 1920, when the production of spring and winter wheat in the United States was 10.8 and 15.3 bushels per acre respectively, Canada secured an average of 14 and 24 bushels. In the previous year, 1919, with a United States production of 8.8 and 14.9 bushels, Canada's average yields per acre were 9.50 and 23.75. To go back another year, they compared 16.2 and 15.2 as against 10.75 and 19.00 the United States obtaining a greater average yield of spring wheat in that season.

A comparison of the respective yields of the past three years in oats indicates that Canada, although she secured most of the international honors for the quality of her product, has fallen slightly behind the United States in average production per acre. Whereas in 1920 her average production was 33.50 bushels per acre, that of the United States was 35 bushels. In the previous year, when she produced 26.25 bushels, farmers across the line managed to achieve 29.4 bushels. In the year 1918 the yields stood at 34.7 and 28.75 with the United States in the ascendancy. The same slight difference is recorded in barley, the average yields being 25.6 and 24.75; 22.4 and 21.75; 26.3 and 24.50.

But when we pass on to other agri-

cultural production, the comparisons read differently, and, with few exceptions, Canadian farms are found to out-yield those of the United States. In rye for instance, when the average yields per acre over the United States during the years 1920, 1919 and 1918 were respectively 13.7, 12.5 and 14.2, Canada obtained harvests which brought her averages up to 17.50, 13.50 and 15.25.

### Buckwheat, Flax, Hay, etc.

Buckwheat is not raised extensively in Canada outside of the Maritime provinces. Nevertheless, judging by the last three years' respective productions, Canada can grow this crop more profitably than farmers across the international boundary. In 1920 Canadian farms secured an average production per acre of 23.75 bushels, whilst United States farmers reached a yield of only 18.9 bushels. In 1919 Canada's average yield was 23.50 bushels against that of 20.6 across the line. Again, in 1918 a comparison is found to be in Canada's favor with 20.75 bushels against 16.5 bushels.

In the production of flaxseed in 1920, the United States grew an average of 6.2 bushels to the acre as against Canada's 5.60, but in the year 1919 Canada had the slight advantage of 5.00 against 4.9. There would appear to be no doubt left as to the greater suitability of Canadian land to potato production after a survey of the comparative figures of production. Against the United States average of 109.6 bushels to the acre last year, Canada produced 170.50. Her yield in 1919 was 153.50 against the 90 bushels reached across the line. When the United States produced 95.9 bushels in 1918, Canada achieved 142 bushels.

Slight divergencies only are observed in the hay yields of the two countries, both in the tame and wild varieties. Taking the average of all the hay produced, the United States secured a slightly higher production in 1920 when the yield per acre was 1.34 ton against Canada's 1.30 ton. The advantage is substantially Canada's in the two previous years, however, with averages of 1.55 and 1.40 against 1.36 and 1.15.

This comparative survey should be broad enough and cover a sufficiently extensive period to for man accurate estimate of Canada's merits as an agriculturally producing country. Canada has not only produced the finest crops of cereals in the world as adduced in the open competitions with the first farmers of the continent, but maintains, for the greater part, a superiority in the average yield of the crops she produces. Only wanting is the further growth of settlement upon her fertile tracts, bringing other millions of acres to the same fruitful standard, to give the Dominion the lead of the world in aggregate production.

### Tenement Amenities.

Mrs. Clancy was returning from shopping, and, with the crush and the high prices, she was in no pleasant humor. As she approached the door she saw Mrs. Murphy, who occupied the street floor, sitting at her window. "I say, Mrs. Murphy," she called out in deep sarcasm, "why don't you take your ugly mug out of the windy air? Put your pet monkey in its place? That'd give the neighbors a chance they'd like."

Mrs. Murphy was ready for her. "Well, now, Mrs. Clancy," she retorted, "it was only this mornin' that I did that very thing, an' the policeman came along an' whin he saw the monkey he bowed and shunted an' said, 'Why, Mrs. Clancy, whin did ye move downstairs?'"

The moon is "running away" from its calculated place in the sky for some unknown reason, say the astronomers.

The United Kingdom has more women workers in proportion to the population than any other country in the world.

## Adventures Into the Unknown

### Courting Death in Search of Nature's Secrets.

The spirit of adventure is abroad again. Instincts which had to remain dormant during the war are reviving. The vast Unknown is calling. Its earliest manifestation was the recent tremendous development of spiritualism. What is there in the Great Beyond? What becomes of us when we reach it?

Now men are turning their attention to the more material side. What secrets does Nature yet withhold from us on land, on sea, and in the air? Great uncharted waters, mountains so high that no human being has ever climbed them, islands found and lost again, submerged continents, mysteries of animal and bird existence—here in abundance is scope for the bold adventurer who counts everything, even his own life, well lost if he can add to the store of human knowledge.

### The Men That Britain Breeds.

Such men have never been wanting in Great Britain. Cook, Bruce, Livingstone, Scott—our history is full of the names of brave Britons who, with the Call of Romance in their ears, have faced risks of the utmost peril. Without them the British Empire—even the world itself—would not have been what it is to-day.

Ever since the Phoenicians, nine centuries before Christ, navigated the Mediterranean, passed through the Straits of Gibraltar, and founded colonies in Asia Minor and Africa, the work of exploration has continued. Exploration has moved to some extent in cycles. First, there was the fascinating task of finding what seas and lands the world contained. When that had been accomplished broadly, men began the task in detail, and we had such discoveries as that of the north-west passage to India. Then came the quest for the North and South Poles, veritable magnets of death—until Man triumphed at last.

In most of these enterprises Britons have played a leading part. The unconquerable spirit which spurred them on is as strong and virile as ever. Its new phase is a desire for scientific knowledge of unknown forms of life in lands already discovered.

At the present time four great schemes of exploration are in British hands. The most important of these is that undertaken by Sir Ernest Shackleton. No one will be able to read the details of the wonderful journey to be begun shortly by this famous explorer without feeling the blood course more quickly through his veins. Romance, adventure, danger, the solving of secrets never yet probed—the mere contemplation of it all is intoxicating.

### Lost Island of the Pacific.

In a ship aptly named the Quest—a vessel small enough to be swallowed up in one of the funnels of the Aquitania—Sir Ernest and his band of scientists will embark on a voyage of thirty thousand miles in the Atlantic, Pacific, and Polar seas.

He will explore a petrified forest in South Trinidad; visit Gough Island, in the Atlantic, where an effort will be made to ascertain whether there is a submerged connection between Africa and America; and sail in Antarctic waters south of South Africa through which no ship has passed for ninety years.

This last named adventure will provide him with nearly four thousand miles of unexplored seas. He will discover new islands and gulfs, perhaps volcanoes; and, perchance, animals never yet seen by man. Making his way to the Weddell Sea, he will look for new whaling stations in the South Sandwich Islands and South Georgia. Turning east, he will land on the Bouvet and Heard Islands, and it is possible that he will find traces of the southern fur seal, now almost extinct. Next, Sir Ernest—whose second in command, Commander Ward, is a descendant of Captain Cook on his mother's side—will go to New Zealand, and from there to the Pacific, where it is intended to seek a lost island—Tunaki.

A search will be made for Dougherty Island, and, if possible, a landing will be made upon it to ascertain whether it could be used to assist wireless communication between New Zealand and South America. The return home after this extraordinary voyage will be made by way of Cape Horn and the Atlantic.

The Quest is to carry with it a seaplane, which will be the eyes of the expedition. When the ship is in the ice-packs, the seaplane will ascend and glean valuable information as to what is ahead. It will be able to save weeks of time by ascertaining the curves of the coast. Thus scientific discovery leads us forward irresistibly. Our conquest of the air is to assist us to make fresh conquests in the Unknown. At the present moment another band of intrepid Englishmen is attempting a feat hardly, if at all, less bold. The object is the climbing of that monarch of the Himalayas, Mount Everest, the highest mountain in the world. So resolute have the natives in the vicinity been against former attempts to climb Mount Everest, which they believe to be full of evil spirits, that no white man has been within fifty miles of the mountain.

What the party will have to endure no one knows precisely, but blinding snow-storms, deep precipices, and huge avalanches will be met is certain.

In addition, there is the fact that no human being has yet climbed higher than 24,571 ft., which is the record of the Duke of the Abruzzi. Everest towers 29,000 ft. in height. At such

an altitude the rarefaction of the air causes insomnia, loss of appetite, and rapid acceleration of the heart's beats. Movement becomes difficult, and yet the last four thousand feet of the mountain will probably call for the hardest labor.

### A Two Years' Task.

Every preparation that science can devise has been made for this new expedition. But it is possible for men to overcome the limits set by Nature? Experts differ as to whether success will be achieved or not. At all events, it cannot be accomplished in less than two years. Already one of the party, Dr. Kellas, has died on the journey.

A third band of British explorers has gone to investigate the wonders of Nature in Spitzbergen, a group of islands lying in the Arctic Ocean between Franz Josef Land and Greenland. What were once thought to be valueless waters in Western Spitzbergen are now, owing to British enterprise, yielding large quantities of coal. This time attention has been turned to the eastern section of the islands, and scientists from Oxford University are examining the habits of almost unknown Arctic birds and certain forms of marine life. A special study will be made of the beautiful birds called the grey phalarope and the purple sandpiper. The males of these species build the nests, sit on the eggs, tend the young—in fact, except that they do not lay the eggs, they are the "mothers" of the family.

This visit by leading scientific men has all kinds of romantic possibilities. The eastern islands have never been explored thoroughly. Who knows but that they may contain some precious mineral which will transfer them into a new El Dorado?

### Woman Among Cannibals.

Unaccompanied, and in search of unusual material for her next travel book, Mrs. Charlotte Cameron, F.R.G.S., has left Sydney for the islands of New Guinea. This intrepid author proposes to extend her stay for some months in a region where cannibals are not unknown, and is hopeful of discovering an uncharted island in the South Seas. Then, it was only recently that Mrs. Rosita Forbes, the Englishwoman who, disguised as a native, penetrated into the secret oasis of the Sahara desert, returned from her perilous adventure. And, but a few weeks ago news was received that the expedition under the leadership of Mr. John L. Cope had landed in Antarctica, and begun its five years' pilgrimage amidst the coldest winds that blow.

Surely, it may be thought, when these missions of adventure have been completed, the world will have given up all its secrets! Nothing of the kind. There are parts of Canada yet comparatively unknown. Stefansson, a Norwegian explorer, is at work in these parts now.

There remain to be climbed in the Himalayas seventy mountains of over 24,000 ft., and over a thousand of 20,000 ft. In the Arctic there is, north of the Behring Sea, an area larger than Greenland waiting to be explored. Nobody knows whether it consists of land or water.

Parts of Africa are still almost unknown. The Upper Amazon is almost a closed book, and the same may be said of parts of Central Asia. In Japan, again, two new tribes were discovered in the mountains only last year.

### Secrets of the Sea.

Then there are the illimitable floors of our oceans. Man knows nothing of these. He can go no deeper in his submarines than 300 ft. below the surface of the sea, yet the average depth of the ocean is 12,000 ft. There are "pits" in the sea even deeper than that, and one (in the Pacific) in which Mount Everest itself could be swallowed up easily.

It is reasonable to assume that even at these enormous depths there is life—life that could not exist nearer the surface. What weird form does it take? Man has conquered the air. One day he will descend thousands of feet into the sea and discover the wonderful secrets that are waiting to be revealed. For the Call of Adventure is eternal.

### New Cure for Malaria Found.

Discovery has been made of an efficient substitute for quinine in the treatment of malaria.

A malignant malaria is the curse of parts of Bengal, in India, and it was recently learned that the native tribes use as medicine for it a tea made from the leaves of a forest tree known to botanists as Vitex peduncularis.

A British army surgeon, experimenting with it, found that the malarial parasite disappeared from the blood when doses of the leaf-infusion were administered. It is hoped that the active principle, when extracted from the leaves (as quinine is extracted from cinchona bark) will, because of its concentration, prove even more satisfactory.

The new drug has advantages over quinine, being a stimulant rather than a depressant, having no bitter taste and being suitable for children or invalids.

### 100 Per Cent.

Jimmy—"Father, yesterday at school I made 100 on my studies." Father—"That was fine; what study did you make it in?" Jimmy—"Fifty on spelling and 50 on arithmetic."