

AUTOMOBILE

CONCRETE FOR A WEEK

FIRST AID FOR SUMMER ILLS.

The lumin system tends to react unfavorably to certain conditions that obtain especially in the summer. For instance, children eat green apples and get a stomach ache. The automobile also falls heir to certain summer complaints.

There is the engine, which is apt to become overheated during the hot weather months. Driving the machine at high speed with the spark retarded is one way an engine becomes overheated in summer. The best remedy is to reduce the spark. Chronic overheating of the engine may be traced to sediment in radiator which restricts the free radiation of the heat. This complaint can usually be adjusted by the use of a saturated solution of washing soda and water. Fill the cooling system with a solution of this sort, run the engine for several hours, drain it off and refill the system with clean water.

Fan belts are more apt to get out of order during the heated term. This may be a result of grease thrown by the engine.

Particular care must be taken in summer to keep the radiator well filled with water, so that the cooling system will operate at its best. Keep the radiator free from oil so that the outside passages will not clog. If this is not done a free flow of air will be prevented and the radiating surface will be cut off.

Keep the engine free from carbon and the valve push rods closely adjusted; have the gasoline mixture as lean as possible; in some cases use a little heavier oil, and see that the exhaust from the muffler is free. Then this auto summer complaint known as engine trouble is likely to be avoided.

Tires are more apt to flow out in summer than in winter. Considerable heat is generated by rolling a tire over the ground. This heat expands the air in the tire and increases the pressure. In cold weather this heat is largely absorbed by the cold atmosphere, but not so in summer.

The carburetor needs a little extra attention in the summer time. It will be found often that a little less gasoline will be required.

revolves evenly and only the rim wobbles, then the wheel itself is distorted and must be re-trued. The cost of such re-truing or new wheel will soon be repaid by the resulting increased tire and gasoline mileage.

Rear wheels which do not wobble are seldom out of line with each other, but if the car has been in collision, or traversed extremely rough roads it would be well to test for this as follows: Take a fairly stiff and straight board long enough to extend from the rear part of rear wheel to beyond the front of car. Hold one edge, at one end, against a rear wheel tire, touching both front and rear part of it and as near the centre of wheel as possible, the board pointing forward (having, if necessary, been cut away to clear front wheel) and touching the ground at that end. Get a friend to mark the ground where the edge touches it.

Do the same at the other side of the car, being careful to use same edge and end of board. Now measure between the marks thus made and note. Push car back (or forward) one-half turn of rear wheels and repeat on each as before, again using the same edge and end; compare the two measurements and note the mean—they will vary if wheels have even the slightest tilt. Now turn the board, pointing above at both sides of car and at half edge and end of board) and the mean of these two measurements should be the same as that found for the front end. If not approximately so, the whole rear axle construction is probably distorted, and should be examined and attended to by experienced mechanics.

On the majority of cars the front wheels have "undergathers." That is, they are closer together where they touch the ground than at their upper edges, and where that is the case they should also have "foregather." That is, they should be nearer together (about one-quarter inch) at their front than at their rear edges. Just in this is done is outside the scope of this note, but the foregather must be as nearly correct as possible if the life is to be considered.

Jack up each in turn and spin to test for wobble. With board held at front wheels as given above for the rear ones, and pointing toward the rear, turn steering wheel slightly to right or left until the distance from board to rear wheels is the same on both sides of the car. The wheels are now set true for going straight ahead. Now use board on front wheels exactly as already described for rear ones, marking on the ground and measuring at both front and rear of car. If ten feet is the length of the board from centre of wheel to where it touches the ground, about twenty feet will of course separate the two measurement points. In such case, between the rear marks, there should be about one and three-quarters to two inches greater than that at the front. If correct, adjust by lengthening or shortening the tie rod (that rod connecting the swivel arms of the wheels across the car).

OPPORTUNITY FOR CANADA TO SUPPLY DRUG.

United States Requires 12,000 Tons Per Year to Save the Southern Cotton Crop.

In the strenuous campaign waged in the United States to combat the serious menace of the boll weevil, the infestation of which pest has spread over 97 per cent of the cotton belt, the seriousness of the situation to the Southern cotton fields is apparent when it is realized that the cotton crop of 1922 will probably not exceed ten million bales as compared with the average production of the ten years preceding 1920, which was thirteen million bales. Experiments carried out by the United States Department of Agriculture and by independent agencies in recent years indicate that, so far developed, is the use of calcium arsenate, which is dusted upon the cotton plant at night. The dew becomes impregnated with arsenic and the weevils are poisoned by drinking it.

The resulting demand for calcium arsenate, however, bids fair to outrun the available supply of arsenic. According to a recent issue of Commerce Monthly, the total cotton acreage in 1922 was 32,742,000 acres, so that if applications were made on all fields, 500,000 tons of calcium arsenate would be required. The capacity of present smelters in the United States is estimated at 13,200 tons of arsenic per annum, or a maximum of 25,000 tons should all existing smelters work to capacity. The United States Department of Agriculture states that already the arsenic demand has reached the maximum capacity of the refineries and is expected to go beyond that capacity in the near future. There is practically no direct production from United States arsenical ores.

Necessity of Importation.

From this it is clear that the United States must look to imported supplies if she is to furnish arsenic sufficient to treat more than 1 per cent of her affected cotton fields. The use of arsenic as a general insecticide and weed-killer is increasing on the continent. Aside from the special demand for it to poison the boll weevil it is employed as a cattle and sheep dip. Other industries which compete for the available supply include, besides miscellaneous chemicals, plate glass manufacturing, in which it serves to counteract the coloring effect of metallic oxides and increase the brilliancy of the glass. It has been estimated that in 1920 from 50 to 60 per cent of consumption in the United States was for insecticides and fungicides and from 25 to 30 per cent for the manufacture of plate glass.

Arsenic may be obtained direct from ore, when circumstances are such that treatment primarily for this product is profitable. The greater part of the output of the United States, however, is recovered from fine dust as a by-product of the smelting of metals, principally copper and lead, and the quantity produced, therefore, depends upon the situation in the market for these metals rather than upon the demand for arsenic. Consumption of arsenic in the United States in 1920 was estimated at 14,000 to 16,000 tons, imports supplying 3,740 tons, and present demand is believed to be about 12,000 tons. Whilst the United States is the largest producer of arsenic, it is also the largest consumer, and at no time does domestic output meet sufficient to satisfy domestic requirements.

Prior to the war, France was an important producer of arsenic with an output of 70,613 tons of ore, and Germany was second, producing 5,008 tons of white arsenic, metallic arsenic, sulphide, etc. In both these countries arsenic is a primary product of arsenical ores. Great Britain and Canada recover arsenic from smelters, and are being installed in Japan. The chief sources of imports into the United States are Mexico and Canada. Shipments are also made from Japan, but a large part of the Japanese output is consumed locally.

Canadian Production Can be Increased.

The production of arsenic in Canada in 1922 amounted to 2,576 tons valued at \$221,037, which was an increase of 73 per cent in quantity but only 37 per cent in value over the shipments of this quantity was produced in the smelting of silver-cobalt-nickel ores in the Cobalt district. One gold mining



CONSERVING OUR HEALTH RESOURCES

WORK OF DEPARTMENT OF PUBLIC HEALTH.

Progress Attained in Combating the Narcotic Drug Evil in the Dominion.

It is an axiom that the good health of a people constitutes a great national resource. Canada possesses a bracing and healthful climate and her people have a high average of strength and vitality. Many agencies are at work for the combating and eventual eradication of preventable disease, and recently there has been added to this work a campaign against the use of harmful drugs. The narcotic drug habit, which is naturally a cause of lowered vitality and efficiency in the nation is one of the evils which the Canadian Department of Health has since its establishment four years ago, striven to stamp out and with gratifying results. As the table given below shows, between the years 1919 and 1922, importations of cocaine and morphine through the regular channels of trade fell off about seventy-five per cent, while only about one-fifteenth as much crude opium was imported in the latter as in the former year.

The Drug Evil in Canada.

The narcotic drug evil in Canada can be traced back to about 1880, but was not until 1908 that its presence was brought very noticeably to the attention of the people of the Dominion. In the later year certain riots broke out in a number of cities on the Pacific coast and much damage was done to the property of the Chinese residents. Claims for damages were presented to the Dominion Government in which were included large amounts for quantities of opium that were destroyed. As a result of an investigation conducted at that time it was ascertained that there existed several factories carrying on an extensive business in opium manufacture, particularly in the cities of Vancouver, Victoria, and New Westminster. The combined annual gross receipts of these concerns amounted to over \$600,000. The same returns showed that in the year 1908 the importation of the drug into Canada had reached the great amount of 38,013 pounds or in other words, forty-four tons. Between seventy and one hundred persons were employed in the opium factories and some of the factories had been in existence for over twenty years, although the majority of them had been only recently established. It was ascertained by the owners of these establishments that all the opium manufactured was consumed in Canada and that almost as much of the product was sold to the white people as to the Chinese.

	Cocaine	Morphine	Crude Opium
	or	or	lb.
1919	12,328	30,697	34,263
1920	6,968	23,198	12,228
1921	3,310	12,124	2,952
1922	2,952	8,774	1,700

The illicit traffic, however, constitutes a much more difficult problem as supplies are smuggled in by every conceivable means "through the underground channels." During the past year the police and customs authorities intercepted a large number of all to about 15,000 ounces in addition to a large quantity of opium and opium-smoking paraphernalia.

One of the lines on which the Department of Health has been operating has been the development of co-operation between Dominion, provincial and municipal police in prosecuting offenders against the Act with the result that in the past two years about as many convictions were secured as in the preceding ten years. The number of convictions in 1922 was 1,558 (sixteen or nearly sixty per cent were Chinese, and 563 British and American). The remainder was divided among ten other nationalities.

The Opium and Narcotic Drug Act on the Statute books of Canada is as far-reaching a piece of legislation as any in existence. It provides the necessary machinery for dealing with drug traffickers. The Department of

Noted District

Hot Stuff.

We have all read how Mr. Brownlie, President of the Amalgamated Miners, assured the Duke of York that he would be "safe in the hands of a Scotch lassie." Just before their marriage the Duke introduced Mr. Brownlie to Lady Elizabeth with "Here is the Scottish lassie, Mr. Brownlie."

There was another of the executive committee of the A.B.U., who was presented to the Duchess.

"She's more charming even than everyone says," said Mr. Button.

"Why didn't you tell her so?" remarked another Labor leader.

"I did," replied Mr. Button, and went on: "And she's prettier than any photograph can convey."

"Why didn't you tell her so?" asked the other Labor leader.

"I did," said Mr. Button.

Have you ever heard the story of the Indian missionary who allowed an American to sample some chutney he was bringing home? Silas K. Hocking tells it in "My Book of Memory."

After the first spoonful of chutney he had been swallowed the American seemed overwhelmed by some great emotion. When he recovered he turned a reproachful fact on the missionary.

"You're a missionary?" he asked.

"That is so," was the reply.

"And I suppose you believe in Hell fire; but I'm blamed if you're not the first who ever took samples round with him!"

Delightful Memories.

Sir Henry Robinson's book, "Delightful Memories: Wise and Otherwise," is delightful. It is full of intimate pictures of books in 1908. In 1910, as a result of this Act, the amount of opium imported was only 3,576 pounds, a reduction of over forty tons in two years.

The Hague Convention.

It was found, however, that in other parts of Canada the opium evil had spread and the improper use of opium, morphine and cocaine had reached alarming proportions. Amendments to cover morphine and cocaine were made to the Act in 1911. Later, as one of the British Dominions, Canada subscribed to the convention reached at the international opium conference held at The Hague. However, the outbreak of war left the ratification in abeyance and it was not until the treaties of peace with Germany, Austria, and Bulgaria were being drawn up that further action was taken. The League of Nations, which made it necessary for a revision of the existing Canadian laws. As a result of this the present Opium and Narcotic Drug Act was passed and brought into force in 1920. The Act was carefully drafted and under it all legitimate dealers are licensed, so that the Government knows the exact quantity of each individual shipment imported or exported through the regular channels of trade. Under this system of licensing the following reductions in the amount of narcotic drugs imported into Canada took place:

Here's the latest regarding the Prince of Wales. It relates to the Prince's popularity, and to the reason thereof.

"It's popular, that's a fact!" observed a workman, watching the Prince go by, and welcoming the opportunity to knock off for two minutes.

"Ay, a fact it is!" replied the mate.

"Blimey, I won't sometimes 'ow a chap can get as popular as 'im!"

"It's understandin' 'ow 'o' it's rep'lied the other. "See, it's like this 'ere! If I was 'ungry and arst yer for a bit of blinkin' bread, you'd give it me!"

"So 'o' would!"

"Now, the Prince, 'e 'e just wouldn't do that; 'e'd give me a blinkin' rock-cake. See! 'E 'e just under stands things won'terful, 'e does!"

Marie Antoinette's Kiss.

Marie Antoinette, pitiable woman that she was in life and especially in her death under the knife of the guillotine, is the object of many interesting stories. A contributor whose name we were French royalists found some time ago among her family heirlooms a notebook, or diary, containing this touching incident illustrative of the young queen's impulsiveness and sympathy.

In some things Marie Antoinette, so runs the record, is but a thoughtless young girl, although she can assume the queenly dignity befitting her station when she so desires. In her private life she was less indulgent of her own whims, there would be a sorry time in the royal household. One day in a spirit of mischief she made a wager with the ladies of her entourage that she could make the Swiss guard, who was stationed at the door smile. The Swiss guards are dressed in magnificent uniforms. They stand erect and impassive as statues, well knowing the punishment for the least change of attitude.

In one of her kayest moods the beautiful young queen came down the magnificent hall, most royally attired and chatting gaily with her companions. When the party came near the door the queen hesitated a moment, glanced at her maid and then, deliberately plucking a rose from her corsage, stepped quickly to the immobile sentry and lightly dropped it on the hand gripping his musket. He kept the act but gave no sign of appreciating the honor that many a gallant cavalier would have risked his life for. A bright flush suffused the countenance of the queen as she realized that she was in danger of losing her wager, and, instantly pointing white satin slipper, she reached up and with inimitable grace modestly kissed the cheek of the giant guard! Even then she made no salute to majesty, but her eyes slowly filled with tears. In spite of her frivolity the queen had a good heart and, touched by the apparent confusion of the sentry, she murmured a few friendly words, and the party pressed on.

Gossip soon brought the incident to the notice of the king, and he caused the guard to be brought into the royal presence. The poor fellow was greatly alarmed, but on being assured that he had been long separated from his wife who he so dearly loved, and that the beautiful queen so strongly reminded him of her that he could not control his emotion.

The king gave the guard a present of money, and dismissed him with a promise that he should immediately have leave of absence. Thus the peak ended happily, but the queen lost her wager, the character of which is not recorded.

Reform in Cavalry.

Officer Stonebat—"I'm going down to pinch skinpans for sellin' that new drink he makes out of spoiled grapes."

Jack—"I thought you rather liked that drink."

Stonebat—"I did, but he doesn't pass me my share."

By soaking rusted bolts in vinegar they can generally be removed. Promise is good; intention is better; performance is best.

Men or Deer?

In England under the severe taxation following the Great War estate after estate is passing from the hands of the hereditary owners. Some are merely sold to wealthier persons, but many are broken up or from properties productive for generations chiefly of beauty are turned into farms and made to earn their keep. No doubt that is well, though we can but sympathize with the hard-pressed owners of many lovely domains who in the past have shared with the public the loveliness of their lands. Some forty years ago when under the new Crofters' Act many of the great estates of Scotland were divided—and the oppression of the tenant on others was compulsorily lessened—there was little reason indeed to sympathize with the hereditary landlords.

Lord Shaw of Dunfermline has recently related that he was called to the defense of some prisoners, crofters under the leadership of a village schoolmaster, who had been arraigned for their part in a deer raid. It was not a poacher's raid but a protest, a lawless and unwise one perhaps, but the crown authorities oversteer the mark when they called it "mobbing and rioting."

"The loneliness of the spot," says the narrator, "the total absence of any terror or alarm to anyone except the deer or the hawk, or the curlew, made a charge of mobbing and rioting ridiculous. The advantage of it, however, from the point of view of the administration was that it could be followed by such swinging sentences, even that of penal servitude, as might stamp out land agitation for a generation."

The defence did not try to prove its clients innocent of offense but that their offense was merely under an old statute—"assembling and trespassing to the number of five or more persons in pursuit of game," penalty five pounds each. The climax of the trial came

dramatically when Lord Shaw argued the impossibility of the mobbing and rioting charge in such a region.

"No less than one hundred and fifty square miles of forest under deer! The holdings to the wastes near the shore and the whole island consolidated—turned into one vast solitude—for sport! Then I quoted amid dead silence Tennyson's lines on pagan England:

"And there grew great tracts of wild-erns
Wherein the beast was ever more and more
But man was less and less!"

"There was an uproar if the court in which I think I saw the jury joining with their feet!" a tumult that the court and the ushers peremptorily suppressed. But the jury's mind was not guilty and went free amid acclamations.

So much did the trial mean to the people that thirty years afterwards Scotch boatman said solemnly to Lord Shaw's son: "Sir, there is many a man in Scotland would die for your father."

The best companion is a good conscience.

Wonderful Doll's House.

The most wonderful doll's house in the world is now being constructed from a design by Sir Edwin Landseer Lutyns, prominent architect. It will contain a running water in tiny baths, books the size of one's fingernails, and seven-inch full length portraits of the King and Queen done by Major Sir William Orpen.

This doll's mansion was originally suggested by the Queen to aid the hospital of London. It will be placed in the British Empire exhibition next year for this purpose.

Its doors are so delicate that they had to be made by a watchmaker. Yet its small size notwithstanding, it is complete in every detail, including garden, garage and power house, all contained within the space of 12 feet and 7 inches. The house itself, which stands on a base of cedar and mahogany in the style of the Hamlet Court buildings of red brick and white stone, set in a garden of velvet turf, clipped hedges, tiny paved paths and statues in odd corners.

In the library every British author of note is represented in beautifully bound volumes, whose every word may be read with a magnifying glass. A collection of drawings representative of the best art of miniature, every specially executed in miniature, every piece of furniture is a work of art, including the mantle pieces, and a marble inlaid and jade table. The walls are lined with linen and silk, their panelings beautifully carved and the window settings are painted by Sir William Nicholson.

In the music room is a grand piano seven inches long, which could be played if one's fingers were light enough to touch each single note. The kitchen is equipped with every utensil, and the entire building is illuminated by electricity, regulated by tiny switches in each room. Electric lifts are provided, and in the garage the doll inmates may find models of the finest motor cars.

Opportunity knocks at a man's door not once but continuously. Whenever he chooses he may admit her.

Our Canadian Song-Birds

By P. A. Taverner, Ornithologist of the Canadian National Museum, Ottawa.

Appreciation of Bird Songs Largely a Matter of Sentiment and Tradition.

With the belated arrival of Spring, Canadian bird-lovers are once more on the lookout for the return of their feathered favorites. Canada's song-birds, beloved as they are by her native sons and daughters, have at times been objects of disparaging reference by new-comers to our country. In this connection it may be pointed out that appreciation of bird songs is largely a matter of sentiment, familiarity, association and tradition. Coming here where all is new, the bird songs carry no memories and association to the visitor from foreign shores, even if that shore is no more foreign than the British Isles.

It is not at all surprising that the newcomer fails to hear the music that we read into them. William Brewster failed to appreciate the white-throated sparrow when he first heard it in the north, and such strange American bird-lovers as Frank Chapman, John Burrows and our own Will Saunders expressed themselves disappointed at the first hearing of British birds. One friend visiting England described the skylark as "that squeaking up there." I am not insinuating that the skylark

squeaks but merely attempting to demonstrate that appreciation of bird songs depends as much on what they bring to them as what they bring to us. An Englishman can no more justly appreciate our birds than we can his.

Our Singers Are Shy.

Unfortunately most of our finest singers have to be unobtrusively wooed. To a native Canadian no song is sweeter than the cheerful chirrup of the robin (American), the plaintive, graceful warble of the bluebird or the golden flute notes of the meadow lark. They are not mere songs to us, they are the voice of Spring, the beauty of the blossoming orchard and the memories of the old home. It is impossible to judge them dispassionately and in cold blood. These associations are, to us, as much a part of the songs as the notes themselves.

Have you ever heard a brown thrasher in Spring-time, singing hour after hour from the topmost spray of a thorn bush; or a really good catbird when he forgets interludes and bores over that wondrous sound from the tiny ruby-

crowns kinglet? Have you heard the wailing song of the winter wren in the black tangle of the deep spruce woods, the absolute purity of tone of the hermit thrush or the golden jangling chain of the vireo? The American goldfinch has a charming little warble as well as his merry "perchick-o-pee" that he utters as he strings his graceful loops of flight. Is there anything more perfectly in keeping with the night, its woody hollows and soft shadows, than the plaintive whip-poor-will? Have you ever heard the long, loud wail of the loon over the black water to an accompaniment of whispering pines?

Making Homes for the Birds.

It is a fact that, although we have so many species of birds around us, few people are familiar with them, and it is more surprising, when we consider that not a few of our Canadian songsters will nest close to human habitations in shelters or boxes provided for them. Among the most attractive are little Jenny Wren, the living insect destroyer, the darting tree swallow which keeps the air free of mosquitoes and the pensive, shy, Bluebird.

... shifting his light load of song
From post to post along the cheerless fence."
—Emerson.

No Intruders Wanted.

This is our music and it is truly Canadian and part of our fibre and soul. We do not want intruding, stranger birds. We can only have them at the expense of old friends. There are only so many bird niches in the economic scheme of things. To introduce one means the displacement of another, and the price is too steep to pay.

Ill-advised introductions have been attempted again and again. There are probably few land birds on the British list that at one time or another some-

where in the country enthusiasts have not attempted to naturalize. With few exceptions they have, thank Providence, all failed. Yes, there must be Canadian Angels to protect us from alien Angels to protect us from ourselves. Goldfinches and skylarks held on precariously about New York and elsewhere but never made secure establishment. The only success we have had succeeded but too well. The Guardian Angel must have dozed, the house sparrow and the European starling are with us for keeps and we wish they weren't. Lately comes the report of the Japanese starling about Vancouver. Where it will end, goodness only knows, but we have little confidence in it. We hope it will be harmless but it has become a pest in Hawaii where it was also introduced.

So dangerous is this naturalization of foreign birds and an "American" that their introduction is now forbidden and to-day no importations can be made in either Canada or the United States without special permission and if necessary guarantee against liberation or escape.—Canadian Forestry Magazine.



"Speaking of sparrows, my new dove just won the derby."
She—"And sparrows are so out of style."



Reform in Cavalry.
Officer Stonebat—"I'm going down to pinch skinpans for sellin' that new drink he makes out of spoiled grapes."
Jack—"I thought you rather liked that drink."
Stonebat—"I did, but he doesn't pass me my share."
By soaking rusted bolts in vinegar they can generally be removed. Promise is good; intention is better; performance is best.