

The AUTOMOBILE

HIGHWAYS ARE GRAVEYARD FOR MISSING PARTS.

There are probably enough spare parts of automobiles imbedded in city and country highways to furnish a fairly complete stock for no small number of automobile accessory stores. One has but to walk along a street or road that is frequented by motor cars to find, if one looks carefully, any number of parts which have shaken loose from some car. A keen-eyed junkman ought to be able to make a good living picking them up.

A friend of mine recently announced that he was going to sell his car. He said he could afford the car all right and the expense of gas and oil, but he couldn't stand the cost of the upkeep. He admitted that he had never taken any pains to keep his machine in condition. Consequently this boy or that was continually getting loose without his knowledge. Various pieces were therefore adding themselves to the road's already overstocked supply of parts. No wonder he wanted to dispose of his car. But all his trouble could have been avoided had just a little attention been given now and then to checking up on the condition of his machine and keeping things from getting a wrong start.

The other day a car stopped in front of a garage where I happened to be standing. The driver pondered deeply over the fact that the engine had no power. Failing to find the solution of his problem he called a mechanic to look it over.

Where the Trouble Lay.

"A few minutes ago," he said, "the engine had so much power I couldn't stop it when I wanted to. Now I can't make it pull at all."

"Open your throttle," said the automotive expert.

"The throttle is open," was the response.

"Oh, I see," said the workman, and disappeared into the garage. In a few minutes he reappeared with a small bolt and proceeded to connect the throttle linkage so that the lever and accelerator pedal would open the throttle when moved.

What had happened was that through neglect the bolt had worked loose and dropped out, so that the lever did not move the throttle arm, and advancing the lever had no effect.

Many of the stray parts are of a similar nature—nuts, bolts, washers, screws, cotter pins and the like—which have worked loose because of

neglect. Their absence will doubtless account for a good many of the rattles and squeaks which are causing the owner to complain, and requiring him to spend considerable good money at some service station for repairs.

Neglect Causes Despair.

The average instruction book given with a car will advise the owner to go over the car ever so often and tighten up the bolts and nuts as a precautionary measure. But often, little, if any, attention is paid to this until the car stops or develops some unusual sound. Then a mechanic is called in, and it takes him an hour to find the cause of the trouble, while the owner looks on in despair.

Hub caps are parts susceptible to loss. Such a loss allows grit to get into the bearings, all of which could be prevented by taking a little care of them. Some parts that are lost are of such a nature that a puncture is readily given to a tire running over them. In such a case there is not only a loss to the machine from which such parts come, but also a troublesome time for those who may follow in its tracks.

I have seen the pin holding in place the tie rod which keeps the wheels in alignment drop out, and in another case, while hunting a knock, I have found the cylinder loose on the base because the nuts had been without lock washers or cotter pins, and had worked loose. They might in time have worked off entirely and there would have been a "cylinder missing."

I have also seen the entire engine loose on the frame, so that it was doing a fox trot while running.

The owner should become well acquainted with his car, so that he knows where the different bolts and nuts are. Some drivers will tighten up all that they know about, but do not bend their backs to get underneath where they can see the dust pan bolts and brake-linkage bolts. If the owner knows where these parts are he should make it his business to see that every bolt and pin is locked with a lock washer or cotter pin. Then he should go over them at least once a month and tighten them up.

A driver may be sure he will pay several times the value of parts that are lost in getting them replaced, so that economy is involved as well as the inconvenience of having the car stopped on the road.

Great Discoveries That Were Scorned.

There are many tragic stories of men who made great discoveries before their time. Their inventions perished, only to be rediscovered and used in later years.

Archimedes, who lived more than two thousand years ago, designed and made a steam engine which really worked. His idea did not catch on, and the world had to wait twenty centuries until steam, raising the lid of a kettle, led James Watt to re-discover an old invention.

Both electricity and magnetism were known to the Greeks, who failed to harness the one or use the other for the mariner's compass. The Chinese were using the compass before the Christian era began, and explorers brought it back with them from the East in quite early days. The old salts of the time condemned it as a useless toy, and it was not re-invented for hundreds of years.

The first submarine on record made several successful dives in the Thames in the reign of Charles II. No one

realized its possibilities, and the invention languished until the French revived it only a few years ago.

Breech-loading field guns were used at the Battle of Greivy in 1346! They fired brass cartridges almost exactly like those used for the most up-to-date guns. They did not please the artillery experts of the time, however, and clumsy muzzle-loaders were the only guns used until seventy years ago, when, after a lapse of five hundred years, the breech-loader was re-invented.

Most wonderful of all, wireless telephony was discovered and used more than half a century ago by a scientist who could get no one to realize the value of his invention.

Brain trouble is due in almost every instance to bodily illness or disturbance.

The height of the atmosphere is computed at one hundred miles, and its density decreases as its distance from the earth increases.

Bits of Canadian News

The Point du Bois Mining and Development Company, Limited, has been incorporated with capital of \$1,000,000, and will, amongst other things, develop a mica deposit near Point du Bois, Manitoba. The deposit is about ten miles north of Lac du Bonnet, and it is claimed that potash deposits are also in the district.

A co-operative scheme for marketing poultry, which includes extension of credits to the extent of \$10,000, and the establishment of a killing station at Moncton, has been approved by the Provincial Government of New Brunswick.

The latest government estimate of the wheat crop of Canada places the total yield at approximately 294,000,000 bushels, exceeding last year's crop by nearly 30,000,000 bushels.

Over \$1,600,000 worth of aluminum kitchen utensils and other articles manufactured from this metal were made in Canada during 1920, according to a statement issued by the Dominion Bureau of Statistics. The capital invested in this industry was more than three and one-quarter million dollars. All plants are confined to Ontario. The industry furnished employment to more than 800 individuals, the amount paid in wages during the year being \$351,643. In addition to the above \$45,698 was paid to members of the administration staff.

The first shipment of Canadian goods to Russia since the Bolshevik revolution will be made from Montreal this month, when the advance consignment of 500 oil tank cars, now near

completion in the shops of the Canadian Car and Foundry Company, Limited, will be placed aboard a Canadian steamer for transportation to Novorossiysk, a Russian port on the Black Sea.

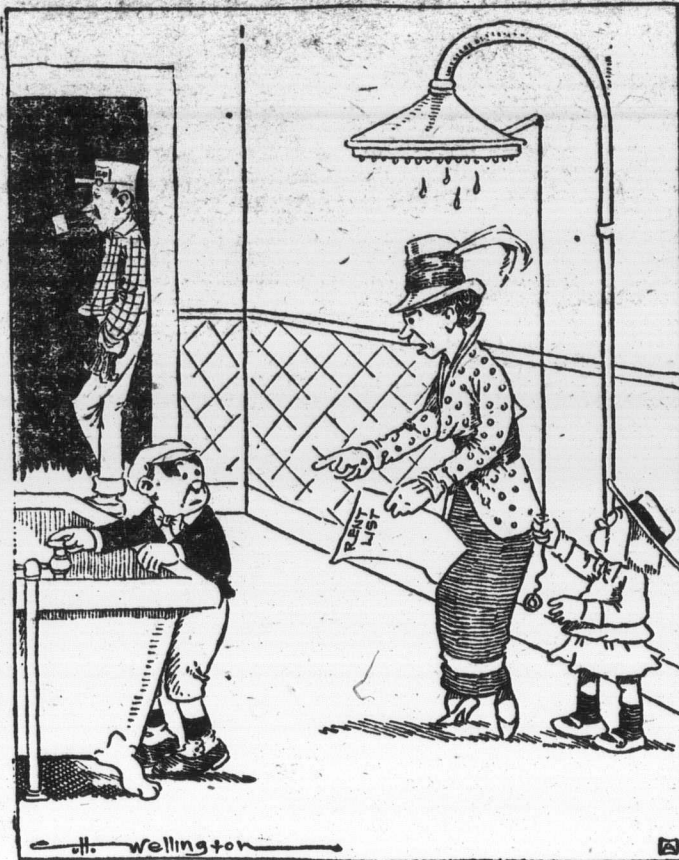
Authority for the construction of a \$500,000 plant has been given to the Three Rivers Pulp and Paper Company by the municipal council of Three Rivers. The erection of this plant will be commenced this year.

A Canadian record for haulage was established when a train three-quarters of a mile long, drawn by two of the largest engines of the service, with seventy-five cars, containing eighty-five thousand bushels of grain, reached Port William recently.

The winter cruising field will be entered into by the Canadian Pacific Steamships this coming season, the company having allocated to the purpose two of its finest liners. The "Empress of Britain," which is now employed on the North Atlantic run, is scheduled to make two trips to the West Indies; the "Empress of Scotland" will cruise to the Mediterranean.

It is estimated that Southern Alberta and Southern Saskatchewan are this year seeding about 850,000 acres to fall-planted rye, as compared with 850,000 acres last year, an increase of about 500,000 acres, or about 18 per cent. It is further calculated that the rye crop of 1921 in Southern Alberta and Saskatchewan will give the farmers of these districts three or four million dollars more than they will receive this year.

and the worst is yet to come



TURN A LIABILITY INTO AN ASSET

UTILIZING "NUISANCES" OF THE OCEAN.

An Infant Industry Capable of Enormous Expansion on East and West Coasts.

With most expensive fishing grounds, Canada possesses in her prolific waters some six hundred different varieties of edible fish of which only about one hundred and fifty are known and less than twenty are really important factors on the market. Canada has also in her waters certain creatures of the ocean which are not only non-edible, and from this point of view of no commercial account, but have in addition, to be placed on the debit side of the Dominion's banking account as taking a serious toll of the valuable species, being a continual menace to the fish breeding grounds and constituting themselves general nuisances to fishermen. Such are the mudshark, the dogfish, the hair seal and the sea lion.

It has been discovered that these apparently valueless and pestiferous members of the sea family, whilst having no edible value, possess valuable properties of commercial worth, and considerable attention, especially on the Pacific coast, has been paid of late to their attraction. Commencing with the utilization of whale and fish waste—making use of parts which were previously rejected—this has been followed up by using hitherto worthless members of the ocean family and obtaining a handsome return from their carcasses, at the one time removing a fisherman's pest and giving him returns on that part of his catch which he was in the habit of throwing away.

Sharks can be made to contribute food, gelatines and oil for many purposes as well as being a source of shoe leather. The livers are taken for the oil they contain and this industry has thrived for some time in Newfoundland and Labrador and is progressing on the Pacific coast. The livers are placed in water, cooked by fire or steam, and the oil skimmed off. This oil is of value in dressing leather, soap making, fish glue, paints and for medicinal purposes. The dogfish,

which is a smaller species of shark, attains a size of about four feet. It yields oil and a by-product of fertilizer, whilst other properties can also be made to produce. These fish are a considerable source of annoyance to fishermen, making holes in their nets, consuming portions of the catch, and driving away schools the fishermen are following up.

Many Fish Products Plants.

The unsaleable small fish, viscera, heads, etc., of the annual catch in Canada is estimated at about 250,000 tons. Nearly fifty per cent. of the salmon catch on the Pacific coast, seventy-five per cent. of the lobsters canned and over forty per cent. of the catch of the Great Lakes come under this head. At present only about 1,000 tons are used and this could be largely increased though the greater portion cannot be collected. On the Atlantic coast there are two fish product plants at Canoe and Lockeport, Nova Scotia, and one on inland waters at Port Stanley, Ontario, on Lake Erie. The greatest activity in this line is shown in British Columbia and here, judging by the interest of 1920, Whaling companies on the coast have awakened to the value of properties in these mammals which they were wasting, and in addition to the plant which has been operating at Victoria for some time, a whale by-products and non-edible fish industry was commenced on Vancouver Island last year by British capital. Fertilizer, oil and other products to be manufactured from matter previously thrown away are now saved for a steady and profitable market.

At Nanaimo, in the same year, a \$40,000 fish meal and oil refinery with \$15,000 worth of machinery commenced operations with an output of twenty tons daily, five tons of fish producing one ton of meal and fifty gallons of coarse oil suitable for machinery. Only the coarsest kind of fish, dogfish, sharks and other non-edible varieties are used in the manufacture and these are purchased from local fishermen who, in this way, not only find a market for a part of their catch previously worthless, but find it profitable to do this kind of fishing exclusively.

Returned Soldiers Operate Pacific Plant.

A company of returned soldiers organized last year for the purpose of getting after the mud shark on the Pacific coast and they have established a thriving industry on Vancouver Island. Oil is extracted and fertilizer

An Old Nation Reborn

Lifting out of the mists of antiquity and taking shape in tangible form, the Garden of Eden is about to take its place in the geographies under the name of the Kingdom of Irak, and it will function under a British mandate. After ages of idleness this garden spot of all the world, from which the human race is supposed to have sprung, is again going to be an integral part in the economic progress of Mother Earth.

The new kingdom, or rather the oldest of kingdoms garbed in a cutaway coat, striped trousers, boots and spats and topped by a stiff hat, will take the place once occupied by Babylon in robes of gleaming silk and bedecked with gold and gems of price. It is situated in the fertile plain between the Tigris and Euphrates, which is now about half bog and half desert waste, but which was once a garden that bloomed and fruited as no other spot on earth.

An appreciation of the possibilities of this territory may be obtained by a study of the past. In the beginning of history this plain was the home of a rich, cultured people whose wealth and comfort depended entirely upon the intricate system of canals which crossed the region between the two rivers. Remains of these old waterways may yet be traced across arid wastes or through inaccessible bogs.

But ever and always to the north and east dwelt menace, the turbulent hill people who looked with longing eyes on the fertile fields and easy lives of the dwellers in the man-made paradise. For centuries civilization had a bulwark of soldiers, a sort of armored dike, between it and the horde of barbarians, but finally the Parthians pierced the wall and then overran the country. They were followed by the Persians, and under the less-civilized rulers the canals that were the secret of the land's wealth were allowed to fall into disrepair but the process of disintegration was slow and under the Abbasid Caliphs, a combination of Arabic and Persian culture, Baghdad was founded in the centre of the river plain and for a time it was a metropolis of the world, with a population of 2,000,000. Gay, wicked, splendid in its shame and glorious in its excesses, the city thrived for a time.

Canal walls crumbled, desert lands crept down and reclaimed their own, the waters of the river, left to follow their own course, crept across the fertile acres, turning them into bogs, until now much of the incomparably fertile soil is lost. In 1903 some reclamation work was done and since 1917, when the British occupied Baghdad, this work has been carried forward much more rapidly until now an appreciable acreage has again been made productive.

Peculiar Facts and Figures.

China holds the world's record for legal executions, twelve thousand of which are estimated to take place yearly.

The population of Scotland (4,382,288) is three times what it was in 1801. The number of women exceeds that of men by 185,482.

The whale has the thickest hide of any creature or reptile in the world. In some places the skin of the larger specimens is two feet thick.

In the Channel Islands sunshine is enjoyed during 39.9 per cent. of the time during which the sun is above the horizon in the course of a year.

The largest spider in the world was discovered at Sumatra; its body was nine inches in circumference, and it had legs seventeen inches in length. There are about 1,500,000,000 inhabitants on the globe. Of these 50,000,000 die every year, 137,736 per day, 5,595 three in every two seconds, three in every two seconds.

There were twice as many marriages in France in 1920 as in 1913—623,309 against 312,036. The excess of births over deaths last year was 159,000, compared with 58,000 in 1913.

The Chinese have an easy and convenient way of taking the Census, the oldest man in each block of ten houses being authorized to make the count on a given date, and send the list to the Imperial tax official.

Very little ice is made in England, the greater bulk of it being imported from Norway, in special fast wooden ships. The ice comes from the lakes high up in the mountains and is cut by horse ploughs, and then hewn into blocks by long-toothed handsaws.

Iron From Rust.

It is oxide of iron that gives to you blood its brilliant red color. If blood contained no iron, all men and women would look like walking corpses.

Nowhere in nature is iron found in a "native" or pure state. It occurs only in the form of oxides—that is to say, as iron rust. Man's greatest triumph was achieved when he discovered how to "undo" iron rust and get the iron out of it. But for that, our civilization to-day would be no further advanced than that of ancient Egypt or Assyria.

Edwin E. Slosson, in his remarkable new book, "Creative Chemistry," says that every year the blast furnaces of the world release 72,000,000 tons of iron from its oxides; and every year one-fourth of that quantity reverts to rust. Should man cease his efforts in this direction for a generation, there would be little left to show that he had ever learned to extract iron from its ores.

Over 62,000 private wells were damaged or destroyed in France during the war.

Don't insist on having your own way unless you know where the road ends.

Mules That Operate Electrically

Six mules are required to drag a big warship through the locks of the Panama Canal. They are electric mules, which run on tracks at either side of the lock, each of them equipped with a powerful motor.

Four of these mules (two on each side) do the pulling, cables being attached to them for the purpose; the remaining two merely attend to the business of keeping the stern of the vessel midway in the inclosed water-space, in order that she shall go straight ahead without wobbling.

When it is desired to bring the ship to a stop, the second pair of the forward quarter of mules drops behind and joins the rear two in a strong pull while the pair in front steadies the bow.

Along both sides of each lock are rows of tall tower-like posts which support powerful arc lights, to illuminate the surroundings brilliantly at

night. Thus the machinery may be operated as efficiently in the night-time as by daylight. The huge lamps do not throw their light directly upon the ship, however. They are concealed from view, and the illumination they afford is indirect, so as to avoid dazzling the eyes of those steering.

When a ship goes through a lock, there is no shouting and no noise of any kind. Everything moves in silence and as if by clockwork, the operation being directed by a man on board the vessel, who makes signals with his arms. If it be nighttime, he holds in each hand a rod with a small electric lamp on the end.

The canal is lighted throughout its length by electricity, like a street, light-buoys marking the channel across the great expanse of Gatun Lake, an artificial body of water which covers 187 square miles, and which extends two-thirds of the voyaging distance from ocean to ocean.