The Automobile

WHY BATTERIES FREEZE.

With the arrival of real cold weather it is doubly important that the storage battery on a car be kept as nearly fully charged as possible, else it may freeze. This means that its hydrometer reading should be kept as close to the .1280 mark as is practical.

However, after a battery has been in use six months or a year this may be impossible, because part of the electrolyte or liquid contents may have been spilled and replaced with water, or some of the active material has dropped off the plates and lies in the jar as sediment where it holds a part of the acid so it cannot be returned to the electrolyte when the battery is recharged.

Consequently, if a battery has been charged until it gases freely for two or three hours and the electrolyte refuses to come up to .1280, it is well to add sufficient acid so that as the battery is used its specific gravity will not drop low enough to allow it to freeze.

This can be done by removing some of the electrolyte and adding sufficient sulphuric acid to bring it up to the required strength, or by mixing the acid with distilled water, a mixture reading about .1400, and using this instead of distilled water when the electrolyte becomes low. In mixing, always add or pour slowly the acid into the water—never the water into the acid or an explosion is likely to result.

CINDER AND CEMENT FLOORS.

For my cellar and garage I have laid a good dry floor which ought to serve equally well for a henhouse or other farm building.

Excavate ten to twelve inches below the top of the finished floor, level off and tamp.

If the house sets so that the ground slopes away from it, slope the excavation to a low point and from this lay a drain a short distance from the house, terminating in a pit filled with broken stone. Put a strainer over the pipe and a few broken stones on the inlet end. Fill in six to eight inches with engine cinders and tamp. For the top four inches mix six parts of engine cinders and one part of cement, add water and turn again until the mass is thoroughly wet but not sloppy. Then spread over the cinders and tamp. A good way is to place screeds and level with a straight edge, drawing the straight edge over the screeds. This must be tamped until solid but not so hard as to cause the concrete to disintegrate.

Finish the top with one part cement and two parts clean, sharp sand, working the mixture under the trowel until the top surface is smooth and the moisture has been brought to the surface.—R. C. N.

How Long is a Day?

If you met a man, and he casually remarked that he ate 315 meals yesterday, you would either be amazed at his appetite or take him for a hardened romancist. But the man may be from Spitzbergen, where they have a day three and a half months in length.

And on the whole it would be wise if one should undertake to do certain work to receive so much a day in payment, to understand just where the work is to be done, or one might have to labor eighteen and a half hours at Stockholm, if it happened to be the longest day of the year, or all the time from May 21st to July 22nd if in some parts of Norway.

In Petrograd the longest day is nineteen hours and the shortest five hours. In Finland there is a twenty-two-hour day. In London and at Bremen the longest day is sixteen and a half hours; at Hamburg and Dantzig seventeen hours, and at Washington about fifteen hours.

Too Much Economy.

Tom—"You got engaged last week, old chap, didn't you?"

Fred—"Yes, but that's all off now."

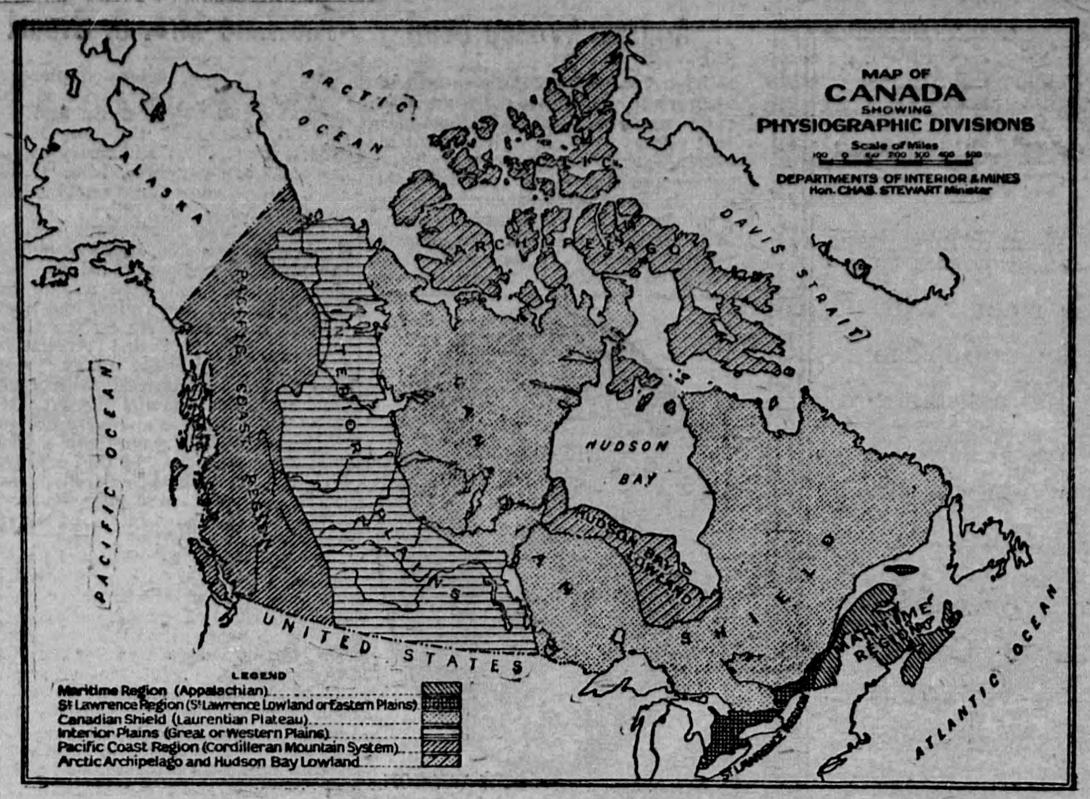
"Why—incompatibility of temper?"

"Not at all, rather the reverse. She suggested my practicing economy, and I started by getting her an imitation gold ring."

Free Verse.

"He's a writer of free verse, you say?"

"Yes, he's never been paid for a poem yet."



Studying Canada Geographically.

Unfortunately, to most readers the term "geography" has but an academic meaning. As a matter of cold reality, however, our national geography is the largest single factor affecting Canadian development. It is about as little academic as a mortgage. It is a bigger and more important business fact than the public debt. It is a permanent, fundamental factor touching our national development at every turn. To study and make known the physical property which the Canadian people own and have to develop is the general object of the Natural Resources Intelligence Service of the Department of the Interior.

Great credit is due the Geological Survey Branch of the Department of Mines for the work it has pursued in studying the physical geography of the Dominion. The accompanying map is a product of that work. It shows Canada in the light of its basic physical divisions—the only light in which one can intelligently study our economic geography or make any sound appraisal of the physical value and commercial possibilities of our national property.

The geography of Canada is the bedrock factor which fixes the value of the Dominion as a national property—as our means of national support and growth. And the intelligent development of the country requires above everything else a clear, broad grasp of its geography, of its physical nature and layout.

Canadian development has been and will continue to be greatly advanced by dozens of different forms of constructive public action. Railway building, immigration, industrial research, technical education, the collection of adequate data—these and countless other lines of public activity enter into the work of widening, strengthening, guiding or illuminating the course of national growth. But underlying all such constructive enterprise is the one basic fact that our national progress rests finally and always upon the geography of our national property. A thorough knowledge of the geography of the country is the cornerstone of any true appreciation of Canada's development possibilities and problems, and of any broad-visioned development policy for the Dominion as a whole.

Yet it is a fact that geography, as it affects the business life of the Dominion, is about the only feature of Canada which has not been studied in a broad-gauge way. Not one Canadian out of a hundred has anything more than a hodge-podge idea of the true character and real development value of Canada as a national property. Canadian geography has been studied along narrow, superficial lines. The study has been too much confined to showing just the artificial or the most obvious natural features of the country—the locations of railways, cities and towns, political boundaries, lakes, rivers, mountains and so on. This is, of course, one necessary phase of geographic work. But it does not touch the supremely important work of portraying the economic geography of Canada — the fundamental physical features which control the productive capacity of the property.

The narrow lines which the study of economic geography has followed in Canada has succeeded in giving almost everyone a fair superficial idea of the Dominion. Probably nine educated Canadians out of ten could sketch a fairly good, rough map showing the political divisions of the country by provinces and territories. Few Canadians, however, would ever recognize a map showing the great geographic regions which not only shape the whole course and character of the Dominion's economic development but actually create our transportation, tariff and most of our other major political questions.

HAVE AN IDEAL

An ideal in life is a wonderful asset to success. It is quite believable that a man who always thinks great thoughts about his life's work is almost beyond the possibility of failure.

The people who never seem to make good are those who try to get through in a slipshod fashion. Anything slipshod is an impediment and keeps us back. The people who have won through are those who have decided on the thing for which they will live and work; and, having decided, never permit that goal to be far out of sight.

A boy determines he will pursue a certain course in life, and he begins, say, to study for engineering. He will have to face many a setback; but if he is wise he will plod on, determined that, come what may, he will allow nothing to discourage him. He will study everything possible about his chosen profession and go forward with enthusiasm towards the prize he has in view. To such a youth there can be no failure; he will face the music, come what may. This is so throughout the whole world. The men who count are those who are wedded to their ideals and leave nothing undone that will help to gain their end.

Have you ever thought what it has cost to produce the world as we see it? What hurtlings and earthquakes and catastrophes and shocks have been experienced in order to make this world so beautiful? And we are given to understand that even in this matter the best is yet to be! The finale of Nature's wonderer is not yet. She still holds in her secret sway the wonders our children will come to look upon as commonplace.

And so in morals. ever believe that the world of men is getting worse. Let others speak of "the good old days" as they may, it still remains a fact that the best days any of us know are those that make up our lives to-day. If past days were good, let us rejoice with those who lived in them; but we must never believe it is true that there were better days than our own. Better people than ourselves may have lived, but the best, even in this matter, is yet to be.

Some people refer to the newspapers and suggest by the contents that men are no better than before. But remember, the papers record the unusual and extraordinary and that which is newsy and out of the way. People are better in living than formerly, and every discovery and effort to uplift men is another aid to the one increasing purpose that flows through all things.

In the walk of life we are called to do our best towards furthering the cause of a perfect and wholesome world; and the best way to do so is calmly and patiently to follow the gleam from the ideal that we have set for ourselves or others have set for us. Character is the factor that counts most in life.

We are here to laugh and be jolly! So long as we have the joy of life in us, we shall plod our way and every step will lead forward. The fluctuating life is dangerous. To be spasmodic is to degenerate. Discover the right road; then keep on keeping on!

Answer to last week's puzzle:

B	E	S	T		O	R	A		E	G	G	S
A	R	T		A	B	O	D	E		L	I	E
G	R	A	N	D	I	L	O	Q	U	E	N	T
S		R	O	D		E		U	S	E		S
	R		D	E	L		F	A	N		F	
L	O	T		R	A	T	A	L		P	R	O
E	Y	E	S		B	E	T		Y	O	U	R
T	A	X		M	E	D	A	L		T	I	E
	L		P	A	L		L	U	Z		T	
W		S	I	R		B		R	O	E		F
I	N	T	E	R	N	A	T	I	O	N	A	L
N	E	E		Y	O	K	E	D		T	H	O
S	O	P	H		B	E	E		D	E	A	R

A judge may be a man of few words but he is not always a man of short sentences.

New Dictator of Persia Was Unlettered Private.

Reza Khan Pahlevi has been called the Mussolini of Persia, but in ambition he apparently overleaps even the Italian dictator for he is said not to be content to remain as prime minister but to cherish hopes of founding a dynasty of his own to supplant that of the deposed shah.

Reza is the son of a peasant farmer and it is even now a debatable point as to whether the prime minister's academic achievements extend beyond the ability to write his own name.

His career he commenced as a private in a Russian Cossack regiment. Yet Reza Khan must have shown exceptional abilities since he rose continually in the esteem both of his superiors and his comrades. That was the reason why he succeeded in keeping together a handful of men after imperial Russia collapsed and his regiment was disbanded.

In February, 1921, Reza Khan, together with his soldiers, overthrew the government, appointing a prime minister, and selected himself as the minister of war of Persia. In October, 1923, he discarded the civilian cabinet and, with the aid of a second coup d'etat, assumed the premiership. Since that time he has been Persia's prime minister.

Reza Khan possesses much of that straightforward brutality which is the privilege of the incorrupt egotist. He is fighting for a centralized Persia because the expansive power of his ruling ambition demands the widening of his field of action. It is only incidental that while he is satisfying his primitively savage hunger for power he accomplishes the unification of the unruly tribes in a single national entity.

Reza Khan has an army such as Persia has not had for a long time. It consists of 40,000 soldiers. Reza pays them regularly, feeds and clothes them, thereby assuring for himself their loyalty and fitness for military action.

His personal courage, which is extraordinary, has helped him in retaining his hold over the troops.

In 1921 the Khorassan tribe rebelled. Reza Khan went into the enemy's camp, killed their leader and crushed the rebellion.

After despatching two other recalcitrant chiefs, Reza suppressed discontent among the Turkomans by turning loose upon them his regular army, equipped with tanks, flying machines, wireless stations and the other efficiency devices of modern military craft.

Our twin brother came to visit us this week. He lives clear across the continent. Goodness! how old the poor fellow's getting!

Not There Yet.

"There's a man I'd like to see in jail!"

"Why don't you go see him then?"

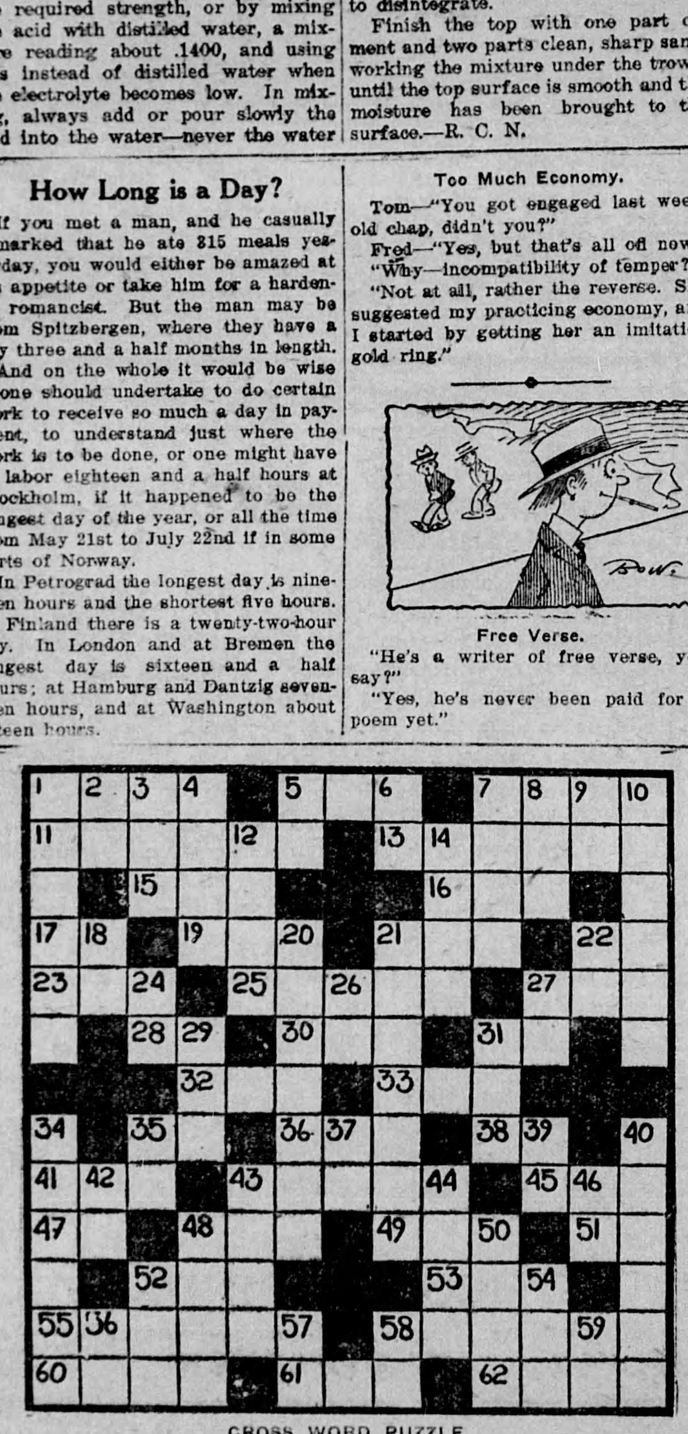
"He hasn't done anything he could be jailed for yet."

Keep Tab on Fish.

The Department of Marine and Fisheries has marked a considerable number of Atlantic salmon, by attaching silver tags to their dorsal fins, for the purpose of tracing the movements of these fish. A salmon that was marked and liberated off Burns point, Port Maitland, Yarmouth county, Nova Scotia, on June 11 of this year was killed in the Moise river, Quebec, in the early part of July. If this fish took the most direct route it travelled about 800 miles, but if it followed the larger indentations of the shoreline it travelled over 1,200 miles.

Spiders Lit Up.

Spiders that glow like fire-flies have been discovered in Central Burma.



CROSS WORD PUZZLE

Every number in the form represents the beginning of a word, reading either horizontally or vertically. If there is a black square to the left of the number, the word is horizontal; if above it, the word is vertical. The same number may of course begin both a horizontal and a vertical. The definitions for the correct words to fill the form are found below, with numbers corresponding to those on the form. Run through the definitions till you find one that you recognize, and put it in its proper place on the form, one letter for each white square. This will furnish several cross-clues to the words linking with it at right angles. Continue in this manner till the form is completely filled. If you have solved the puzzle correctly it should read both horizontally and vertically with words corresponding to the definitions.

Horizontal.

1. To cultivate, as land
5. A pet name for "Margaret"
7. Dregs
11. Place where bees are kept
13. The East
15. To raise or move with a lever
16. A period of existence
17. Credit (abbr.)
19. A pronoun
21. Sped
22. An exclamation of triumph
23. To bring forth
25. A track worn by passage through a wilderness.
27. To soak up
28. A place famous for a certain wizard (Fairy story)
30. A light carriage with one pair of wheels
31. A preposition
32. Frozen water
33. A wooden tray or trough for carrying bricks
35. Above
36. A negative
38. To perform
41. A quadruped
43. To utter harsh rebuke
45. A negative connective
47. Towards
48. A plaything
49. To utter quickly like a bark (slang)
51. A point of the compass
52. A French coin
53. An enemy
55. In a tidy fashion
58. Atmospheric disturbances
60. Spigots
61. To deviate from the right course
62. A list (Scotch)

Vertical.

1. A fixture for drawing a liquid from a container.
2. Associated Press (init.)
3. To tear
4. A girl's name
5. Belonging to me
6. To move
7. A ferocious animal
8. Even (poetic)
9. Half the width of an em
10. Strips of leather used as handles.
12. An Indian peasant
14. Actual
18. An ancient sun god of Egypt
20. Pressure as of necessity
21. Properly
22. A cry of surprise
24. A negative
26. A three-toed sloth
27. Street (abbr.)
29. A sudden sharp hissing or sibilant sound such as that of a flying bullet
31. To increase
34. A writing securing to an inventor the sole right to use his invention
35. You and me.
37. A Hawaiian bird
39. Upon
40. Part of the body
42. In such a manner
43. The animating or essential part of a human
44. Idiotic
46. A bone (anatomical)
48. Small children
50. A reservoir for water
51. The juice or fluid of a plant
54. Before
56. Each (abbr.)
57. An old form of "you"
58. Senior (abbr.)
59. A weapon.

It's a sure sign that winter is coming when you see Dolby taking the moth balls from his ear muffs. His flappers are very sensitive to the frost and his ——— is not immune.