RADIO EXPLAINED
INSTRUCTOR NEW YORK Y. M.C.A. RADIO SCHOOL

VOLTAGE ON PLATE CURRENT.

generator voltage in this direction

is reached, the plate current in-

creases to a maximum value After

the peak generator voltage is

passed this voltage decreased, the

grid becomes more and more Lega-

tive, and the plate strreus de-

creases until, when the generator

voltage is momentarily zer), the

grid potential has returned to its

normal value, as has also the pate

current. The generator their re-

verses its voltage and a negative

potential is applied to the grid. As

this negative generator voltage in-

creases the grid becomes more and

more negative than it was in its

normal condition, and the pate

current is reduced. When the peak

of the generator voltage in this

opposite direction is teached the

grid has a maximuo negative

charge and the plate turrent has

fallen to a minimum vilue, below

the normal. The generator volt-

age then decreases, and, with it,

the negative charge on the stid.

When the generator voltage is

again zero, momentarily, the grid

charge is again normal, as is also

It is thus seen that the plate cur-

rent rises and falls about a catain

hormal value in exact step with

the rise and fall and .eversa; of

generator voltage. The plate cur-

rent does not actually reverse its

direction of flow, but appears to

do so if the normal value is con-

sidered to be the criterios. In

other words, the plate current al-

ternates about a nor.nal aleady

value, but not about a zero value.

No grid current, however, flows at

any time, since the gr:o is at all

the plate current.

EFFECT OF ALTERNATING GRID

With a certain positive potential ;

on the plate and a cert.in carrent

tube a certain plate current flows

which may be called the normal

plate current. We will assume this

is not a saturation value, which

would be produced in the plate

were attracting electrons just as

fast as they were being entitled

from the filament, If we than ap-

ply a certain negative potential

constantly to the grid the plate

current will be reduced a certain

amount, and there will be a new

value of normal plate current. The

plate current may now be in-

creased or decreased accordingly

as the negative grid prtential is

either decreased or increased. The

negative potential applied to the

above, let us suppose that a gener-

ator of very small alteriating volt-

age is connected into the circuit of

the grid, so that this circuit com-

prises the tube space between grid

and filament, the grid battery with

its negative terminal connected to

the grid, the alternating vol.age

generator and the connecting

wires. Let us also assume that the

generator voltage never reaches

exactly the same value as the grid

battery voltage. When the gener-

ator applies a positive voltage to

the grid its constant negative po-

tential is reduced, but not wiped

out, even when the peak of the

positive generator prentia: is reached. As the grid becomes then

less and less negative the plate

current increases above its cormal

value, until, when the peak of the | times negative.

APPARATUS AND DEVICES

By RALPH BROWN, RADIO ENGINEER

With conditions normally as

grid may be called the normal grid

potential.

through the filament of a va uum

LOOL STUDY SPORTS

THE JUNIOR BRITISH WHIG

BIGGEST LITTLE PAPER IN THE WORLD

HUMOR PLAY WORK

THE SWIMMING CLASS - LESSON IV

as fast a stroke as the crawl, but on you can do it easily.



to learn. Therefore, it is a good idea | this-that is, breathe on the right side | for the beginner to learn it, and take -if so, you can do it. Most good ! the crawl later, as we will do. If you practiced the suggestions in however. the preceding lessons, you will have an easy time in learning to swim the Remember that your body should not trudgeon. Remember you were told roll as it goes through the water, nor to lie flat, face under the water, and should the neck be strained back. In kick your legs. That is the principle

of the stroke-as far as the footwork is concerned. Continue to practice it until you have thoroughly mastered it. Now begin on the arm movementthe same movement that you practiced on dry land. Don't try to go too fast;

time yourself so that you make about swimming, the head should be in a poone stroke a second; And be sure that your body is per- about to the nose. fectly straight out in the water. Do not bend at the waist-you will sink

Of course you will not be able to go very far, because, if you are following directions, your face will be under the water. Therefore you can go on only as long as you can hold your breath. But if you can go that far-swimming | swimming lessons will take up the all the time-you will be getting along | crawl. This is the stroke which is

It is best not to try to breathe until

For all-around swimming, the trud- | you can get the stroke down to perfecgeon, or double overarm stroke, is tion. Many embryo swimmers have | When 'twas nice and cool; probably the best stroke there is. It the fault of straining their bodies, has the advantage of speed, and yet is when they should relax. The beauty practically untiring, which makes it of good swimming is its grace and advantageous for either sprint or dis- ease; therefore you should practice. tance swimming. Of course, it is not | with your face still under water, until

Now try breathing. When your right arm is coming down in the water, and your left over your head in the air. turn your head slightly to the left, so that the mouth is out of water. Take in a breath, then as you are completing the stroke, exhale through the nose in the water. When the left arm comes forward again, repeat. Per-It is not so difficult haps you will find it easier to reverse swimmers breathe on the left side.

All that remains now is practice.



sition so that the water comes just

It is best now to ask some good swimmer to correct the faults you are certain to have. That is sure to get you into form more quickly.

The fifth article in the series of used by most speed swimmers.

YESTERDAY'S PUZZLE ISI CATFISH PIKE

CARP

HERRING

Sickening Calomel

More Agreeable

Calomel and Blue Pills are not

used as they once were. When the

head aches, when the stomach is up-

set, when the liver is not working

right, don't resort to harsh calomel,

use a pleasant agreeable remedy

like Dr. Hamilton's Pills. Being

largely vegetable in their composi-

tion, Dr. Hamilton's Pills are ex-

AGENCY FOR ALL

OCEAN STEAMSHIP

LINES

PHONE 99.

TRANSATLANTIC STEAMSHIPS

St. Lawrence Raute, Season 1922 Sailing Lists Acw Ready

C. S. Kirkpatrick

ANCHOR

ANCHOR-DONALDSON

**Calls at Moville (Ireland)

en route to Liverpool.

Montreal to Glasgow

Montreal to Liverpool

fune 10 July 15 Aug. 19 Albania

June 27 July 29 Sept. 2 Tyrrhenia

Montreal to Plymouth, Cherbourg

June 17 July 23 Aug. 26 Andania

N. Y. to Queenstown and Liverpool

June 22 July 20 Aug. 31 Scythia

N. Y., Cherbourg & Southampton

ine 13 July 4 Aug. 1 Aquitania

Boston - Liverpool - Queenstown

N. Y., to Glasgow (vis Moville)

BOSTON TO LONDONDERRY

*Sails from Boston, June 16

une 15 July 13 Aug. 17 Carmania

Aug. 12 Sept. 16 Oct. 14 Ausonia

- - 36 Clarence Street

NARD

the Old Country.

Open day and night.

Medicine Described

Not Favored.



The Marfleet Lectures, 1921, by Sir

out all impurities and wastes. No remedy is so well adapted for general family use. For constipation and bowel trouble. Dr. Hamilton's constitutional development of Can- treatise on Canadian Government Pills can't be improved upon. Good | ada from 1760 to the present time. | and the characteristics of the people. for the young, the old, the sick, the The first lecture deals with constitu- In one of the chapters an interesting well ones. The benefits of Dr. Ham- tional development from the session comparison is made between governilton's Pills are manifold. Needed to confederation; the second from ment in the United States and Canand useful in every home. 25c., all confederation to the world war, and ada.

afterwards. GRAND TRUNK SYSTEM Special attention given your family tween confederation and the world ience to the law as manifested in or friends going to or returning from war. General conference between Canada, For information and rates apply to J. P. HANLEY, G.P. and T.A.G.T. Ry., cess, and much of the governing "This much may be said: Canada is power of the United Kingdom, be-

> esting account of more recent events. The administration of the Canadian forces as an automonous body is referred to, as is also the insistent and cific and enlightened civilization." successful demand of British dominions for individual recognition at the

Referring to the question of independency as advocated by a few, Sir Robert Borden affirms that Canada will find her most commanding in-June 16 ** July 14 Aug. 11 ... Saturnia fluence within the British common-The book closes. June 30 July 28 Aug. 25 Cassandra Sept. 15 Oct. 13 Nov. 10 Athenia with an appeal for some action that will save civilization frm the horrors of another world catastrophe and expresses the view that in the united

ECZEMA ON FACE AND HEAD

July 1 Aug. 5 Sept. 3 Antonia round pimples which contain an tremely irritating fluid. These break and subsequently a crust or scale is formed and the intense burning, itching and smarting, especially at night or when the part is exposed to relief is gladly welcomed

July 18 Aug. 15 Mauretania and no remedy like. 11 Aug. 8 Berengaria BURDOCK BLOOD BITTERS N. Y., Ply., Cherbourg and Hambourg June 17 July 29 Aug. 31 Caronia July 1 Aug. 3 Sept. 9 Saxonia

the itching, stinging and burning. and promotes healthy healing. June 28 July 26 Aug. 23 Samaria June 14 July 15 Aug. 25 Algeria June 24 July 22 Aug. 19 Columbia 9 Oci. 7 Cameronia consulted several doctors, and tried

LIVERPOOL AND GLASGOW Assyria until a friend advised me to try Bur Aug. 8 Elysia dock Blood Bitters, and after I had *Cargo only to Glasgow N. Y. to MEDITERRANEAN

Por rates of pessage, freight and further particulars apply to local agents or. THE ROBERT REFORD CO., LIMITE from this terrible complaint. GENERAL AGENTS SO KING STREET BAST TORONTO, ONT.

Wish I hadn't played along Wouldn't have flunked my history And be in summer school; Wouldn't be sitting on the porch All by myself at home, Head a-nodding while I read How Caesar

THE SHORT STORY, JR.

SUMMERTIME STUDYING

Conquered Rome.

Fellows going by to fish Heller, "Come along!" When I shake my head they stop To ask me what is wrong. Then they're moving on again, While I fret and stew. And my head is swimming 'round

> Fourteen Ninety-two.

Grandest kind of day to swim-Sunlight on the creek. Paddling 'round so lazy that You hardly even speak. That's the sport for summertime. Might as well be dead As sitting here a-reading 'bout The things That statesmen

Looks inviting on the grass, Like to stretch and roll. Can't remember those old dates, And names to save my soul. Bluejay mocking in the trees; Guess I'll hit him once. Sounds just like he says to me, "Goodness, What a

Dunce!"

First year student in high school (looking at drinking fountain): "That is a heck of a thing. No soap or

"That boy has a studious look." "Sure he has! That's on account of the pupils in his eyes."

Physiology Teacher: "How many ribs have

Sammy: "I don't know. I'm so ticklish I never could count 'em." Where He Studied English Teacher: "Did you study

your English last night, Harry?" Harry: "Oh, yes. An hour and a Teacher: "Well, the next time you

study take your book home. You left on my desk all night."

CANADIAN CONSTITUTIONAL STUDIES

Robert Laird Borden, G.C.M.G., D.C.L., LL.D University of Toronto, Press 163 Pages. Price \$1.00.

tremely mild, yet they surely flush dealers, or The Catarrhozone Co., the third during the world war and The writer is very appreciative of

developed from military dictatorship tional faults and rebuke unscrupulto the status of a crown colony and ous politicians. His criticism, howsubsequently how it becomes a de- ever, is always characterized by sympendency, having representative in- pathy and is constructive in its outwhich Canada gradually ascended to ute to the strict application of crimnationhood in the fifty years be- inal justice and the habit of obedrepresentatives of Canada and the .The closing lines of this able pro-United Kingdom hastened this pro- duction are well worth quoting:came theoretical and indeed was re- her people, by their intelligence and

peace conference.

Take it internally and it gets at Apply it externally and it takes out

Mr. J. Sage, 215 Princess Avs., hopes as "a writer of very beautiful skill. Vancouver, B. C., writes: - "Having suffered with eczema on the face! and head, for the last five years, J various kinds of salves and lotions but I derived no benefit from any of them. I did not know what to do used two bottles I began to get bet-

B. B. B. put up only by The T.

peoples there lies the peace of the future. The references and explanatory notes at the end of the book are rery appropriate.

> CANADA AN ACTUAL DEMOCRACY

By the Right Honorable Viscount Bryce, O.M., P.C., D.C.L., F.R.S. Toronto, the Macmillan Company of Canada Limited. 54 pages. Price \$1.00.

We are under a debt of gratitude These three lectures are an admir- to one possessing the diplomatic exable introduction to the study of the perience of Lord Bryce for this

the dominion, but at the same time The author shows how Canada has does not hesitate to point out our nastitutions. He shows the steps upon look. Lord Bryce pays a fine trib-

well prepared by the character of whatever problems the future may The final chapter gives an inter- bring, finding remedies for such defects as have disclosed themselves in her government, and making her material prosperity the basis of a pa-

British Novelists: Second Flight. vigorous and free in their passions and adventures." Ford Madox Hueffer, quoting Pushkin, calls the leading group of young British novelists of today-writers such as Frank Swinnerton, D. H. Lawrence, Katherine Mansfield, Wyndham Lewis, Clemence Dane, Dorothy Richardson and James Joyce. The gractice of the short story as an art, which once engaged such men of genius as Kipling and Wells, Mr. Hueffer now finds in abeyance except for the work of Miss. Mansfield, whose collections "Bliss" and "The Garden Party" have lately been published in this country. Although he traces Mr. Swinnerton's iterary descent from Gissing and Miss Dane's from Henry James, he regards them as assaulting the "Mod-

composed English," Mr. Hueffer's essay in the July Yale Review will appeal to readers who like to keep he young novelists who "are going

on to the new adventures." THE RYERSON ESSAYS

Milburn Co., Limited, Toronto, Ont. | eminently fitted for private study, | Suppy as can be.

A RADIO RECEIVER AND LIBRARY LAMP COMBINED The person who wishes to combine a radio receiving set with a library lamp and "camouflage" the receiver when it is not in use

is now able to do so. As shown in the illustration, 'he radio receiving instruments are mounted upon a small table and beneath it. Only the vacuum tubes and cattrol knobs show above the horizontal panel which forms the table. The gear comprises a tuner, vacoum

"A haughty and proud generation,

tube detector, two stage amplifier and a loud speaker. The hor, of the loud speaker is very novel, in that it is inside the lamp base. There are feet which raise the pedestal a few inches above a table, so that the sound can escape The receiver has a wave leagth range of 150 to 3,000 meters, which is quite sufficient for all purposes, Tuning is very easily accom-

plished. This combination affair is built of solid copper and rinished in bronze, silver or gold. The silk lamp shade is arranged on a : name with a hinge, so that it can be lifted up and held in position by a supporting arm. When it is no longer necessary to adjust the receiver, or when the receiver is not in use, this shade may be let down, so that it is in possible to see any of the radio equ'pment.

As a lamp the device is indeed beautiful. The shades may be secured in color combinations to narmonize with the interior decorations or to contrast with them if desired. The lamps are placed beneath the radio set and shaded by the silk fringe which haugs down. Now that our telephores are be-

ing camouflaged by ladies with flaring skirts and otherwise covered up, it is quite probable that a camouflaged radio receiver will appeal to a number of people who object to the radio receiver in its customary cabinet. A Herald-Sun Feature.

Will readers interested in these radio articles kindly communicate with the editor by mail?

placed by what was purely constitu- their law-abiding habits, to face they are also prepared for general distribution, as their popular style and low cost well testify.

> The first series of the Ryerson Essays is entitled "Modern Misbeliefs' and contains six essays on Russellism, Premillennialism, Christian Science, Mormonism, Spiritism, etc., by scholars of outstanding ability. Other series are in course of preparation. 'John Wesley and Methodism,' "Christian Fundamentals," "The Permanent Value of Prophecy," structive Social Studies," "Modern Educational Problems," etc. Altogether fifty essays are in course of immediate preparation.

> > THE RAGGED EDGE.

By Harold McGrath, Garden City, N. Y., and Toronto. Doubleday Page & Company, 313 Pages. Price \$1.

This is a very delightful romance and will add to the splendid reputation of Mr. McGrath. Ruth Enschede, charming unsophisticated girl brought up in the islands of the sea ern Position" from a common angle, far from the artificialities of modern strong heat, is almost unbearable and Of Wyndham Lewis he writes: "In civilization, is on her way to Amerthe discussions, Mr. Lewis shows him- ica, which to her imagination is a There is only one way to get relief self an extraordinarily great artist. | veritable wonderland. She arrives at not, heaven knows, in what his char- Canton and has all sorts of advenacters say, but in the rendering of tures, picking up information from their temperamental and physical re- fellow-travellers regarding the unactions one upon the other. Mr. Law- reasonable demands of modern conrence is a great realist_except when vention. Ah Cum, the sphinx-like he is recording conversations" Of Chinaman, acts as a guide, and ori-James Joyce, Mr. Hueffer has high ental life is described with artistic

The kernel of the story is when Ruth meets Howard Spurlock, foolish young fellow aspiring to be an author. Howard who is a fugi- destroy all diseased conditions in the tive from home, having stolen several | breathing organs. It can't fail to thousand dollars from a stern aunt. He becomes desperately ill and The Ryerson Essays were devised despondent, and Ruth tenderly or throat by means of medicine takter and now after taking eight bottles for the purpose of providing precise nurses him from the ragged edge of en into the stomach. There is no I have not even a blotch on me. I and ready information on questions death to life and hopefulness. The sufferer from a grippy cold or any highly. I hope you will make full ance. These Essays are adequate, au- ard's gifts as an author obtain recog- Catarrhozone, which is employed by use of this recommendation for the thoritative and timely. They are prepared to meet a definite need, and account of reconciliation with the therefore possess a practical as well stern old aunt when everything comes as a scholarly value. While they are out all right and everybody is as Sample size 25c.; all storekeepers or

News From Camden East. June 7 .- Mrs. W. Loucks entertained a few of her friends to tea on Wednesday evening of last week. Mrs. John Beck, Merritton, Ont., called on several of her old friends on Thursday and Friday last. R. J. Oster and family have moved into their new home. A variety shower was tendered to Mr. and Mrs. Jackson on Friday evening. Mr. and Mrs. E. C. Skinner and two children, Toronto, have moved into their new home, formerly owned by Mr. Oster. Mrs. S. Brien has opened up an ice cream parlor for the season. The Ladies' Aid held their monthly meeting at the home of Mrs. W. Perry on Tuesday afternoon. Mrs. Sherlock gave a birthday dinner on Tuesday to several of her friends. It being the eighty-second anniversary. All wish her many more happy birthdays. Miss Hutton, of Toronto, is visiting her sister, Mrs. Clifford Skinner. The W C.T.U. met at the home of Mrs. L. Hartman on Tuesday evening. Loucks has returned from Parham.

The Victorian Order of Nurses for Canada is preparing to broaden its usefulness, and will discuss plans for greater activities.

Liniments Won't Relieve Pain Between the Eyes That pain is not rheumatism or

neuralgia. Many folks think so-it is due to Catarrh, plain ordinary Caderful invention that is daily fixing up chronic cases of weak throat. bronchitis and catarrh. Every breath through the Inhaler is laden with soothing, healing substances that help, because it goes where public men throughout many foreign lands. Large size lasts two months, and costs \$1.00. Small size 50c. ine Catarrhozone Co., Montreal.

GOOD PAINT PRESERVES

especially when it is our shingle stain. It makes wood shingles last much longer and therefore your roof is better and costs you less to maintain. Our stains, varnishes and paints are used by those who know.



NEW SKIFFS and FISHING BOATS FOR SALE H. KNAPP, BARRIEFIELD

HOTPOINT APPLIANCES

For Wedding Gifts. The tastefully, useful present. See "THE ELECTRIC SHOP" F. GRACE Phone 1545 115 Brock Street

Modern Optical Science Embraces Two Functions:--

FIRST, a thorough, accurate examination of your eyes. SECOND, the prescribing of correct glasses best suited to your individual features.

We perform this DOUBLE SERVICE.

R. ARTHEY, R.O.

Kingston's Up-to-date Optical Parlor . 148 Princess Street.

"And After the Theatre, Let's Drop in at the Royal" After an evening at the theatre, the movies or the con-

cert, a visit to the Royal will bring your evening's pleasure to a happy climax. Motorists, too, enjoy a late-hour snack after a joyous ride

over cool country roads. From early dawn to the witching hour, the Royal hap-

pily serves the best of things to eat and drink Obey that impulse and come!

ROYAL CAFE 157 Princess St.

SUGGESTIVE PRESENTS FOR JUNE BRIDES

Pretty Electric Table Lamps, Boudoir Lamps, Electric Irons, Toasters, Curling Tongs, Percolators, Vacuum Cleaners, Grills, Washing Machines.

H. W. NEWMAN ELECTRIC CO.

Phone 441.

167 Princess Street

Special Sale of Folding Ironing Boards

No housewife should be with out one of these convenient FOLDING IRONING BOARDS. They are strongly made of fine grained white wood with hardwood frame and when set up are unusually rigid and sturdy. Easy to fold up and put in a



small space when not in use. A most attractive offering at \$4.20 Each complete with sleeve board. Regular price of this board is \$5.75.

Lemmon & Sons 187 PRINCESS STREET

An Announcement

We wish to announce that we have taken the local agency for-

Edison Phonograph and Records

(Successors to J. M. Greene Music Co.)

See us for all the latest Records. We also carry a complete stock of Brunswick Phonographs and Records.

Musical Instruments of all kinds.

THE SONG SHOP

n. a. SIEVENSON PHONE 979W. 216 PRINCESS ST. (Next to Grand Opera House)

Patient Went Insane and Sergeant Lees escorted him to A patient in the Smith's Falls Brockville. He was an Athens i Dublic hospital suddenly went insane man.