

Professional.

A. M. ROSEBRUGH, M.D.
EYE and EAR SURGEON.
137 CHURCH STREET, TORONTO

CHAS. LENNOX & SON,
DENTISTS.
CONFEDERATION LIFE BUILDING
COR. YONGE & RICHMOND,
TORONTO.
Telephone, 1846.

MR. J. D. A. TRIPP,
CONCERT PIANIST and TEACHER,
Only Canadian pupil of the great composer and
pianist, MOSKOWSKI. Concert engagements and
pupils accepted.
TORONTO CONSERVATORY OF MUSIC
AND 20 SEATON ST.

MR. W. E. FAIRCLOUGH,
(Fellow of the Royal College of Organists.)
ORGANIST and CHOIRMASTER ALL
SAINTS' CHURCH, TORONTO.
Teacher of Organ and Piano Playing and Theory
Harmony and counterpoint taught by
correspondence.
Toronto College of Music, and 6 Glen Road.

MR. W. O. FORSYTH,
Teacher of piano playing and composition. Pupil
of Prof. Martin Krause, Prof. Julius Epstein, and Dr.
S. Jadassohn. Modern Principles—Hand Cultivation
(technic) and musical intelligence developed simultane-
ously. Pupils are expected to study diligently and
with seriousness.
Toronto Conservatory of Music, and 112 College St.
Studio for private lessons, room 2, Nordheimer Build-
ing, 15 King St. E.

WALTER H. ROBINSON,
SINGING MASTER AND CONDUCTOR
GIVES INSTRUCTION IN VOICE PRODUCTION
Pupils received for study of Musical Theory.
Open to accept engagements as Tenor Soloist at
Concerts.
Concerts directed.
Studio—Care R. S. WILLIAMS & SON, 143 Yonge St.

MRS. & MISS DRECHSLER-ADAMSON,
VIOLINISTS.
Will receive a limited number of pupils at
their residence, 67 BLOOR ST. EAST.

J. LEWIS BROWNE,
(Organist and Choirmaster Bond St. Cong. Church)
CONCERT ORGANIST

Pupils received in Organ, Piano, Harmony and
Instrumentation. 130 MUTUAL STREET.
Reception hours 3 to 5 p.m. daily.

DONALD HERALD, A. T. C. M.,
TEACHER OF PIANO,
Conservatory of Music, or 271 Jarvis St.,
Toronto.

MR. A. S. VOGT,
ORGANIST and CHOIRMASTER JARVIS STREET
BAPTIST CHURCH.
Instructor of Piano and Organ at the Toronto Con-
servatory of Music, Dufferin House and
Moulton College.
Residence - - 605 Church Street.

MR. V. P. HUNT
Pupil of Dr. Carl Reinecke, Herr Bruno Zwint-
scher, etc., of Leipzig, Germany. Pianoforte teacher
at the Toronto Conservatory of Music, Musical Direc-
tor Oshawa Ladies' College, Organist Zion Congrega-
tional Church. Teaches Piano, Organ, Harmony.
Address Toronto Conservatory of Music
Or Residence, 104 Maitland Street.

MISS DALLAS, Mus. Bac.
Fellow of the Toronto Conservatory of
Music, Organist Central Presbyterian Church. PIANO,
ORGAN and THEORY. Toronto Conservatory of Music
and 99 Bloor Street West.

A. McLaren, Dentist
243 Yonge Street,
First Class \$10.00, Sets teeth for \$5.00.

SCIENTIFIC AND SANITARY.

A new form of phonograph recently de-
scribed before the Berlin Electro-Chemical
Society by Herr A. Koeltzow (*Nature*),
July 19) records on a cylinder made of a
kind of hard soap. Each cylinder costs only
about seventy-five cents and can be used
for 250,000 words, owing to a device for
removing a thin layer from the surface when
it has been completely covered. Thus the
cost does not exceed that of the paper re-
quired to write an equal number of words,
and the instrument will doubtless be widely
used, at any rate in countries where exist-
ing patent rights do not interfere with its
introduction.

The experiments of Debedat, on the
application of electricity for stimulating the
nutrition of the muscular system, are de-
scribed in a recent paper abstracted in the
Electrical Review, London. The results
show sometimes a gain of 40 per cent. in the
weight of the muscle, due to application of
the current in a particular way, while there
was either no gain or else a positive loss for
other methods of application. His conclu-
sion is that an induction coil should be
used, and the periods of contraction and re-
pose so timed as to approximate to the con-
tractions of a muscle during rhythmic
gymnastic movements. Prolonged contrac-
tion, as practiced by many physicians, he
considers extremely hurtful.

Dr. Maillart (*Revue de Médecine*, Paris,
March 10) favors the treatment of typhoid
with large quantities of water. The patient
should receive from five to six quarts of
water daily during the febrile period. The
results are progressive subsidence of the fe-
brile process, disappearance of the dryness of
the tongue, and a marked sedative influence
upon the nervous, circulatory, and renal
phenomena, probably owing to the oxidation,
solution, and elimination of the toxins pro-
duced in the progress of the disease, and also
of the dejecta. This mode of treatment
has no noteworthy influence upon the
course, the duration, or the evolution of the
disease, is not attended with unpleasant
complications, and is easy of application.

In a communication to the London
Zoological Society, Mr. Lindsay Johnson
describes the results of his examination of
the eyes of one hundred and eighty domes-
tic cats, as well as those of all the accessible
wild members of the cat family. He con-
cludes that the natural shape of the cat's
pupil is circular, though under various de-
grees of light it assumes every shape from
the circle through all kinds of ovals to a
straight vertical line. The younger the cat,
the greater the tendency to become a point-
ed oval in ordinary light. In the smaller
Felidae, brilliant sunlight causes contraction
to a line; in the larger, sometimes to a small
circle. When a cat is suddenly alarmed,
the pupil momentarily dilates; in sleep, it
always contracts.

Experiments by Professor Clowes, of
Nottingham, England (London Royal Soci-
ety, May 10), shows that the effects of car-
bonic acid on a flame is very different ac-
cording as the flame is fed from a wick or
with gas. The percentage of gas necessary
to put out the flame in the first case is al-
ways nearly the same, being for instance 14
for alcohol, 15 for paraffin oil, and 14 for a
candle, but in the second case there is wide
variations, 58 per cent. being required to
put out a hydrogen flame, 10 for methane,

Educational.

BISHOP
STRACHAN
SCHOOL
FOR
YOUNG LADIES
Michaelmas Term Begins Sept. 5th.
Full English Course
Languages, Music
Drawing, Painting
etc. For Prospectus
etc., apply to
MISS GRIER
LADY PRINCIPAL,
WYKEHAM HALL, TORONTO

UPPER CANADA COLLEGE
(FOUNDED 1829.)

The Examination for the W. H. Beatty Scholar-
ships will be held on Oct. 2nd 3rd and 4th.
Fifth Form Scholarship, cash value \$150
" " " " " " 100
These Scholarships are open to boys from any
school. The Examinations are unconnected with the
College.
Autumn Term begins Sept. 4th. For circulars
giving full information regarding Scholarships, course
of study, etc., apply to
The PRINCIPAL, U. C. COLLEGE,
DEER PARK, TORONTO.

W. J. McNALLY,
Late of Leipzig Conservatory of Music.
Organist and Choirmaster, Beverley Street Baptist
Church, Teacher of Piano.
Toronto College of Music or 32 Sussex Avenue.

MR. H. M. FIELD,
PIANO VIRTUOSO.
Pupil of Prof. Martin Krause, Hans von Bulow and
Reinecke, solo pianist Albert Halle concerts; Richard
Strauss, conductor, Leipzig; pianist of the Seidl
orchestral tour in Canada, 1892; by invitation of Theo-
dore Thomas, representative Canadian solo pianist at
the World's Fair, Chicago. Concert engagements and
pupils accepted. Address—105 Gloucester Street, or
Toronto College of Music.

Private Tuition in a Clergyman's
Family.

The Rev. A. J. Reid, Rector of Uxbridge, 40 miles
from Toronto, G. T. R., is desirous of undertaking the
education of two boys between the ages of nine and
twelve. The boys will have careful training with all
home comforts, in a healthy and attractive part of the
country.
Reference kindly permitted to the Lord Bishop of
Toronto.
For particulars, address The Rectory, Uxbridge,
Ont., or E. A. Meredith, Esq., LL.D., Toronto General
Trusts Co., Toronto.

26 for ethylene, and 33 for coal-gas. The
proportion of nitrogen necessary to extin-
guish a flame is in all cases higher than that
of carbonic acid. The wick-fed flame dies
away by dwindling; the gas flame, on the
contrary, grows larger and paler until it
goes out.

Will the storage battery ever realize the
high hopes that were once entertained of it?
Authorities have not yet ceased to differ on
the subject. Mr. W. W. Griscom, whose
interesting paper about these batteries,
read before the American Institute of Elec-
trical Engineers, is printed in the *Electrical*
World (New York), brings out the point
that our knowledge of the chemical changes
in charging and discharging is still incom-
plete, and that the internal conditions are
constantly altering in a complex way never
before suspected. Plates with precisely the
same history, and in exactly similar situa-
tions in a battery, may give off currents
varying as much as 30 per cent. Much of
the difference of opinion among experts as
to the efficiency of the batteries is doubtless
due to causes such as these, and to the fact
that batteries are often worked far beyond
their capacity, and that batteries are rated
as high as possible, instead of well within
a margin of safety, as in the case, say, with
steam-engines.