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NOT STRENGTH TO WALK.

Leba C. Schilling, Peninsula-
Que., writes:—"I had suffered
e time with a weary feeling.
ot strength to walk about. I
ot walk even a short distance
being out of breath. I could
rest in anything, as I thought
could do me any good.
recommendation of a friend
ded to try Dr. Williams'
ills. I had only taken them
hort time when I noticed a
improvement. I was strong
to walk a long distance with-
sting, and felt better in every
I would recommend Dr. Wil-
Pink Pills highly to all other
s, and think they will be sur-
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ured paralysis, locomotor
all diseases arising from
chronic erysipelas, con-
neral muscular weakness,
the back, nervous head-
ladies' weaknesses and
a purgative. Sold by all
ts a box or six boxes for
ns' Medicine Co., Brock-

e offered be sure you ask
ale People.

ICAGO AND GRAND TRUNK

cles of Incorporation For the Consolidated System Have Been Filed.

nsing, Mich., Nov. 22.—Articles of
rporation for consolidation of the
her Chicago & Grand Trunk railway
em in Michigan and Indiana were
with the secretary of state to-day.
corporations consolidated are the
t Huron & Indiana Company, of
higan, and the Indiana & Illinois
lway Company, of Indiana, which
organized by the purchasing com-
tee of the road after it had bid on
road at the receiver's sale. The
e of the new corporation, which
a capital stock of $6,000,000, is the
nd Trunk Western Railway Com-
y.

ARRIVED.

iser Wilhelm Der Grosse Reaches Port Two Days Late.

ew York, Nov. 22.—The North Ger-
n Lloyds steamer Kaiser Wilhelm
r Grosse arrived to-day, 40 hours over-
e.

IN CHINA.

port That Chinese Have Repulsed German Expedition.

London, Nov. 23.—Nine ministers, says
e Pekin correspondent of the Morning
st, wiring Wednesday, have written
ting letters denouncing the punishment
ict and declaring that Tung Fu Hsiang
ust be punished. Dr. Mumm von
hwartzenstein told Li Hung Chang
at the foreign powers must themselves
nish the guilty officials. It is report-
that Chinese troops have re-
lsed a German expedition, but no de-
ils have been received.

MANCHESTER RACES.

ord Cadogan's Filly Wins in First Day Event.

London, Nov. 22.—At the first day's
acing of the Manchester meet to-day,
he Thursday plate of 103 sovereigns
as won by Lord Cadogan's black filly
n Figil, by Saraband, out of Vivan-
iere.

Weighing the Sunshine.

Prof. S. P. Langley's New Invention, the Bolometer, Described in the Globe-Democrat.

Washington, D.C., Nov. 1.—Sun spots have not been regarded with much respect by astronomers hitherto, because of the doubt as to whether they really exert any influence over the weather. Undoubtedly, however, they will receive more attention in the immediate future than ever before, on account of the remarkable fulfillment of the prophecy of a well-known astronomer as to the summer that is just past. He gave warning nine months ago that the summer of 1900 would be one of unprecedented heat—that August would be even hotter than July, and that September would break the thermometric record. These forecasts having been fulfilled, it remains to be seen whether this scientific authority will be proved correct in his future vaticinations, which are to the effect that next summer will be hotter than the last, and so on progressively until 1904, when the maximum of torridity will be reached.

The astronomer quoted derives his data from the observation of sun spots, which, as well as can be ascertained, are vast vortices of fire on the surface of the solar orb. They are so tremenduous in point of size that one of the smallest of them could swallow a planet like the earth in a twinkling, without showing any unusual signs of disturbance. It is known that these sun spots are hotter than the rest of the surface of the celestial luminary, and something more definite about them is likely to be ascertained before long by the application of the new science of astrophysics, and through the aid of that marvelous instrument called the "bolometer," invented by Prof. S. P. Langley, secretary of the Smithsonian Institution.

"Astrophysics is a new branch of astronomy," says Prof. Langley. "Its object, in the case of the sun, for example, is not to mark the place of that luminary in the sky, but to find out how it affects the earth and the wants of man upon earth; how its heat is distributed, and how it influences not only the seasons and the farmers' crops, but the whole system of living things on our planet. For it has lately been proved that, in a physical sense, the sun first literally creates all animals and plants, and then modifies them in every conceivable way.

"We have found that the sun accomplishes these marvels without yet knowing in most cases how it does so. We are sure that if we could acquire this knowledge, it would form a scientific basis of meterology, and enable us to predict the years of good or bad harvests. What we need to learn is just what the nature of the influence of the sun upon sublunary affairs is, and the bolometer is being utilized to help us gain this knowledge."

If you will hold a glass prism so as to let a beam of sunshine pass through it you will find that it throws upon a blank wall or screen a beautiful rainbow-like "spectrum," with a band of red at the lower end and a band of violet at the upper. This is the result of breaking up the white light of the sun into its component hues. But it has been ascertained that the spectrum aforesaid represents only a part of the rays contained in the sunbeam that passed through the prism, because the human eye, being an imperfect organ, is unable to distinguish what is below the red and above the violet. Beyond both extremities of the visible "rainbow" are regions of unknown colors such as no man has ever beheld.

What these invisible colors may be like nobody can imagine. It may be that, though unseen by us, some of them are perceptible to certain other animals, just as some sounds perfectly audible to certain insects are unheard by the keenest human ears. It is possible for man, however, to make an instrument with nerves more sensitive and senses more delicate than his own, and such an instrument is the bolometer. By its aid Prof. Langley has explored these mysterious regions of unseen colors, mapping them in detail. Taking the visible spectrum at a length of 3 feet, he has traced the path below its red, and for a distance of 40 feet.

In the region below the red most of the heat rays of the sun are gathered. In fact, three-fourths of the entire heating energy of the solar orb is concentrated in that visible area, which may thus be said to have a controlling influence in the growing of the farmers' crops, as well as in the creation and development of all other living things on earth. Up beyond the violet end of the spectrum on the other hand, are assembled most of the chemical rays, upon which the photographer is obliged to depend for the pictures he makes with the great artificial eye called a camera.

It is the dark region of invisible heat-rays below the red that has so much to do with the weather. If its mysteries were understood, the daily forecasts would no longer be mere guesses, but certainties, at least approximate, even for a long time ahead. Above the violet, where the chemical rays are gathered, is a cold area, the rays conveying no heat that is appreciable. But the part of the spectrum beyond the red is many times as long as that beyond the violet, and the discoveries to be made by exploration are probably far more interesting.

The present United States Astrophysical Observatory is located immediately behind the Smithsonian Institution. It is a temporary frame structure, designed merely to accommodate for a while the complicated mechanism of the bolometer. On the outside of it is a massive instrument called a "siderostat," which consists most importantly of a disk-shaped mirror. This mirror is controlled in such a manner by clockwork as to present at all hours its face to the sun, reflecting a sunbeam directly into the mouth of a long tube. The tube contains a lens, which throws the beam into the building wherein the main apparatus is housed.

The beam, having entered the building passes through a great prism, which is made not of glass, but of rock-salt. For it must be explained that glass is opaque to the rays of the spectrum below the red, whereas those rays pass readily through a crystal of rock-salt. Great difficulty was experienced by Prof. Langley in obtaining a block of rock-salt, which should be at once large enough and clear enough for this important purpose. He prosecuted a search all over Europe, and at last found crystals that would serve his purpose in the famous salt mines of Baden. Recently, however, through the courtesy of the Russian government, he has succeeded in obtaining a few superb blocks from the Russian salt deposits, and the finest of these have been cut into prisms by a celebrated optical expert.

The work has been done with as much painstaking care as is commonly expended upon grinding of lenses for the greatest telescopes. It was needful, indeed, inasmuch as the bolometer, presently to be described, is a mathematical instrument pure and simple, and the slightest error in any part of its mechanism modifies seriously the accuracy of the results obtained. The prism, then, through which the sunbeam passes, has an angle of exactly 60 degrees, and the picture which it throws of the solar spectrum, or "rainbow," is beautiful. This point however, has nothing to do with the matter. It is the business of the machine to record the temperature of various parts of the spectrum, more particularly those portions which are visible to the eye, and this is accomplished through the aid or a thread of platinum much finer than a human hair.

Upon this thread the prism throws the tinually passed. It is an old story that the electrical resistance of substance varies directly with their temperature, so that, in order to find out the temperature of the platinum thread, it is only necessary to ascertain the degree of electrical resistance which it may have at the moment. This determination is made by means of a very remarkable apparatus, presently to be described, which is so extremely delicate that it will record a variation of a one-millionth of one degree Fahrenheit.

Outside the building is the big machine pumping sunshine into the long tube. A weight of 1,000 pounds hanging in a well below the apparatus, keeps the mirror facing the sun all the time, and so throws the never-failing beam, except when clouds obscure the sky. The beam passes through the rock-salt prism, and the spectrum of colors is made by a peculiar mechanical arrangement to march across the platinum thread. When the red has gone by the invisible "infra-red" follows, and steadily progresses, while no indication of the procession is given except by changes in the electrical resistance of the thread—changes which are recorded by the delicate instrument about to be described, and which indicate alterations of temperature.

The instrument in question is the most wonderful thing in the world in its way. It consists of a tiny balance, the beam of which is a thread of spun glass finer than the finest hair. In the middle of the beam is a concave glass mirror only be big as a pin head, and yet so perfect in form that it would fit the thickness of a shadow upon a sphere 6 feet in diameter. The weight of the mirror is two and one-half milligrammes—about equal to that of the rind leg of a fly—and is fastened to a square piece cut of the wing of a dragon fly. The whole affair is suspended from a fibre of quartz crystal 2 feet long and so slender as to be almost invisible.

A single ray of light is admitted through a small aperture in such a manner as to strike the face of the tiny mirror, which reflecting it, throws a bright dot upon the wall. Where the dot falls there is a scale of inches, and it runs up and down the scale as the beam of the balance inclines. Now, the beam is made to incline one way or the other by the least change in the temperature of the platinum thread already spoken of, with which, though at a long distance, it is connected by electric wires. Thus, simply by watching the dot of light move along the scale, one is able to observe the alterations in the temperature of the platinum thread.

But mark! To make the thing complete there is one more very interesting process. When desired, the piece of wood on which the scale is marked may be thrown back out of the way, and then the dot of light will fall upon a sensitive photographic plate, which is kept constantly moving from left to right. Thus the light dot is made to trace a line representing by its ups and downs the rises and falls in the temperature of the platinum thread. After awhile the plate is taken out and developed like any other photographic negative. A print is made from it in the ordinary fashion, and this serves as a permanent record for that part of the invisible spectrum which has been marching across the platinum thread during the time of the observation.

The spun glass balance stands upon a pier of brick and stone, with rubber cushions between the stones, so as to reduce jar to the minimum. To the ends of the tiny beam are attached two objects of the size of large pin heads. Each of them is a group of ten rods of steel (the middle parts of as many fine cambric needles) mounted on a disk of mica. The rods are set parallel to each other and each group is magnetized to the same degree exactly, but in opposite directions, so that the beam shall not have a tendency to turn to the north. Nevertheless, notwithstanding all these precautions footfalls outside of the building disturb the accuracy of the results obtained.

The regions of invisible colors, beyond the violet and beyond the red, are mapped with the utmost accuracy, with the aid of observations made in this way. The maps are horizontal bands, crossed at intervals by black lines, in the infra-red are cold spaces, where the heat-rays are not, whereas in the ultra-violet area they indicate intervals between groups of rays that have chemical energy. Above the violet the light rays are too short to be detected by the human eye, while below the red they are too long and slow. Hence the invisibility of those regions of the solar spectrum to us.

Prof. Langley believes that the sun really deserves more of our attention than it receives—that it has more to do with our welfare, and with the current affairs of this world, than we imagine. He is of the opinion that the solar orb would appear blue to anybody who should view it outside of this planet's atmosphere. As for the bolometer, he has been using it recently to find out something about the temperature of the moon, and another interesting experiment he has made with its aid upon the light of the famous tropical firefly. Pyrophorus noctilucus, the visible spectrum of which seems to be much shorter at both ends than that of the sun.

RENE BACHE.

COMPULSORY ARBITRATION.

An Example of the Judgment in Labor Dispute in New Zealand.

The following finding of the Arbitration Court in Wellington, New Zealand, is taken from the Lyttleton Times, published at Christ Church, N. Z. It is of interest as showing the length to which labor legislation goes in that country.

Judgment was given in the Arbitration Court to-day in the coachmakers' bakers', machmakers', painters', and butchers' disputes. Generally speaking all were favorable to the workers. In the matchmakers' case the Court said that if more had been asked more would have been awarded.

In the bakers' case the Arbitration Court awarded that nine and a half hours' constitute a days' work, including a half hour for breakfast and one hour for sponging. Wages.—Foreman, £3 per week; second hands, £2 10s; any others, £2 5s. each; the employee to have an allowance of thirteen loaves, and all hands to receive "dry" pay; tradesmen incompetent, by reason of age or physical weakness to be employed at a wage to be settled between the union and the employers. No baker or workman shall commence work before 4 a.m., except on Saturdays when he shall commence before 2 a.m. After the stated hours are worked overtime is to be paid. No apprentice is to be employed unless the shop has two bona fide journeymen. Where there are four journeymen two apprentices are allowed, but not more than two apprentices shall be employed, and they are to be indentured for five years. Jobbers are to receive 10s per day of nine and a half hours.

In the coachmakers' case the Court found that four classes of labor are to be recognized—journeymen, journeymen, who for any reasons are unable to earn the full wages prescribed, apprentices and laborers. All journeymen are to be paid not less than 1s. 3d. per hour, a week's work to consist of 48 hours, on Saturday work to extend from 7.45 to noon. Overtime is to be paid. The proportion of boys to men is not to exceed one to three. Piece work is not to be allowed.

In the painters' and decorators' case a number of employers were attached to the award.

In the match factory case the weeks' work was fixed at forty-seven and a half hours, and the rates of pay were fixed for piece work.

In the butchers' case the Court fixed the wages as follows: First shopman, £8 per week and found; second shopman, £2 10s and found; third shopman, £2 1s and found; first small-goodsman £3 and found; second small-goodsman £2 1s and found; man in charge of hawking cart, £2 1s and found; man in charge of an order-cart £2 1s and found. In each of the above cases, where an employee is not found, 10s per week is to be added to the wage. The holidays allowed without stoppage of pay are New Year's Day, Good Friday, Easter Monday, Birthday of the Reigning Sovereign, Labor Day, Boxing Day, Anniversary Day, and the day on which the butchers' annual picnic is held. The proportion of boys employed by any employer to men is limited to one for every three or less number of men. The employer is to be classed as first shopman when regularly employed in the shop. The hours of labor are not to exceed fifty-six in any one week, and labor must cease not later than 10 p.m., every Saturday.

Mr. Justice Martin said that the Court had fixed weekly hours, so that the men could not be imposed upon, but had left the arranging of hours, so that employers could arrange with their employees daily the hours best suited to their business. The court had not allowed for payment for overtime, because there had been so much give and take in the trade between masters and men and the court was loth to disturb conditions which seemed to be of an amicable kind. The minimum rate of pay had practically been fixed at 1s per hour for the general hand. The court did not stipulate that boys should be legally indentured, as the present conditions of the butchering business did not permit of a boy learning the trade thoroughly.

In delivering awards in the Arbitration Court to-day, Mr. Justice Martin told the parties concerned that the Court would be only too glad, at any time, to give them its advice upon any points in the awards which might not be clear. If doubt arose at any time when the court was not sitting then a joint written statement of the difficulty from the employers and the union concerned could be sent to him, and he would communicate with his colleagues upon the subject with a view to solving the difficulty.

All the awards delivered were made for a period of two years, and the terms appeared to give general satisfaction to the union representatives present. Preference of employment was granted to members of all unions which came before the court, but there was no clause attached, under which entrance to the union is made easy, without any ballot, and at a small fee. His honor, speaking on the wages question, said that the rates awarded in all cases by the court were the lowest that the masters could give their hands, but the awards did not prevent an employer giving good men good wages.

Official Notification

Five Leading Barristers Appointed Queen's Council For the Province.

Compulsory Vaccination Ordered in Nanaimo and the Vicinity.

Charles E. Pooley and H. D. Helmcken, of Victoria; Sir Charles Hibbert Tupper and L. G. McPhillips, of Vancouver, and G. E. Corbould, of New Westminster, have been appointed Queen's Counsel in British Columbia, notice of the appointments being given in yesterday's Gazette.

The Nanaimo mining division, except ing the municipalities inclosed therein, has been constituted a health district, with Dr. L. T. Davis as health officer. He will also act as health officer for the town of Wellington. Compulsory vaccination has been ordered in the district named, as well as in Nanaimo and Wellington.

After December 1 a bounty of $2 will be paid for every coyote killed in a settled district of the province.

The following notice is printed over the signature of R. E. Gosnel, secretary of the provincial bureau of information: In order that the government may be in possession of definite information with which to supply those seeking investments in this province, I am instructed to invite particulars from those who have properties for sale, and who may feel disposed to forward such particulars to this office for the purpose in question. In view of the proposed early re-organization of the agent-general's office in London, England, the desirability of having on file a list of farms and other properties for sale, with full and accurate details, is obvious. Properties submitted may include farms and farm lands, industrial or commercial concerns, timber limits, water powers, or other enterprises affording opportunities for legitimate investment. It is not proposed to recommend properties to intending investors, but to afford the fullest access to the classified lists and all available information connected therewith, and to place enquirers in communication with the owners. The fullest particulars are desired not only of the properties themselves, but of the localities in which they are situated, and the conditions affecting them. For this purpose printed schedules will, upon application, be forwarded to those desirous of making sales.

The Victoria Sealing Company, Limited, and the Vancouver Island Mining & Realty Investment Agency, Limited, of his city; the Sandon Rinks Company, Limited, and the Mines Exploration, Limited, give notice of their incorporation.

Mead W. Crane, merchant, of Phoenix, has assigned.

T. McGelegan has been appointed attorney for the American Boy Mining & Milling Company.

A meeting of the Fisher Maiden Mining & Smelting Company will be held on December 18, at Rossland.

The following appointments are Gazetted:

Roland Ryder, of Hope, to be a coroner for the province, vice William Teague.

William Wilfrid Southin, of Ladysmith, and Roland Ryder, of Hope, to be justices of the peace for the counties of Victoria, Nanaimo, Vancouver, Westminster, Yale, Cariboo and Kootenay.

George M. Clark, of Montreal, to be a commissioner for taking affidavits for the courts of British Columbia.

Herbert Young, of Atlin, to be a notary public for the province.

CANTEEN SCANDAL.

Master Gunner Acheson Has Been Acquitted.

London, Nov. 22.—The extraordinary interest taken here in the Dover canteen scandal, which has been dubbed the "British Dreyfus case," was accentuated to-day by the acquittal of Master Gunner Acheson, accused of initiating a conspiracy against Second Lieutenant A. Beckett, of the Royal Garrison Artillery. The latter was acquitted on October 13 of embezzling canteen money, and Acheson demanded a trial by court-martial on the allegation that he had hatched a plot. His acquittal is taken to mean the re-opening of the charges against Beckett.

Fancy Dress Ball.—The Sons and Daughters of St. George, who held a brilliant masquerade in A. O. U. W. hall on Thursday evening, have decided to give a grand fancy dress ball early in the new year. Valuable prizes will be given in order to induce the preparation for good costumes.

ABSOLUTE SECURITY.

Genuine Carter's Little Liver Pills.

Must Bear Signature of

Brent Good

See Fac-Simile Wrapper Below.

Very small and as easy to take as sugar.

CARTER'S LITTLE LIVER PILLS. FOR HEADACHE. FOR DIZZINESS. FOR BILIOUSNESS. FOR TORPID LIVER. FOR CONSTIPATION. FOR SALLOW SKIN. FOR THE COMPLEXION

Price 25 Cents. Purely Vegetable. CURE SICK HEADACHE.

B.C. Year Book 1897

By R. E. GOSNELL

Cloth.....$1 50 per copy

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THE TRADE SUPPLIED.

This book contains very complete historical, political, statistical, agricultural, mining and general information of British Columbia. Fully illustrated.

THE COLONIST P. & P. CO., LTD. CTORIA, B.C

NOTICE is hereby given that we intend to make application to the Chief Commissioner of Lands and Works to have a road 66 feet wide established, commencing at the point where the present road to McClum's leaves the Cowichan Lake trunk road thence southerly to the lake, a distance of about three hundred yards.

WILLIAM GIDLEY.
GEORGE LEWIS.
FRANK H. PRICE.
ABE. MAYEA.
HENRY MARCH.

Cowichan, B. C., Oct. 6, 1900.

B. C. STEAM DYE WORKS.
141 Yates Street, Victoria.

Ladies' and gents' garments and household furnishings cleaned, dyed or pressed equal to new. sel0-dy&w

MINERAL ACT. 1896.
(Form F.)
Certificate of Improvements.

Success, Serpent, Gen. James M., Lady Francis, Leviathan, Leviathan No. 2, Leviathan Fraction and Faith, Mineral Claims, situate in the West Coast, Vancouver Island, Mining Division of Clayoquot District.

Where located: On Tranquille Creek, Tatine Inlet.

Take notice that I, A. S. Goinz, agent for James M. Ashton, Free Miner's Certificate B48927, and Mary E. Ashton, Free Miner's Certificate No. B48928, intend, sixty days from the date hereof, to apply to the Mining Recorder for a Certificate of Improvements, for the purpose of obtaining a Crown Grant of the above claim.

And further take notice that action, under section 37, must be commenced before the issuance of such Certificate of Improvements.

Dated this 25th day of September, 1900.

A. S. GOING.

Attention, Farmers!

Highest cash prices paid for good Feathers.
SANITARY STEAM FEATHER WORKS.
Cor. Fort and Blanchard Sts.

THE MACDONALD TRAINING SCHOOLS.

The visit of Professor Robertson to British Columbia for the purpose of inaugurating the manual training school, one of several to be established in Canada through the generosity of Sir W. C. Macdonald makes the following from the Ottawa Journal of added interest.

The inauguration on Saturday last of a system of manual training for the boys of Ottawa marks an important event in history of Ottawa schools, and is the beginning of a movement destined, we believe, to strengthen one weak spot in our system of education.

The citizens of Ottawa owe a debt of gratitude in the first place to Sir William Macdonald for his liberality in providing the necessary funds for this undertaking and they owe almost or quite as much to Prof. Robertson for the wisdom and tact he has shown in carrying this scheme to a successful issue. When it is remembered that barely a year ago the project was first mooted and further consider the many difficulties that had to be met in the way of securing accommodation efficient instructors and equipment, the people of Ottawa can the better appreciate the work done by Prof. Robertson.

The question of manual training is too broad a one to be treated fully at this time, but we wish to emphasize one or two points. In the first place we would like to dispel that illusion which deceives some of us as to the object of manual training. The trades unions have openly declared against the system on the ground that it is calculated to make boys mechanics and thus increase competition in skilled trades. This idea may be quite natural, but it is based on an erroneous conception of the prime object of ual training and is also a result of a failmanual training and is also a result of a failure to grasp fully what is meant by education.

All education must begin with sensation and be based upon the perceptions the child gets of the material world. Why are some children so quick to grasp an idea presented by a teacher or so ready to interpret ideas conveyed by the printed page? Largely because their previous experiences with THINGS have given them impressions which enable them to attach some definite meaning to what is taught them or to what they read. It is well known that the most teachable children are those who have lived close to nature and have unconsciously got the a b c of all education which is neither more or less than a familiarity with sights, sounds, tastes, smells and how things feel when touched. All children delight in doing, in handling things, in action of some kind and if the child had not this inborn desire TO DO he could never be educated.

And yet outside the kindergarten our system of education has made little provision for doing. Some of the energy and nerve force of every teacher in our public schools is used up in restraining the child from doing and to a certain extent this must always remain so because it is no longer important that a growing child should learn not to do or learn self control than that he should learn to do. None the less our system of education has been and is weak inasmuch as it gives the growing child brimful of animal spirits and over-charged with nervous energy, too little opportunity for action, manual training proposes to remedy this and to give an outlet to this energy during the years from nine to fourteen. Just when the desire for action is at its maximum. More than this it is proposed to direct this youthful energy and cultivate the boy's eye, his hand and his judgment at the same time. It is proposed to give him practical lessons in the importance of accuracy, neatness, method in work and care of tools. A boy who cuts a board one-sixteenth inch too short and thereby makes a faulty joint or is compelled to do his work over again will not be likely to think trifles of no account. As all work will be done from drawings prepared by the boy his woodwork will help him directly with his drawing and surely no boy can make accurate measurements and work from a plan drawn to a scale without feeling that arithmetic has a new meaning.

If trades unions should object to manual training because it will tend to make better carpenters or better smiths, their objection would be logical because a boy who receives a good training in handwork and eye-work from nine to fourteen years of age, and who afterwards learns the trade of a carpenter will certainly be a better carpenter for his boyhood training. But if the objection is merely that because of his course in manual training he is more likely to become a mechanic or that the object of the course is to produce mechanics, then the objection rests on a misunderstanding.

Would it, however, be any real objection to manual training if it did tend to make boys mechanics rather than professional men on the one hand or unskilled laborers on the other? A young country like Canada is likely to feel the want of skilled mechanics more than the want of additional lawyers or doctors and a skilled mechanic is always a better national asset than an unskilled laborer, however useful the latter may be.

We wish to call attention to one other feature of manual training and that is the tendency there may be on the part of some to emphasize its importance as to lose sight of its limitations. The introduction of manual training does not solve all educational problems. These problems must remain with the human race so long as humanity moves toward the infinite. There must be no attempt to set manual training as a substitute for purely intellectual training nor any attempt to pit one against the other. The true friend of manual training is also a strong believer in the advantages of what for want of a better term we may call book-keeping because he recognizes that the two are not antagonistic but complementary. The time can never come when the mathematician, the Greek scholar, the historian, or the poet, even though they invent no telegraphs, nor discover any new scientific truths, shall not be useful and even necessary for the welfare of the state. Useful because of their work as instructors and necessary because by their work as thinkers and teachers they make possible the production of the so-called practical men who build railways, extract metals from ores or discover a cure for smallpox.

Victoria like Ottawa is one of the lucky cities to secure one of the schools and the address which the Governor-General made in opening the Ottawa school will apply equally well here. He said in part:

We all know that the people of Canada are to be congratulated upon the splendid opportunities which exist for the education of the children and youth of the country. The progress of the Dominion depends chiefly upon the intelligence, the honesty and the abilities of its citizens, and these qualities, together with habits of perseverance and thrift, are most certainly inculcated and develope during the early years of life when the minds and the bodies of the pupils are plastic under the training influence of skilful teachers.

In a comparatively new country like this it is of the utmost importance that institutions of learning and courses of study should provide for the thorough education of those who are to follow any profession; and it is no less in the highest interests of the state that the elementary schools should give the best possible education to those children whose school life ends when they leave the public schools. A British report on this subject has lately very truly said: "The progress of the people in wealth and material prosperity largely depend on the education given in the primary schools."

In accordance with this view, during recent years the educational authorities in the leading countries of Europe and also in the United States have been supplementing the course of study from text books with various forms of manual exercises and object lessons; as after careful consideration they have found that this class of training tends immensely to develop the most useful faculties of the pupils which are neglected when the education is chiefly of a receptive character from books.

In this age of notable progress in the various fields of human activity it is not a matter for surprise that educators should express the opinion, from time to time, that educational methods require to be improved to meet changed and still changing conditions. Evidently there will not be a finality to the process or methods of education so long as there are advances in civilization, in science and in human achievements.

Schools are the means which experience has taught us to use as the most convenient and economical way of conveying to the rising generation the mental wealth of the present and the past. It is now recognized that they can do that none the less well, through educating the faculties of the scholars which are not called into activity by lessons from books.

The report of the commission on manual and practical instruction in primary schools under the board of national education in Ireland contains much information on the subject. It was presented to the imperial parliament in 1898. Its members had ninety-three meetings; they took the evidence of one hundred and eighty-six persons whom they considered qualified to give information on the matters submitted to them; and they visited one hundred and nineteen schools in most of which they had an opportunity of seeing manual and practical instruction given.

Nothing can be stronger than the opinion expressed by the commissioners in favor of such instruction. I could refer to many passages in their report ably supporting in detail the views they express; but I think it may be better that I should leave to other speakers who I hope will address you this afternoon the task of dealing with educational technicalities in which they are so well versed and I will only say that the experience of the educators, the parents and the pupils in places where educational manual training has been introduced supports the expectations expressed by the report to which I refer. Ten years ago probably not more than fifty board schools in England had been provided manual training; whereas it is now reported that the boys from nearly five thousand schools go to manual training centres.

It is with profound pleasure and keen appreciation that we welcome to Canada and to this noble and useful work in our midst the manual training teachers who have come from Great Britain, and also the United States. They may be assured that those of us whose school days are long past will have an interest in their labors as deep, if not so evident, as that of the boys in their classes.

But, ladies and gentlemen, I would ask you to understand that manual training is not intended to teach any trade or even the elements of any trade as such. Only as the alphabet and the art of reading are necessary to the literature of all professions, so manual training fits a boy to begin his apprenticeship to any trade with greater aptitudes and correspondingly better chances to be a skilful, excellent workman.

I hope it will be understood that manual training does not aim at preparing the pupils to earn their own living through manual work, although it does help them in that most honorable and laudable purpose after they take up their life work whatever it may be. Because the boys like it, it helps to keep them longer at school and thus gains for them a more thorough education in other respects also.

Sir William Macdonald has certainly added another magnificent gift to those already conferred on Canada, and I am sure you will all agree with me that in asking Prof. Robertson to assist in this great work he has chosen a man whose ability and personality would go far to secure the success of any undertaking. We have all heard of the generous gift of Sir William C. Macdonald to the cause of higher education in Canada; and now he has put the people of Canada under a new debt to him by having placed in the hands of Professor Robertson a sum sufficient to provide manual training for the boys attending the public schools of at least one city or town in every province of Canada for a period of three years. These are expected to serve as object lessons to be observed by all interested. By the end of the present year provision will be made in equipment and instructors for training about five thousand boys and several hundred teachers. One may truly say that the scheme is one of high statesmanship in its plan, methods and endowment.

PLEA FOR THE GIRLS.

If I may be allowed to refer to one thing which the Macdonald manual training fund does not provide for, it will be rather to suggest what some likeminded benefactor may do for the girls than to imply that Sir William's benefaction is not complete in itself.

The fund provides for the training of boys only. We all know that womankind is the better half of mankind.

Manual training and practical instruction for girls in schools are not less important than for boys, though the subjects and exercises for girls would naturally be different from those for boys. Such exercises are admirably furnished by courses of study and practice under the heading of domestic science; and it augurs well to know that in other countries and in other cities domestic science for the girls in the schools has followed close on manual training in woodwork for the boys.

In my opinion it would be impossible to overestimate the value to girls of the training afforded by classes in cooking, laundrywork, general household economy and some slight primary acquaintance with first aid to the injured and nursing—knowledge capable of contributing so much to the happiness of the individual, the comfort of the home, and the weal of the country.

Presentation to the Park.—Park Chairman John Hall desires to thank Mr. George Riley for the present of a handsome cock pheasant for the Beacon Hill Park aviary.

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NOTICE TO ARCHITECTS.

The Honorable the Chief Commissioner of Lands and Works hereby invites the Architects of British Columbia to submit, on or before Saturday, the 22nd day of December next ensuing, (competitive) drawings, specifications and estimates of cost, for the construction of a Government House at Victoria, B. C.

Particulars of competition and further information can be obtained from the undersigned.

W. S. GORE.
Deputy Commissioner of Lands & Works.
Lands and Works Department.
Victoria, B. C., Oct. 31, 1900.

FAMILY RECORD

One of the most beautiful pictures in colors.

Upon the background of Pure Solid Gold rests the Family Record in the shape of a handsome volume with Gold Clasps upon a cushion of crimson velvet with a beautiful gold tassel. On the pages, under different headings, are spaces in which to write the name and date of birth. On either side is a beautiful scroll on which to record the marriages and deaths. On top of the picture are the words "Family Record" in the richest lettering known to printer's art. Under this are spaces for father's and mother's pictures. In the lower part of the picture is a beautiful home scene. The dear old grand parents, the handsome, stalwart husband and happy young wife, the loving daughter and baby-boy—the idolized grandchild—are all gathered around the table, while grandfather reads a portion of God's Holy Word. A truly beautiful scene. Underneath are the words, "God Bless Our Family." Around this picture are 8 spaces for photographs of other members of the family, each space enclosing a gem flower piece. Elsewhere on the picture are scattered creeping vines, buds and blossoms in rich confusion, the whole resting on and thrown into bold relief by the gorgeous background of Solid Gold, which produces a picture of dazzling beauty.

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Home Novelty Mfg. Co. (Dept. 153d.) P. O. Box 518, Chicago.

NOTICE IS HEREBY GIVEN that application will be made to the Legislative Assembly of the Province of British Columbia at its next session for an Act to incorporate a company with power to construct, equip, operate and maintain a railway for the carriage of passengers and freight from a point at the present terminus of the Victoria & Sidney Railway in the City of Victoria, over, across and along the following streets, that is to say: "A" Street, Bay Street, First Street, Blanchard Street, Fairgard Street, Cormorant Street and Store Street, and across any street or streets in the said City which intersect with the streets above named, or any of them; and also over, across and along such other streets or ways in the City of Victoria as may hereafter be agreed upon between the company and the Mayor and Council of the said City for the time being in office; and to connect the railway so to be constructed over the streets first named with the tracks of the Esquimalt & Nanaimo Ry. Co., and the Victoria & Sidney Railway, and to make traffic or other contracts, agreements or arrangements with the said companies and each of them for the transfer of passengers and freight upon such terms as may be agreed upon and further to construct, equip, operate and maintain a line of railway on the Mainland of British Columbia from a point at or near the mouth of the Fraser River through the Municipalities of Delta and Surrey to a point where the line proposed to be constructed shall intersect with the New Westminster Southern Railway, and to continue said construction easterly to a point on the Fraser River at or near Chilliwack in the said province; and also with power to construct, operate and maintain a railway ferry steamship for the purpose of transferring loaded passenger and freight cars from the terminus of the Victoria & Sidney Railway at Sidney, or such other point as may be hereafter selected for such terminus on the Saanich peninsulr to the point or points on the Mainland of British Columbia at or near the mouth of the Fraser River which shall be selected on the Western terminus or terminal of the railway proposed to be constructed; with power to build branch lines, and to build, own and maintain wharves, docks and such terminal slips, warps, and appliances as may be convenient or necessary for the operation of the said railway ferry service; and with power to build, own, equip and maintain steam and other vessels and boats and operate the same on any navigable waters within the Province; and with power to build, equip, operate and maintain telegraph and telephone lines in connection with the said railway and branches, and to charge tolls thereon for the transmission of messages for the public, and to generate electricity for the supply of light, heat and power, and for all other purposes mentioned in Sections 80, 81, 82, and 83 of the "Water Clauses Consolidation Act, 1897;" and with power to take over and adopt the provisions of any agreement executed, or the conditions of any by-law passed by the Municipal Corporation of the City of Victoria and intended to aid or assist the undertaking hereby proposed to be incorporated; and with power generally to acquire lands, bonuses, privileges, or other aids from any government, municipal corporation, or other persons or bodies and to levy and collect toll from all parties using and on all freight passing over any of the roads, railways, ferries, wharves, docks or vessels built by the company; and with power to make traffic or other arrangements with railway, steamboat or other companies, or to amalgamate with the Great Northern Railway Company, or with any railway corporation controlled or operated by the said Company, or with any other railway corporation in the Province of British Columbia, and for all other necessary or incidental rights, powers or privileges in that behalf.

Dated at the City of Victoria, B. C., this 14th day of November, A.D., 1900.

BODWELL & DUFF,
Solicitors for the Applicants.