We call the particular attention of our patrons and every one receiving a sample copy of this paper, to our offer to send The Weekly, on trial, Three Months for Twenty-Five Cents. The regular subscription price of the paper is $2.50 a year, and it will be maintained at that, excepting only for these trial numbers. We are well persuaded that if the teachers of this country once learn what kind of a paper we publish, they will feel that they cannot well afford to be without it, as it will contain educational intelligence from all parts of the world, and contributions from many of the first educators of the land.

Upon receiving the subscription books of The Weekly from our predecessor, we had reason to feel satisfied with the number of subscribers on the lists, as it was larger than we expected. But we are not satisfied to have that number remain at the old figures. In 1878 there were 271,144 public school teachers in the United States, of whom, judging from the newspaper directories and the postal records, a very small proportion take an educational journal. This is unprofessional. We should improve. We take this means of introducing ourselves to the Bureau of Superintendents and teachers visiting Washington to witness the operation of the Bureau, which has already done so much to enable us to compare the public school work of the different American and European States, and choose the best methods of all countries.

The true educator, he who makes the relations of all the works of God and of man to the work of instructing the race his supreme and perpetual study, will be delighted with the contribution to this number of The Weekly, entitled "In Front of the Capitol," from the pen of Dr. Gregory.

From advice just received from Springfield we shall not be surprised if the compulsory education bill passes the Senate. It is Senate bill No. 60. It was introduced by Senator Marshall, Jan. 18, and ordered to first reading immediately; was read and referred to the Committee on Education; reported back and ordered to second reading Jan. 28; passed its second reading Feb. 4, when it was amended and sent back to the Committee on Education; which reported it back, with amendments, on Feb. 11, when its passage was recommended and it was ordered on file. This seems as if its friends in the Senate meant business. The bill requires the attendance on public or private schools of all healthy children between eight and fourteen years of age. School boards are authorized to supply the children of poor parents with books, to be returned at close of school and kept as the property of the school. A penalty of not less than five nor more than ten dollars may be inflicted on any parent or guardian who disregards the law.

That which particularly commends this bill as an improvement on other bills now pending in State legislatures, or now lumbering the statute books of several States, is the section which provides that a fine of not less than five or more than ten dollars shall be inflicted upon the directors of school boards who neglect to prosecute parents or guardians that do not observe the law. This may have the effect to lead to the enforcement of the statute, and prevent its being such a perfectly dead letter as most compulsory education laws this side the ocean have proved to be.

In case this bill should become a law, what will happen to school boards and school superintendents that adopt rules and enforce them, directing that disorderly children, instead of being treated to the compulsory process known as corporal punishment, be expelled from school? Would it not be well to add a section to this bill inflicting a penalty upon them for obstructing the operation of the statute?

Shall the nation devote the proceeds of the public domain from this time forth to the support of public schools? This question is now fairly before the country. The Senate has passed a bill to this effect, the substance of which has already been given to the readers of this paper, together with certain official statistics.
of illiteracy in the different sections of the United States, expenditures for school purposes, wealth, debt and condition of public credit, and other data, going to show that ignorance, poverty and low public and private credit go hand in hand; and that individual freedom and free schools are indisputably linked together. Now this bill may not pass the House the present session, but it is certain to come up in the next Congress, which is more than likely to be organized immediately after the fourth of next March. It is to be hoped that the merits of the bill will be fully and fairly discussed; and that, if it is a wise measure, Congress may have very distinct assurance that it is the wish of the people and the public press that it should become a law.

The subject is one of far more than ordinary importance. On June 30, 1878, the Commissioner of the General Land Office reported 1,090,481 acres of unsurveyed lands. This is very nearly half the total area of the United States. It is, in fact, equal to the entire area of Great Britain and Ireland, France, Belgium, the Netherlands Denmark, Norway and Sweden, the German and Austrian Empires, Spain, Portugal, Italy, and European Turkey. Yet to this must be added a considerable portion of the surveyed lands of the United States still unsold. The question raised by the Burnside bill is: Shall we exchange all this vast realty, except what may be settled under the homestead and timber culture acts, for that intangible thing called education? Somehow this intangible something has ways of touching palpable things so as to double, treble, and not unfrequently so as to add a hundred-fold to their value. Go into the Smithsonian Institute at Washington and the Regent will tell you that it touched a heap of pit coal one day, and then pointing to a cabinet, fully six feet by twelve on the floor and reaching higher than your head, will show you the products of that magic touch; bottles of the most exquisite analine dyes, silks and satins of all the hues with which Aurora paints the skies of morning or Iris ribbons the rainbow, waxen altar candles, white as alabaster, crude petroleum, refined oils of various sorts, rolls of sulphur, skeins of flexible glass, bracelets, brooches and earrings of jet or amber, and a hundred other artifices wholly composed of or beautified with the extracts of that unsightly heap of coal screenings. Yet this is only a single illustration out of hundreds that might be pointed out to show the transmuting power of education, whereby it turns the almost worthless crudities of nature into gems and gold, or the equivalents of these.

The American inventions of the past decade alone are worth more to the nation and far more to the world at large than all the cash the Government will ever collect for all its now unsold acres twice sold. But this is not the only consideration, Education makes all the difference between civilization and barbarism, and is essential to good government. This is what the Fathers of the Republican thought, when, even before the adoption of the present Constitution of the United States, Congress, in 1787, declared, in the ordinance for the government of the Northwest Territory: "Religion, morality and knowledge, being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged." And they forthwith proved the sincerity of their faith in this doctrine by setting aside the sixteenth section out of every thirty-six sections of the public domain for the purpose of encouraging public schools, besides granting other lands for the support of seminaries and colleges. Since then Congress has more than doubled its grants of this kind to the new States received into the Union, and has reserved two instead of one school section in each of the Territories. So gratifying have been the results of this policy in the past that it is believed Congress may be moved to devote the proceeds of all the public lands to this purpose from this time forward. Free homesteads for the pioneer, free schools for his children: What better device than this can the Republic inscribe upon the flag it floats as it marches on to reduce the still unbroken forests and prairies of the West to cultivation, and plants in the place of Indian barbarism all the germs of Christian civilization?

If there are any valid objections to this bill the columns of The Weekly are open for the statement of them, and for any reasonable amount of argument. Such off-hand, unsupported stigmatizing of the bill as the proposition of a demagogue, and the initiation of a stupendous swindle, as has come to us (we are sorry to say) in an educational journal, recently fledged in Indiana, passes for nothing.

IN FRONT OF THE CAPITOL.

JOHN M. GREGORY, LL. D.

From my front windows, I look upon the Capitol of the nation. Nothing but the broad grounds intervenes between me and its imposing eastern front. Its magnificent stretch of porticoes, colonnades, pediments and dome, lie before me, a vision of marble grandeur which the earth cannot elsewhere equal. On either side, stretching away on a lower level to the Potomac, extends the capital city, while beyond lie the blue hills of Virginia. How different the scene from that which greeted Washington, as he visited the wooded hills of the Potomac, ninety years ago, to select the site for the capital of the then young nation. But it is not of the architectural grandeur and historic glories that I am thinking, as I gaze from my windows upon this great edifice. It is the educating influence which stretches forth from it, and tinges the remotest districts of our country.

All things educate us. The houses we build, the fields we cultivate, the products of our many handed industries, all remain as visible lessons before our eyes and minds. The very words we speak send back their echoes through the chambers of thought. What a vocabulary of lessons, then, must be a great city! What a text-book of living art and pictured science, and of a forming, moving history! But, the capital city of a nation exercises a peculiar power over the national mind and character. There was a deep philosophy in the notion of Cardinal Richelieu that "to make Paris great was to secure the unity and greatness of France." Other countries, and especially our own, may refuse to be so moulded and controlled by the fashions and ideas born in the national capital, but wherever the political power of a great people concentrates, where its laws are made, and the work of governing is done, where its great men, the choice of the popular suffrage, join in debate, there must always spring up influences which will stimulate and color the life of the people.

As I write, the flag floating over the hall of the House of Representatives, tells me that their morning session is begun. An hour later another flag will rise over the Senate chamber, as a signal that that branch of the American Congress is also in session. The questions which concern the parties and the political interests of fifty millions of people are under discussion by men whose names are household words throughout the Union; men whose intellects are trained to measure the popular force of every word they speak, every sentiment they utter, every argument they advance. Even while they speak, the busy wires will carry their words to all parts of the country, and to-morrow
morning, at a million breakfast tables, in the great cities, their debates will be read and canvassed by the men and women of the country.

Sitting in the galleries or loitering in the lobbies, the writers of the press are gathering news, reading between the lines of the speeches, catching the deep undertones of thought and purpose and shaping, with cunning, and sometimes unscrupulous, art the estimates of men and movements, which will, ere another week, fill the columns of the newspaper press, and become the thought of millions of readers. Who does not recognize the educational force which plays through all this? This great marble palace is the political high school of the nation. It stands on the step and front of our school systems as it does of our government.

The educational power of the capitol does not end with the influences of which we have spoken, the great debates which take place within its walls. It scarcely begins there. In every college, and in almost every common school of the country, the ambition of pupils is appealed to and stimulated by the hope that one day they too may climb those marble steps as senators or representatives, and their voices may sometimes be heard in those magnificent halls. Mimic senates are organized in our universities to give training in parliamentary usage and political oratory; and the history of the country and its principles of state craft get a deeper and more earnest study from thousands of youths who hope to be enrolled at last among their country’s statesmen. It will be difficult to measure the power, the reactions which this great capitol thus exerts upon our entire school system, unless we could measure its influence upon the press, upon literature, upon political parties, and upon all that wide reaching machinery by which the government of the nation, and of its thirty eight states, is carried on.

This capitol is more familiar, as well, if possible, more important line of thought which the sight of this capitol may well revive. It is the thought which rises at the other end of this series of influences—the power of the schools over the capitol. This great edifice, with all that it contains, is but the consummate flower of that great tree of national life whose roots draw nutrition from every school and fireside of our country from the Atlantic to the Pacific.

Out of our education, in family and school, has come the civilization, the intelligence, the love of liberty, the sense of popular rights and popular power, and the political wisdom or un-wisdom, which to-day gets utterance in yonder halls. The orators and statesmen are themselves but the creations of our school systems, and there is nothing which so aids and controls them as the popular intelligence which that school system is constantly feeding and increasing. Demagogism trades upon popular ignorance. Remove that ignorance and demagogism would disappear.

Our truest and noblest statesmen all recognize public education and intelligence; not only as the living safeguard of liberty but as the necessary condition of national progress. These representatives of the nation’s will know that it will be in vain to move to higher positions of national policy till the people are on march. With ear to the ground they listen for the tread of the advancing millions, before they venture to enunciate higher ideas of national life and national duty. Let the resounding tramp of the millions tell them that the principles of temperance are in the ascendant and no longer will an honorable senator proclaim in the senate chamber as yesterday his ignorant opposition to no-licences.

Let the popular voice roll its echoes around this capitol in favor of compulsory education—the compulsion of the adult population to secure the rights of childhood—and no senator will be found as yesterday to proclaim its illogical opposition to the most logical doctrine of modern civilization. Let the schools of the country, in short, do their most effective work on the coming citizenship, let them spread their influence like morning light over the hill sides and plains, athrow the mountains, and through the valleys of this great land and in this magnificent capitol there will gather a wisdom as solid and resplendent as its marbles, as symmetrical as its dome, and as enduring as the ancient hill upon which it stands.

Thus the capitol of the nation and the district school house stand at the opposite extremes of the long line of forces which move in and mould the public life. How unequal they seem in dignity and power; the one a vast palace of marble, echoing the footsteps of great statesmen, the other a little house, built of boards or logs, and filled with the clutter of little children’s feet. But the capitol is one; the school houses count by hundreds of thousands. The capitol stands where the great river of life enters the sea of history; the school house stands by all the myriad springs and rills which go to make up that river’s flood. The school houses to the capitol are not only as a million to one, but they hold the future nation within their walls. Theirs are the growing forces, the sunrise, the spring time. They “scratch the garden ground” of the saplings. The capitol itself with all it represents will be theirs in the coming years, and will exhibit but the ripened harvest of their seed sowing.

HYGIENE IN SCHOOLS.

The President of the International Congress of Educators, held at Brussels, last August, states the conclusion reached by that body on the subject of school hygiene in the following brief summary, translated for THE EDUCATIONAL WEEKLY, from the original received at the Bureau of Education, Washington.

With regard to this subject, fifteen specialists of different countries, Belgium, France, Germany, Britain, Holland, Russia and Switzerland, sent in preliminary reports which bore the traces of very earnest study. Many other papers were also sent by scientific men of various nationalities, which were read and analyzed by one of the secretaries of the section.

The assembly dwelt long upon the principal hygienic conditions to be observed in the construction of school-houses.

1. The lighting of class-rooms, which was the subject of three reports, was seriously considered, and the following was recorded:

Class-rooms should be lighted during the day by windows on one side only, and to the left of the scholars, and so arranged that all the seats should be fully and equally lighted—means of ventilation being considered apart.

2. The question of the proper cubic contents of air gave rise to the following conclusion, also expressed as the wish of the meeting:

The length of a class room for fifty pupils (the maximum number) should be 9 metres 60; the width, 6 metres 60, to 5 metres (about 30 feet by 24).

3. The hygienic conditions of courts, play grounds, gymnasiums, etc., as well as the difficult and important question of summer ventilation, and of ventilation combined with warmth in winter, which has been made the subject of four different reports, were thoroughly discussed, and we trust that the important practical conclusions which obtained the unanimous assent of the assembly will bear their proper fruit.

The section discussed everything which concerns school fittings and arrangements, and was unanimous in deciding in favor of single desk seats, such as are already in use in many schools on the Continent.

The next discussion turned on the lighting of evening classes. Lamps were approved, and an ingenious apparatus was proposed for approval, which combines with the lighting some arrangements for facilitating ventilation. The question of the construction and fittings of the kindergarten, on which two reports were presented, did not give rise to much discussion. The conclusions arrived at were unanimously accepted.

The section then entered into the consideration of medical attendance in schools, and expressed a wish to see the medical inspection extended to the teaching staff; and, moreover, the desire to see an office for matters connected with the hygiene of construction and fittings of the kindergarten, on which two reports were presented, did not give rise to much discussion. The conclusions arrived at were unanimously accepted.

The question concerning the statistical researches to be set on foot in order to ascertain the influence of schools on the physical development of children, the section concluded to petition.
1. That the Belgian Government should take the initiative in establishing all over the country (according to the example set in Brussels) statistics of health in schools, that shall bring to light the influence of the public schools on the health of children.

2. That the recent establishment of medical commissions in Belgium, and especially the appointment of correspondents of those commissions, should be so organized that they may become so many centers of methodical research into the hygienic statistics of schools.

3. The section recommends a permanently established interchange of information, and of documents relating to scholastic hygiene between different countries.

In the last sitting the section considered the practical measures to be prescribed in kindergartens and in primary schools, with regard, first, to preventive medical care; second, to nourishment. The views put forth in the report were sanctioned, after a long and interesting discussion.

MATHEMATICAL DEPARTMENT.

EDITOR, DAVID KIRK, JACKSON, MISS.

PROBLEMS.

The part of the country in which we live has been shut off from the rest of the world most of the time since last November by a great wall of snow; hence our apparent tardiness in answering communications.

Below, will be found some remarks on three problems sent by parties in Illinois:

**Problem 1.** A piece of land is 20 rods long. At one end it is 6 rods to 10 feet, at the other 5 rods 6 feet 8 inches. What length should be cut off the small end to make one-fourth of an acre? A solution in full is desired.

J. W. McClure.

Let the trapezoid A B C D represent the given piece of land.

![Diagram of a trapezoid](image)

Produce the convergent sides till they meet, thus forming a triangle D A E.

Let the known quantities D A, C B, and the length of the trapezoid, be denoted by h, a, and l; and denote the length of the triangle D A E by x. To find x we form the proportion, a : b :: h : x; from which we find x = \frac{h b}{a - b} = \frac{5.49404 + 20}{6.656 + 5.40404} = 89.9155 rods. Multiplying this by \frac{1}{2} of D A gives the area of D A E, which = 424.95456 rods. Adding \frac{1}{4} of an acre to this gives 282.95456 rods, which is the area of the triangle whose base m is the longer parallel side of the quarter acre in question.

Triangles are as the squares of theirlike lines, hence: 242.94546 : 282.95456 : (89.9159)². Finding fourth term and taking its square root, we get 97.0373 the distance from D to a. From this take the altitude of the triangle D A E, viz: 89.9159 and there will remain 7.1154 rods = l/2, the length to be cut off.

**Problem 2.** In what time will an annual payment of $300 amount to $3450 at 6 per cent. simple interest?

This problem which is the 4th, page 410, of Robinson's higher arithmetic, like all problems in annuities at simple interest is solved by arithmetical progression, but the case under which it falls is not usually given in arithmetics.

Here we have the first term, 500, which denote by a; the common difference, 30, (6 per cent. on 500) which denote by d, and the sum, 3450, which denote by s, the problem then is, given a, d, and s, to find n or number of terms.

The formula for this case is

\[ s = a + \frac{n(n - 1)}{2}d \]

Substituting the values of the letters in the formula as follows:

\[ 3450 = 300 + \frac{n(n - 1)}{2} \cdot 30 \]

We get

\[ n(n - 1) = 60 \]

The formula is obtained from the two fundamental formulas by finding the value of n from them, which gives rise to an interesting problem in quadratic equations.

**ANOTHER SOLUTION OF PROBLEM ONE.**

The following from Prof. Tufts came to hand after the editorial solution had been prepared for the printer. It is an excellent solution and it gives substantially the same result as the first:

The problem sent to The Educational Weekly by J. W. McClure reads as follows: A piece of land is 20 rods long. At one end it is 6 rods 10 feet, at the other 5 rods 6 feet 8 inches. What length should be cut off the small end to make one-fourth of an acre? This is indefinite, as it does not state how the length is measured. This may be in three ways: from center to center of the ends, on both edges, or on one. For all of these the method of solution is very nearly the same, but I give it here for the last only. In this case the side 20 is perpendicular to the two ends; the side opposite will be oblique to the ends and a little more than 20 in length. Produce the side 20 and its opposite till they meet and you will have two right-angled triangles, having for their altitudes 6 rods 10 feet and 5 rods 6 feet 8 inches, and you may call their basis 20 rods x and y. Letting x equal the distance from the side 20 rods 6 feet 8 inches to the vertex of the triangles. Then from the proportion 6 rods 10 feet : y rods 6 feet 8 inches :: 5 rods 6 feet 8 inches : y + 20 rods x and y. Letting x equal the distance from the side 20 rods 6 feet 8 inches to the vertex of the triangles. Then from the proportion 6 rods 10 feet : y rods 6 feet 8 inches :: 5 rods 6 feet 8 inches : y rods 15 feet 1\(\frac{1}{2}\) inches. The area of this triangle having 89 rods 15 feet 1\(\frac{1}{2}\) inches for its base and 5 rods 6 feet 8 inches for its altitude is 1,518 acres. Now let y equal the distance to be cut off the land described in the problem to give one-fourth of an acre and z be its side opposite to 5 rods 6 feet 8 inches. Then you have \(\frac{1}{2} \cdot (z + x) \cdot 6 \text{ feet 8 inches} = \frac{1}{4} \cdot 1,518 \text{ acres} = 380 \text{ acres,} \) which is the altitude of the triangle having y + 89 rods 15 feet 1\(\frac{1}{2}\) inches for its base. The area of this triangle is 1,518 acres + \(\frac{1}{4} \text{ acre}\), hence \(\frac{1}{2} \cdot (89 \text{ rods 15 feet} \cdot 1\frac{1}{2} \text{ inches} + y) = 1,518 \text{ acres} + \frac{1}{4} \text{ acre}\). Reducing these two equations to inches for convenience.

\[ \frac{1}{2} \cdot (z + x) \cdot 1097 \text{ inches} = 1568160 \text{ sq. in.} \]

\[ \frac{1}{2} \cdot 17803.3 \text{ inches} = 11092925.5 \text{ sq. in.} \]

Reducing and simplifying: y + 35606.6 = 5183968. Making the first member a perfect square, y + 35606.6 + 35606.6 = 5183968 + 35606.6, from which you have y = 1400.75 inches or 7 rods 2 feet, very nearly (or more exactly 7 rods 1 foot 11\(\frac{1}{2}\) inches +). Another method of solution is this: the areas of the two triangles given above are to each other as the squares of their bases, from which you can be found with-
out using a second unknown quantity, z. Still a third method is that of co-ordinates in the Infinitesimal Calculus. And they all give approximately 7 rods 2 feet, which is near enough for all practical purposes, unless Mr. McClure’s land is more valuable than that of the Fabulous Hydaspes of Horace.

CHARLES W. TUFTS, A. M.

SHEBOYGAN, WIS.

“Inquirer’s” problem, concerning a line from New York to San Francisco will be discussed next week.

GENERAL NEWS OF THE WEEK.

As the time for the inauguration of President Garfield approaches, Mentor is besieged more and more closely by the princes of patronage and their hordes of mercenaries. If the President-elect is not harrassed to death he will soon be on his way to Washington, where he has a pressing invitation to be present on the 4th of March and take a hand in the inauguration ceremonies, which promise to be the grandest Washington has witnessed since the war, possibly the grandest it has ever witnessed. It is believed that there will be at least 20,000 regular and volunteer troops in the review; the largest number ever seen in line on such an occasion in the history of the country. Of course the grand review immediately before the grand muster will be contested by the Boers, and since the war superseded this in the numbers of soldiers present; but that was not an inauguration occasion.

The Illinois Senate has passed the bill to impose a tax of 2 per cent. on all receipts of telegraph companies in this State. The vote was all but unanimous, standing 49 to 1.

The House Congressional Committee on Epidemic Diseases will report favorably the bill authorizing a commission of three experts to inquire into the codition of the school work at the High School. The following officers were elected: President, Rev. Noah Whiting, of Illinois; Secretary, S. H. Wise, of New York; Treasurer, D. S. Leach, of Illinois.

ILLINOIS.

A considerable number of schools, just how many we have not yet learned, went through the examinations prescribed by the proper authorities for all rural or graded schools desiring to compete for the prizes offered by the State Board of Agriculture for the best, second and third best exhibits of practical purposes, unless Mr. McClure’s land is unsafe to eat anything except corn bread and eggs.

least two weeks before the time of the contest. The program will present
the exercises by classes, and in the order named in the circular, the contest-
ants in each class being arranged in alphabetical order.
The annual meeting of the Association will be held in the High School
room at 7 o'clock p. m. All the contestants are requested to meet at the
same place at 6 o'clock p. m.
The contest will be in the Opera House, and the exercises will begin
promptly at 8 o'clock p. m.
The local member of the Executive Committee, Mr. Luther Foster, will
procure hotel accommodations for all who apply to him, at the rate of $1.25
per day. The Burnett House will be headquarters.
The High Schools of the following places have accepted the invitation to
participate in the contest: Monticello, Muncie, Independence, Cedar Falls,
West Waterloo, Maquoketa, Manchester, Tama City, Hamilton.

MARY HARTMAN, Marshalltown, { Executive Committee.
LUTHER FOSTER, Monticello.

The contest will be held at Monticello, Friday evening, April 26, 1881.

OHIO.
The Public library of Cincinnati cost $10,927.48 during the past year, but
the information gained from three books in it, which could not be found else-
where, at the time, saved the city at least $33,500 a year for the next ten years
on its contract with the gas company.

CALIFORNIA.
The Lick Observatory, Cal., will have, when the new telescope is made,
the most powerful instrument of the kind in the world. Its object glass is to
be three feet in diameter, and the cost of the whole will be $58,000.

EASTERN STATES.
Lafayette College, Eaton, Pa., has never received a dollar by direct be-
quiste.
The Chandler Scientific School of Dartmouth College has now had
three years' work, and has had the benefit of the following teachers:
Professor Carter, nine years; Dr. Chadlonrne, who has taught the course
of two years; and Professor Carter, three years, and an After six years.

The State certificated to furnish to the President of the State a
library, to be used in the instructing of the students, has now
been contributed to the University.

The educational progress of Tennessee during the past eight years has
been wonderful. In 1872, in some of the counties the schools were not a
single school, either public or private. In 1875, there were 3,042 schools in the
State; last year there were 5,542. In 1875, the average daily attendance was
20,332; last year it was 26,101.
The Kentucky Historical Society celebrated the birthday of Daniel Boone
this year, February 11.

STATE CERTIFICATES OF ILLINOIS.
The following are the most essential parts of a circular just issued from
the office of the State Superintendent of Illinois, setting forth the terms and
conditions on which these life certificates are issued, for the examination
and the time and places for the next annual examinations.

DEPARTMENT OF PUBLIC INSTRUCTION.
SPRINGFIELD, ILL., January 30, 1881.

The State certificates are granted to teachers of approved ability, in au-
ducacy, and successful experience, by virtue of authority conferred by the 50th
section of the school law. The clause of said section which conferred said
power is as follows:

"After a careful consideration of what is believed to be the true intent and
spirit of the law, and consultation with the presidents of the State Normal
Universities, it has been decided that applicants for State certificates should be
required to comply with the following:

TERMS AND CONDITIONS.
1. To furnish to the State Superintendent prior to examination, satisfaction
of good moral character.
2. To furnish to the State Superintendent satisfactory evidence of having
taken an approved professional course, and to have passed the examination,
shall have been in this State. This year in the State shall have been at
a time not more than five years previous to time of examination.
3. To pass a very thorough examination in Orthography, Reading, Mental
and Written Arithmetic, English Grammar, Modern Geography, History of
the United States, Algebra, the Elements of Plane and Solid (not including
Spherical) Geometry, and the Theory and Art of Education.
4. To pass a satisfactory examination in Natural Philosophy, Physical
Geography, Anatomy and Physiology, Botany, Zoology, Astronomy, Chem-
istry; as these are deemed essential to the highest success in some of the
improved methods of primary instruction, and as most of these branches are
now required for county certificates. But the examination in these branches
will embrace the rudimentary principles only.
5. To pass a satisfactory examination in the School Law of Illinois,
especially in those portions thereof which relate to the legal rights and
duties of teachers.
6. To write a brief essay upon some familiar topic announced at the

N. B.—At the examination in 1882 applicants will be examined also in
the Principles of Civil Government.

CREDENTIALS.
In respect to moral character, the only object is to be sure that the appli-
cant is, in all respects, morally fit for the place; and some form of evidence is required, so that
the fact of good character appears.
In respect to the length of time that an applicant has taught, his own de-
scription of it is made, and no certificate is granted unless a sufficient amount has been
spent in the State.
In respect to the question of success in teaching, written testimonials from
employers, or other responsible and competent persons acquainted with the
facts, will be required. The evidence upon this point is vital, and must be
clear and explicit."
THE EDUCATIONAL WEEKLY.

By "three years" teaching is meant three ordinary school years of not less than seven months each.

CONDITIONS PRECEDENT.

Satisfactory evidence relative to character, length of time taught, and success, must be furnished before a candidate can be admitted to the examination—it is a condition precedent, and should be transmitted to the State Superintendent, by each candidate, along with his application for examination, so that, if defective, due notice may be given, and that there be no loss of time in the inspection of credentials, when the day of examination arrives. Attention to these preliminaries is important; that there may be no loss of time in this, the application and credentials should be sent in by August 1. Persons who have attended an examination for State certificates at some previous time and propose attending this year again, must furnish transcripts of character and teaching covering the time since they were last examined.

Papers forwarded as testimonials must in all cases be originals. If any teacher wishes the originals returned, copies in lieu, for filing in this office, must be sent with the originals. When copies are so sent, the originals will be returned, but not otherwise.

None but teachers, of high character and distinguished professional ability will be appointed upon the board of examiners. As far as possible the holders of State certificates will be chosen for members of that board.

In determining the merits of the papers the examiners will be guided by the following principles:

The work of the candidates will be marked on a scale of 100; and 70 is fixed as the average to be required. For the whole examination, the minimum for those in each group fixed, as indicated below.

If a candidate reaches the required average and does not in any branch fall below the minimum fixed for it, he will receive the certificate. If a candidate reaches the required average for the examination, but falls below the minimum in one or more branches, he will be admitted to another examination in those branches, and will be held and passed in each with a mark as high as the average for the examination. Other candidates who fail will not receive any credit for work done.

GROUP I.—Minimum, 70:
1. Orthography; 2. Reading; 3 Arithmetic; 4. Grammar; 5. Geography; 6 Theory and Art of Teaching.

GROUP II.—Minimum 60:

GROUP III.—Minimum 50:

EXAMINATIONS.

Examinations will be held this year August 21, 24, 25 and 26 at the following places: Chicago, Dixon, Galena, Normal, Springfield and Central.

JAMES P. SLADE,
Superintendent of Public Instruction.

PHYSIOLOGICAL STUDIES.

We are glad to note reforms in our public schools a marked increase in the attention paid by teachers to physical education. Physiology and its important laws are generally neglected by parents in their home teachings, for various reasons; but there can be no good cause for not making this a systematic study in the schools. Children should be early taught the simple and natural laws that govern the body, the failure to observe which is sure to result in disease, and premature decay of the vital powers.

It is particularly important that primary teachers should understand the laws of health and instruct and stand guard over the little ones, who are so sensitive to every violation of health.

One of the most common instances of such neglect is exhibited by Hall's "Evolution of the Chick." It is a very interesting study of eggs, animals, and the various processes of reproduction, but is of a subject of such a nature that it is not adapted for the use of children. Among these there are many victims as are stricken down by the various diseases that result from habitual constipation. True consumption is an inherited disease. It may remain almost dormant, but when aroused to action, decay commences at a point circumscribed, and gradually extends—unless arrested—until so much of the lung becomes involved that vital action ceases. The evils of constipation result from inattention to the calls of nature, and usually commence with children whose habits are not clearly established by their parents.

The processes of nature are always active while life lasts. When effete matter is retained a moment beyond the time its expulsion is demanded, the there may be time for this, the application and credentials should be sent in by August 1. When the natural egress is checked, the absorptives carry the more fluid portions of the poisonous mass into the circulation, and it becomes diffused throughout the body. The more solid or chyle portion is forced into the lower rectum, where it becomes firmly impacted, thus cutting off the circulation in the small blood vessels, causing painful engorgements known as piles and hemorrhoids. A continuance of the original affliction is often the cause of this state. The flow of urine is seldom confined here. As a result of the blood poisoning we almost invariably find more or less dyspepsia, with decided derangement of the functions of the heart, liver, and kidneys, accompanied by headache and nervous debility, often verging on paralysis.

SCHOOL LAW.

IN IOWA.

MILLS AND MORRIS,
District Township Silver Lake.

On the 15th of March, 1880, the outgoing board of directors of the district township of Silver Lake changed the school house site from the N. E. corner of section 7 to the N. E. corner of section 8.

On the 20th of August, at a meeting called for the purpose, at which all the members of the new board were present, the board rescinded this order and relocated the school house site to the N. E. corner of section 7. From this order of the board, Mills and Morris appealed to the county superintendent, who reversed the action of the board; and from this decision, A. S. Colby, as president of the board, appealed to the Superintendent of Public Instruction.

The county superintendent reverses the action of the board on the ground that the board disregarded the desire and wish of a majority of the residents of the subdistrict and of the district township, as indicated by petitions. He seems to imply that this proves an unjust and malicious action, which gives him the right to reverse a discretionary act of the board. We fail to find anywhere in the law which gives the board the right, in such matters, to interfere with the wishes of the majority of the electors or residents, especially as expressed by the hap-hazard method of obtaining petitions and remonstrances.

As far as we can judge of the merits of the case, considering the future as well as the present, we think the location chosen by the board a desirable one, and believe they acted with the best motives, and with intention to do justice to all parties, in both the subdistrict and in the township.

We held in a late decision which we do not print in full: "We consider the action of the board of directors as having the same force with the finding of a jury, and the decisions of the Supreme Court are unanimous to the effect that the verdict of the jury cannot be set aside unless such verdict is contradictory to the evidence, but not upon a doubtful interpretation of the evidence. See State v. Clark, 39 Iowa, 338; Harper v. Spofford, 46 Iowa, 11.

The school law decisions of references to this same subject, showing that a county superintendent ought to affirm the action of a board, although he may not agree with the judgment of the board, unless there is proof of prejudice or malice, violation of law or manifest injustice. See Edwards v. District Township of West Point, p. 59 School Law Decisions of 1880. The expression, 'manifest injustice,' should not be construed to mean that the board superintendent may determine in his own mind that a different action would be more beneficial to the interests of the district than the action of the board, since the phrase means an absolute neglect of the rights and privileges of an individual or individuals." From prejudice to School Law Decisions of 1880, page 8.

As there is nothing to show malice or prejudice, much less a violation of either the action of the board or been affirmed, and the decision of the county superintendent is hereby reversed.

C. W. VON COELLN,
Superintendent of Public Instruction.

DE MOINES, January 4, 1881.

NATURAL HISTORY.

NATURAL HISTORY IN COMMON SCHOOLS.

THIRD PAPER.

Passing from the lower tribes of the family of the vertebrata, the fishes and reptiles, we come to the tribe of the birds and the mammals.

BIRDS.

The bird tribe live in the air, and are, like the reptiles and fishes, oviparous. Unlike these lower tribes of the family of the vertebrata, the birds have two legs, and they have a complete, double circulation, carried on by means of a heart with four cavities; thus: The blood is received in the first cavity from the veins proceeding from the system; by the second cavity is carried to the lungs, where it is oxygenized by exposure to the air; then returned to the third cavity, and from the fourth is borne by means of the arteries to every part of the system. The tribe are endowed with much cuteness of some of the senses, and are provided with feathers, to render them soft and warm. These feathers are of all possible colors in different species of the tribe, They have no teeth, but the jaws are furnished instead with a horny, protruding covering, called a bill. The bones are hollow, to insure lightness of frame; they are also lined with a delicate membrane, covered with minute bloodvessels, and the air passing through them reduces the specific gravity of the body greatly. The air from the lungs is also transmitted to various cavities or sinuses in the body, in the abdomen and other parts, and by this...
THE EDUCATIONAL WEEKLY.

EDUCATIONAL BOOKS.

Charles S. Venable, LL. D., Professor of Mathematics in the University of Virginia, has prepared a rudimentary work, An Easy Algebra for Beginners, which gives in the utmost simplicity the fundamental elements of algebra. The various terms employed in the study are clearly defined, and the pupil is carried along by means of clear and easy problems. (University Publishing Co., New York.)

First German Book, after the Natural or Pestalozzian Method, by James H. Worman, A. M., intended for beginners in the German language. It does not claim to be a grammar or a treatise on the language, but a system in which practical illustration of words and sentences is a leading feature. It is arranged in conversational style, with a view to interest the mind of the learner, and is to be used in connection with other German works by the same author. (M. S. Barnes & Co.)

A German Reader for High Schools, by WM. H. Rosenthau, A. M., Professor of German in the University of Wisconsin, is intended for the use of pupils in high schools who have finished the grammar course. It contains easy selections adapted to the wants of pupils, taken directly from the standard German editions, with questions which furnish a basis of conversation between teacher and pupil, making the book serviceable for written exercises. (G. J. Jones & Co., St. Louis.)

M. Tullii Ciceronis De Natura Dorum, with the Latin prolegomena, by F. Schoenauer, edited by Austin Stickney, from the text of C. F. W. Muller, Leipzig, 1876, is enriched with copious English summaries and notes. The introductory treatise on philosophy and rhetoric, in the spirit of enlightened modern criticism, showing their weakness in some points, but accomplishing with being much next to develop the Latin language so as to make it fit for the treatment of philosophical subjects, which is shown in the great benefit of mankind. (Ginn & Co.)

A great difficulty heretofore encountered by the student in geometry has been the use in the schools of methods so distinct at different schools as to cause the mind and retard advancement. As a remedy to this, A New Introduction to Geometry Upon the Analytical Plan, by J. F. Loud, Professor in Colorado College, is intended to give the student a clearer and more logical knowledge from the beginning, this volume being preliminary to a textbook in Analytical Geometry. It is intended to lead the student to the main stages. This volume is also intended for the use of those who only desire a practical knowledge of elementary geometrical principles, and require only so much of the theory as will suffice to render their use intelligible. (G. J. Jones & Co., St. Louis.)

A Graduating System for Country Schools, by Alice W. Wade, (New England Publishing Co., Boston.) A work of great value to teachers and managers of country schools, by an author who was himself for two years a teacher and superintendent of public schools. The book aims to supply for country schools the plan long in use in schools of higher grade—annual examinations of graduating classes, granting diplomas, forming alumni associations, and publishing catalogues, so that parents, teachers and pupils may be informed in terms of the work, to the mutual advantage of all. The author has shown a wonderful skill in gaining from the elementary school the practical illustration, just the matter adapted to his purpose. It is thorough and able discussion of the needs of country schools, representing the views of leading educators from all parts of the country. We are pleased to note the author's appreciation of an editorial on "The Use of Books of Reference for Elementary Work." When he quoting it is full due acknowledgment.

In the Art of School Management, by J. Baldwin, President of the State Normal School, Kirkville, Missouri, the aim is stated to have been to develop a system of control in harmony with the new practical education of the day. It is attempted to cover the whole subject of organizing, governing, and conducting schools. This volume, the author says, has literally grown during a quarter of a century spent in teaching teachers. It is expected to answer the purposes of a textbook in normal schools and institutes, a teacher's hand-book, and a reference book for school officers and parents. It is divided into ten parts, the topics of which are Educational instrumentalities, school organization, school government, courses of study and programs, study in teaching class management, examinations, records and grading, professional education, systematic progress in mathematics, and a treatise on the subject of school management that can be conceived. The style of the book is clear, and the arrangement natural. The author never hesitates to express his opinion with fairness, but is inclined to be dogmatic upon disputed points. (D. Appleton & Co.)

THE MARCH MAGAZINES.

The British Quarterly Review and the Edinburgh Review are now published in this country by Houghton, Mifflin & Co., under special arrangements with the British publishers, and from the original plates.

Appleton's Journal presents mainly a foreign bill of fare. With the exception of something in the literary department and a story by Bret Harte, Phillips, there is scarcely an article in the number on an American topic. Two of the most popular selections are "Swallow-row," the famous Russian general, and "The Criterion of Poetry," by Peter Bayne, who defies poetry as combining "the intense delightfulness of love with the intense delightfulness of freedom." In a study of the late George Eliot's "Rudin," the opinion is expressed that "her literary judgment was not equal to her reason and her imagination, and she took a great deal too much pains with the discursive parts of her books."

Monopoly is dealt with in extenso by the Atlantic. H. D. Lloyd giving the "Story of a Great Monopoly, in which railroads and oil companies figure in first place. The railroad and oil roads of the United States owe on stocks and bonds $4,400,000,000, more than twice this nation's debt of $2,280,000,000, and far the people annually $400,000,000, one and a half times more than the government's revenue last year of $274,000,000." The extortion, political corruptions and other sins committed by the railroad rings are set forth. The settlement of the railroad problem, the writer thinks, will decide whether the American democracy is to become extinct because the people had not wit or virtue enough to make the common good supreme. The "Standard Oil Company" is dealt with in a similar vein. This company "produces only one-fifth or sixtieth of our petroleum, but dictates the price of all, and refines nine-tenths." Other articles are: "The English Bar," "The English Church of To-Day," "The Genesis of Genius."

B. E. Martin, in Scribner's Monthly, is pursuing the work of describing the localities and buildings made famous by mention in Charles Dickens' works. In the March number there are illustrated ancient Holborn; Courtyard of the Marshalsea Prison, Church Street; Millbank; Jenny Wren's house, Limehouse Hall; the Hall of Lincoln's Inn, Mr. Tulkington's house, Chancery Lane; Clif ford's Inn, and the Nook of Staple Inn. To old Londoners these articles must be quite a treat. "Davy's 'Destroyer' is illustrated, and the genial faces of Mary and Charles Lamb are given from portraits by F. S. Cary. 'Striped Bass Fishing,' by Frances Bardon, would give any western angler a sense of envy that he could not be in the fun. "Glimpses of Persian Art" is the concluding paper of this series. "The Witch in the Glass," by S. B. Piatt, is elegantly illustrated by Mary Hallock Foote. "John Singleton Copley," a Boston-born artist, and "The Sketch of "Swallows and Amazons," in Europe, and died in 1915, is a beautiful tribute by his grand-daughter. Theodore Thomas contributed an article on "The Musical Possibilities of America." The editorial departments are well filled.

It is said that George Eliot had completed the plan of a new novel, which was to be her last, based upon country scenes and people.
MISCELLANEOUS BOOKS.

March's A B C Book, by F. A. March, LL. D.
An elementary work on the new phonic or sound method of teaching. It contains copious explanations of the new methods, for the benefit of teachers. (Ginn & Heath, Boston.)

Ficce Little Mice in a Mouse-Trap, by Laura E. Richards. (Estes & Lauriat, Boston.) Beautiful paper; delightful illustrations, and the funniest of small talk; all delightfully bound and ornamented. A rich treat for the cherubs.

Spicy gossip and interesting facts, showing how often the actor's part to supplement the author's work, and to put into his imaginary characters the life and soul of real personality.

The Lord's Prayer, Seven Homilies, by Washington Gladden (Houghton, Mifflin & Co., Boston), 192 pp., 16 mo. Seven short sermons by the editor of Good Company, suggested by the words of John Ruskin, "Can this Gospel of Christ be put into such plain words and short terms that a plain man can understand it?" and aiming to give a new sense of the wideness of range and fullness of meaning of the Lord's Prayer.

Volumes XI and XII of the Harvard edition of Shakespeare, by Rev. Henry N. Hudson, Professor of Shakespeare in Boston University. (Ginn & Heath), comprise the plays of Henry IV, parts I and 2, Henry V, and Henry VIII. The explanatory part and critical notes and glossarial index are more complete, and the text more intelligible than that of any other edition, and the verbal explanations are particularly valuable.

In Ginn & Heath's series of Annotated English Classics, we have Hudson's School and Family edition of Shakespeare, which, in its general arrangement and literary features, conforms to the Harvard edition, published by the same house. These volumes make a convenient pocket edition. The following have been received: King Henry IV, parts 1 and 2; King Henry V, King Henry VIII, King Richard III., and a Winter's Tale. The introductory matter in these volumes is very copious and entertaining.

Ballads and Other Verses, by James T. Fields. (Houghton, Mifflin & Co., Boston), 357 pp., 16 mo. Mr. Fields, in this little volume, has confirmed his claim to a good place among American poets. Most of the ballads and poems have been heretofore published, but all have a genuine freshness, a quaint humor, and a full supply of honest New England feeling that make them welcome everywhere. Many of his ballads remind us of Tom Hood, and his verses have the ring and rhythm that suit the popular taste.

Miss Parlo's New Cook Book, by Maria Parlo, Principal of the School of Cooking, in Boston. Another Cook Book, more or less, can make little difference; but when Boston does its very best, by giving us the experience of her leading authority in gastronomical science, we can but utter our thanks. Here are valuable suggestions in regard to marketing and kitchen furnishing, and in directions for the preparation of food, regard is had to economy no less than to excellence, and the recipes are bound in at the close of the book for additional recipes. (Estes & Lauriat, Boston.)

Sketches and Reminiscences of the Radical Club (Jan. R. Ogood & Co., Boston). This volume contains the record of the doings and happenings of that most famous club of modern Athens, known as the Chestnut Street Club. At its meetings the wider has been the range of topics for discussion, and the most brilliant thinkers and talkers have taken part in its conversations. Emerson, Whittier, Bartlet, Holmes, Webst, John Plask, Higginson,

Juliard Howe, and a host of others might be named. Among the topics discussed have been The Unseen, The Imminence of God, The Prayer Gauge, Woman, Marriage, Tragedy, The Comic, Indian Ethics and Newspapers. Mrs. Sargent is the editor, and she has given to the public an appetizing volume, with a good index.

On the Threshold, by Theodore T. Munger. (Houghton, Mifflin & Co., Boston), 16 mo., 308 pp. Of all the books for young men and women, just on the threshold of earnest and active life, few accomplish their purpose so admirably as this. The author's object is to lay clearly before young men some of the main principles that enter into life as it is now opening to them in this country. It is not a volume of good advice merely, but is full of sound reasoning without pedantry, and of strong suggestions, written from a hearty and sympathetic desire to bring young men face to face with the inspiring influences that, in a peculiar degree, surround them. Manly in tone, earnest in pur pose, and of a pure, clear and winning style, we wish this little book could find its way into the hands of every young person of either sex.

Sanskrit and Its Kindred Literatures; Studies in Comparative Mythology, by Laura Elizabeth Poor. Roberts Bros., Boston. The author's aim, in this book, is to show that the literature of different nations and different centuries is not many, but one; that certain prominent ideas appear at epochs apparently widely separated from each other; that each nation forms a link in the great chain of the development of the human mind; that there is a unity and continuity of literature from the beginning. The study of the Sanskrit language in late years has made this possible, and this book is an attempt so to interest people in the new discoveries in literature as to induce them to study for themselves. While it takes a wide scope, it exhibits a scholarship at once broad and thorough. From Brahmanism through Buddhism, Sanskrit, Persian, Greek, Latin, Celtic, Tungusic, Scandinavian, Anglo-Saxon, Germanic and Slavonic literatures to the modern poetry of Europe, the author brings her readers to see that modern literature is the "most elaborate expression of those ideas whose origin and growth" she has endeavored to trace. Even readers unacquainted with Greek and Latin will find the volume full of interest, throwing, as it does, a flood of light upon the origin and growth of literature, and of mythological conceptions.

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