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Vol. VII.

SAN FRANCISCO.

No. 1.

LECTURE ON THE BEARING OF RECENT DISCOVERIES IN PHYSICAL
SCIENCE ON THE "NEBULAR HYPOTHESIS."

BY JOHN LE CONTE, M.D.,
Professor of Physics in University of California.

[ABSTRACT.]

THE speculative views of Lambert and Kant led them to the adoption of a *Nebular Hypothesis*, and to the idea of a perpetual development in the regions of space. Sir William Herschel, after long hesitation, was ultimately led, by the surer path of observation and cautious induction, to the adoption of similar views, in relation to the existence of a self-luminous substance of a highly attenuated nature, distributed through the celestial realms. At a later period, in 1811, he communicated to the Royal Society an exposition of his famous hypothesis of the transformation of nebulae into stars.

Sir William Herschel made no attempt to extend his hypothesis to a *cosmogony* of our solar system. If, therefore, the "Nebular Hypothesis" is restricted to the theory which professes to explain the *genesis* of our solar system, it is only *analogically* related to the loftier speculations of Sir William Herschel, in regard to the processes of star-formation going on in the stellar realms. In this restricted sense, the "Nebular Hypothesis" is due to LAPLACE. This illustrious mathematician, with a modesty and diffidence befitting a true philosopher, endeavored to lay rational foundations for a cosmogony of the solar system. This sublime speculation has been egregiously *misunderstood* and *misrepresented* alike in itself and in its tendencies.

The lecturer proposed to *disconnect* Laplace's Nebular Hypothesis, from the question of the *general diffusion* of *cosmical*

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vapor in the celestial regions. Indeed, the origin of Laplace's hypothesis did not lie in Herschel's speculations in relation to the transformation of nebulae into stars and clusters of stars. In contemplating our solar system, he discerned numerous harmonies and adjustments, which were not accounted for by the law of gravitation, which induced him to infer that all its members were of *one family*—of a *common origin*. The Nebular Hypothesis was framed to explain and co-ordinate these facts, and, if possible, to refer them to established mechanical principles. Under this view, the lecturer considered the Nebular Hypothesis in *two* aspects—viz: As a *pure hypothesis*, framed to explain the arrangements of the solar system; and as a *physical reality*, indicating the *actual process* by which the phenomena were evolved or produced.

1. As a Pure Hypothesis.

Notwithstanding the number of orbs of which the solar system is composed, and the consequent almost *infinite variety of their possible dispositions*, the following coincidences—*wholly independent of the law of gravitation*—are found to obtain: 1. The sun rotates on his axis from *west to east*. 2. All the planets, (now 104 in number) revolve about the sun from *west to east*. 3. All the planets, (as far as known,) rotate on their axes from *west to east*. 4. All the satellites, (excepting those of Uranus and Neptune,) revolve about their primaries from *west to east*. 5. All the satellites, (as far as known,) rotate on their axes in *same direction* in which their primaries turn on their axes. 6. All the planets, (with the exception of a few minute asteroids,) revolve about the sun, nearly in the *plane* of the solar equator. 7. All the satellites, (as far as known,) revolve about their primaries nearly in the *planes* of the equator of their respective planets. 8. All the planets, (with the exception of a few asteroids,) have orbits of small eccentricity. 9. All the satellites have, in like manner, orbits of small eccentricity.

These *nine* (9) *independent coincidences* in the arrangements of more than 127 separate bodies, cannot be supposed to be *fortuitous*:—they naturally suggest the existence of some *grand and comprehensive law*, pervading the whole solar system. That they are not *consequences* of the law of gravitation, is evident from the fact, that the comets *transgress* every one of these laws which could be applicable to them. According to the laws of *probability*, the *chances* against the concurrence of so many unconnected phenomena, is almost *infinite*. Laplace estimated that the chances were *four millions of millions to one*, that these were *not* arbitrary accidental phenomena. Since his time, facts of a similar bearing have largely accumulated, and the chances against their fortuitous concurrence are *now* almost beyond the power of numbers to express. “The *co-ordination* of these divers and unconnected phenomena,—the *grouping* them into one coherent and harmonious scheme,—the referring them to one common

cause and origin, and thereby imparting to this fair work of the Eternal the semblance of a Unity worthy of a Divine Idea,"—these were the sublime and lofty aims of the famous "Nebular Hypothesis" of Laplace. He imagined "that this consummate fabric—this gorgeous planetary scheme—like the blossom, had a bud;—and deeper yet, that it had a mysterious germ, within which rested the necessities of its present glorious unfolding"! "He sought, by penetrating the deep recesses of the past, to reveal the mystery of its development, and conceived the bold thought of portraying the *modus operandi* of the genesis of our Solar System."

In its original form, the Nebular Hypothesis required three (3) assumptions, viz: 1st, An agglomerated Nebulous mass; 2d, That this mass be rotating about its centre of gravity; and 3d, That it be incandescent from excessive heat. The successors of Laplace have endeavored to simplify the hypothesis, by showing that rotation of the nebulous mass, and, perhaps also, its incandescence, may be simple consequences of the processes of aggregation.

ORIGIN OF ROTATION.

The lecturer proceeded to show that if we suppose the great nebulous mass to have been a continuous gas or fluid, symmetrical in form, and either homogeneous or heterogeneous in structure, provided the component strata were homogeneous in themselves—"the fundamental principles of mechanics assure us that the process of cooling and condensation by contraction, would not generate a motion of rotation." Nay, more; he thought it was very difficult to conceive the mechanical possibility of a continuous gaseous or liquid mass of any form—whether homogeneous or otherwise—acquiring a motion rotation by the internal motions of its several parts. The mass being isolated, and out of the sphere of external forces;—all of its parts being in inter-communication through fluid continuity;—how can we reconcile a generation of rotation in the whole mass, with the fundamental principles of the equality of action and reaction? Any force, that begins and ends in a body—whose parts are in continuous material connection—cannot impart motion to the whole mass—whatever relative movements might be communicated to portions of it.

The lecturer was disposed to look for the origin of the primitive rotation of the nebulous mass in the discontinuous structure of the primordial nebulous matter. Adopting Sir John Herschel's idea, that the nebulous condition indicates not the gaseous, but the cloudy form of matter;—we must look upon nebulous masses as consisting of discrete portions of matter—of various density and bulk—aggregated into special forms, under the influence of mutual attraction. By the gradual subsidence and condensation of these discrete particles by the effect of gravity, a central aggregation or nucleus would be formed—the

germ of our sun. Let us hasten to see what light this view throws upon the physical cause of the rotation of the primitive solar nebula. It is obvious that a crowd of aggregating bodies, animated by independent and partially opposing impulses, must produce collision, destruction of velocity, and a subsidence towards the centre of attraction. It is also evident that those impulses which conspire or remain outstanding after such conflicts, must ultimately give rise to circulation or rotation of a permanent character about some axis. It will be observed that the causes imparting motion to the central mass are, in this view, entirely exterior to it. For the subsiding and conflicting bodies, being discrete and independent of each other, act like the impinging of a comet or any cosmical mass, on the central nucleus. Under this aspect, the Nebular Hypothesis becomes identical with Sir John Herschel's "Theory of Sidereal Aggregation"; the only difference consisting in the magnitudes of the aggregating bodies.

ORIGIN OF INCANDESCENCE.

Instead of supposing that the *primitive* or *chaotic* condition of matter was *intensely hot*, is it not more rational to suppose that it was originally *deficient in heat* or *cold*, and that the high temperature was *subsequently developed during the processes which brought about its organization?* According to the preceding view of the structure and constitution of a nebulous mass, the idea of the chaotic matter being maintained in a *diffused* and *attenuated* condition through the agency of *heat*, is by no means *necessary*. Indeed, the assumption that the primitive matter of the universe existed in a diffused gaseous condition, through the agency of *excessive heat*, is itself, *prima facie improbable*. If it was absolutely *universal*, what became of the heat, and how did the cooling and condensation commence? Even if we suppose that the chaotic matter existed in enormous *detached* masses, what an *inconceivable amount of heat must have been created*, merely to be dissipated throughout the infinitudes of space! Such a view ill accords with our conceptions of the economy of the Creator's operations.

According to the views previously announced, the *original* concentration of the nebulous matter about a central nucleus, was *not the result of cooling and contraction*, but of a gradual process of *aggregation of discrete bodies under the action of mutually attractive forces*. Now, in the collisions and frictions necessarily incident to this process of aggregation, we have an indefinite supply of heat. The establishment of the "Dynamical Theory of Heat," on the sure basis of experiment and observation, assures us, that when motion is checked or arrested, it is transformed into heat. Hence, we see that the collisions and destruction of velocity, incident to the process of aggregation, while imparting a motion of rotation to the nebulous mass, at the same time evolved heat, more or less, throughout its struc-

ture—and especially towards the nucleus, where the bodies, whose velocities had been checked, were gradually subsiding. The larger portion of the “dynamical energy” of the crowd of bodies aggregating towards the nucleus, was thus transformed into heat—a smaller portion remaining in the motion of rotation of the solar nebula. This view makes the heat and light-producing process continuous and gradual, and the true gaseous and fused conditions of the nebula, subsequent states, induced by the evolution of intense heat.

We thus reach a lofty point of view. Given, diffused, or chaotic matter, and mutual attraction, and the whole machinery of the Nebular Hypothesis is set in action! The “star-dust,” or “world-stuff” begins to aggregate—heat is evolved—rotation is imparted—and all the apparatus required for the formation of suns, planets and satellites, is established!

GENESIS OF THE SOLAR SYSTEM.

Assuming that the processes of aggregation and heat-evolution had so far progressed, that the rotating spheroid consisted of a more or less continuous mass of liquid or gas, extending far beyond the orbit of Neptune—and we are furnished with all the conditions assumed by Laplace.

It is unnecessary to follow the lecturer in his exposition of Laplace’s reasoning, by which it was shown, upon mechanical principles, that, as the rotating spheroid slowly contracted and condensed by the gravitation of its parts towards the centre, and the process of cooling at its surface, the rotation must necessarily be accelerated, and, consequently, the centrifugal force augmented—particularly at its equatorial parts. In fact, this could not be done without the use of illustrative diagrams. Suffice it to state, that the final result would be, the development of a system of planets, revolving in a common direction around a vast central solar mass, with subordinate systems of satellites circulating in a like direction around their primaries. These are precisely the arrangements which are found to exist in our solar system.

HYPOTHESIS TESTED BY THE PHENOMENA.

Assuming that the primitive solar nebula rotated on its axis, as the sun does, from west to east, the following consequences were deduced from the theory, viz: 1st. All the planets should move around the sun from west to east. 2d. All the planets should rotate on their axes from west to east. 3d. All the satellites should rotate on their axes from west to east. 5th. All the planets should revolve about the sun in orbits nearly co-incident with the plane of the solar equator. 6th. All the satellites should revolve about their primaries nearly in the planes of the equators of the respective planets. 7th. All the planets should revolve in orbits of small eccentricity. 8th. All the satellites should revolve in orbits of small eccentricity. 9th. The central mass—the

sun—should rotate on his axis in less time than any of the planets revolve about him in their orbits. 10th. The primary planets should revolve on their axes in less time than any of their satellites revolve around them; and 11th. The central mass, left after the process of genesis was completed, should contain a much larger quantity of matter than the sum of the masses separated. All of these arrangements, (with a few unimportant deviations,) were shown to exist in the solar system. Recapitulating these coincidences, we obtain the following significant results—viz:

8 planets	satisfy	3	of them,	making	24	co-incidences.
6	“	“	1	“	“	6
3	“	“	1	“	“	3
5	“	“	1	“	“	5
96 asteroids	“	“	3	“	“	288
13 satellites	“	“	3	“	“	39
22	“	“	1	“	“	22
1 sun	“	“	3	“	“	3

Total, 390 co-incidences.

“We thus see, that there are no less than 390 independent phenomena—of which the law of gravitation gives no account—which are simple consequences of the Nebular Hypothesis. In the aggregate, they imply a very large number of facts—complex—diverse—unconnected with each other—having no mutual dependence—all accounted for by a simple supposition, and the aid of the known laws of matter and motion.” It can hardly be denied that, regarded as a pure hypothesis, framed to account for a certain set of facts, its remarkable success in explaining them invests it with a high degree of probability.

It was admitted that the theory had encountered some apparent difficulties—some want of co-incidences—the most serious one being the retrograde direction of revolution of the satellites of Uranus. It was shown that this anomaly might be reconciled with the Nebular Hypothesis during the first stages of planet-formation.

STABILITY OF THE SOLAR SYSTEM.

But it has been asked, may not these co-incident phenomena be explained by other means than the Nebular Hypothesis? May they not be arrangements instituted by the Creator, for the purpose of giving perpetuity to our solar system, and making the planets suitable habitations for organized beings? And do we not transgress the legitimate domain of scientific research in attempting their explanation?

In reply to this, it was urged that such a view implies a total misconception of the doctrine of final causes. In such inquiries, “we are not to assume that we know the object of the Creator’s design, and put this assumed purpose in the place of a physical cause.” In these provinces of speculation, “the principle of final causes is no longer the basis and guide, but the sequel and result of our physical reasonings.” “As physical science ad-

vances, final causes do not disappear. The principle of design changes its mode of application, but loses none of its force; it is merely transferred from the region of facts, to that of laws." We do not consider the sun as less intended to warm and vivify the tribes of plants and animals, because we find evidences that the earth and the other planets were developed in the vast periods of past ages, from a common nebulous mass! We are rather, by the discovery of so general a law, led into a scene of wider design—of deeper contrivance—of more comprehensive adjustments. "The object of such views is not to lead to physical truth, but to connect such truth—obtained by its proper processes and methods—with our views of God—the master of the universe."

But even admitting this application of the principle of final causes, it was shown, that the conditions of stability of the solar system, and its adaptability to living beings, are totally insufficient to account for all the observed co-incidences. There are many other phenomena in the arrangements of our system, which have no relations to these ends or purposes. It was shown, that there are no less than seven (7) sets of phenomena, of which the principle of final causes affords—as far as we can see—no explanation.

The Nebular Hypothesis not only accounts for and co-ordinates all the arrangements of the solar system, but the conditions of stability and adaptability to living beings, are simple consequences of its mode of genesis! Does not the cheering doctrine of final causes—of design and purpose—become strengthened and invigorated by leading us to a view so comprehensive? "How simple the means—how multiform the effects—how far-reaching and grand the design!" How deeply they impress us with the wisdom, power and glory of the Creator and Governor of the universe!

2. Nebular Hypothesis as a Physical Reality.

We now come to consider the physical reality of the fundamental assumption of the Nebular Hypothesis. Have nebulous masses a real existence in the universe? Is the Star-dust—the World-stuff—a physical reality, or a mere figment of the brain of the theorist? If the actual existence of self-luminous nebulous matter—the chaotic elements of future worlds and suns—can be established—the fundamental assumption of Laplace loses the character of a pure hypothesis: his conception becomes a physical theory, which, in proportion as it is verified by phenomena, approaches the domain of fact,—a *vera causa*.

It was shown that the highly-diffused and attenuated matter constituting comets, as well as that constituting the zodiacal light,—while affording some suggestive analogies to nebulous masses,—do not furnish examples in all respects identical with the supposed nebula of Laplace. We are, therefore, compelled to fall back on Sir Wm. Herschel's opinion, that there are nu-

merous nebulae, which really consist,—not of clusters of stars, but of a diffused, self-luminous, vaporiform matter. Such bodies are, beyond all question, self-luminous, but the question is, are they clusters of stars or true nebulae? In other terms, are they optically or physically nebulous?

For a long time, this question was keenly discussed, and opinions fluctuated in regard to the tenability of the fundamental assumption of the nebular hypothesis. It is well known that since 1846, the tendency of telescopic observations, as revealed by the magnificent instruments of Lord Rosse, and corroborated by the splendid achromatic of Harvard University, has been to break down Sir Wm. Herschel's distinction between stellar clusters and true nebulae. After the sword-handle of Orion was broken into glittering fragments, shining with separate and distinct lustre, Sir John Herschel himself was disposed to abandon the opinion of his illustrious father.

But the development of a new and wonderful branch of physical science, has recently furnished the most satisfactory proofs of the reality of such bodies. We allude to the application of Spectrum Analysis to the study of the Celestial Bodies. The well-matured speculations of Sir Wm. Herschel, and the mathematical theory of Laplace, have been vindicated from the doubt under which they have been laboring, and the early nebulous condition of the cosmical matter has been demonstrated. The accomplished Sir John Herschel has been permitted to witness the complete verification of the previsions of his illustrious father; to see the link connecting the past with the present in the cosmogony of the universe,—which seemed to have been almost ruptured by the extension of telescopic vision,—restored and strengthened, by this new branch of physical investigation.

Until recently the light from the heavenly bodies, even when collected by the largest telescopes, conveyed to us but very meagre information. With regard to the moon, sun, and some of the planets, in addition to their form and size, we have been able, by this means, to obtain some slight knowledge of their physical structure. But, with reference to the myriads of stars, clusters, and nebulae which people the depths of space, the telescope reveals little more than variety in color, brightness, and shape. (In relation to the nebulae, this was illustrated by diagrams contrasting the appearance presented by the same objects when viewed in the telescopes of Sir John Herschel and of Lord Rosse.)

The discovery of "Spectrum Analysis,"—the optical Analysis of Light—enables us to interpret *symbols and indications hidden within the light itself*. Wherever the tiny waves of light—the swift messengers of the celestial realms—can penetrate, they bear with them intelligence of their *origin*! "Bodies, so remote that astronomers fail to give us an idea of their distance, are brought, as it were, into our grasp, and are analyzed with certainty! We

recognize in them the same elements which compose the soil we tread—the water we drink—the air we breathe!”

Before proceeding to explain the manner in which this new method of investigation decides the question of the existence of *true nebulous masses* in the regions of space, it is necessary to recall certain well-known and long-established principles in optical science. In 1675, the immortal Newton demonstrated the composite nature of solar light. When a ray of sunlight is made to pass through a glass prism, it is refracted and spread out into a fan-like band, so as to exhibit exquisite gradations of color, from *red* at one end to *violet* at the other: This constitutes the Prismatic or Solar Spectrum. In 1802, Wollaston discovered that this spectrum is not *continuous*, but is interrupted by a number of *dark lines*. In 1815, Fraunhofer, by great improvements in the optical arrangements employed, rediscovered these lines,—ascertained that their relative distances from each other were *fixed* for sun-light—and succeeded in mapping no less than 50 of them as belonging to the solar spectrum. Since that time, the number of these lines has been increased to *thousands*. The sagacious Fraunhofer traced these same dark fixed lines in *reflected* as well as in direct solar light:—he found them, quite unaltered in position, in the spectrum of Moon-light and Venus-light. He, likewise, discovered, that the spectra of the fixed stars contained dark lines *differing* from those seen in the solar spectrum. He thence drew the important conclusion, that these lines have their *origin in the luminary*. Fraunhofer thus *opened* the inquiry; but the explanation and import of these lines were reserved for a subsequent epoch.

THREE ORDERS OF SPECTRA.

Modern investigations have established the existence of *three orders of spectra*, depending upon the *source of the light*. 1st. A *continuous spectrum—uninterrupted by lines*—is produced, when the light emanating from *solid and liquid incandescent bodies*, is passed through a prism. 2d. A *spectrum interrupted by bright lines* is produced when the light emanates from *flames, or ignited vapors and gases*. 3d. A *spectrum interrupted by dark lines*, is produced, when light emanating from a source giving a *continuous spectrum*, is passed through *gaseous or vaporous matter* giving spectra of the second order.

Now, it has been found, that when various elements are *volatilized* in the flame of a lamp, the light gives a spectrum interrupted by *bright lines*,—whose *character and position* are *different for different elements*. It has, also, been discovered that the *dark lines* of spectra of the third order, *correspond precisely in position* with the *bright lines* in spectra of the second order:—They thus indicate the existence of *elements* which are *volatilized* in the ignited vapors or gases. The coincidence of position of these *bright and dark lines* were first observed and described by Fou-

cault, of Paris, in 1849; but their real significance was first indicated, in 1859, by Kirchhoff, of Heidelberg. These delicate lines carry across the immeasurable abysses of the celestial spaces evidences of their *origin!*

The numerous lines of the spectrum are *separated* from one another,—the *fan of light* is *opened out*,—its entire *pattern* is brought distinctly under view,—and all of its minute *details* are revealed,—by transmitting the light through a *succession of prisms*:—This constitutes the *Spectroscope*. (This was illustrated by a diagram.)

By means of the Spectroscope, no less than fourteen terrestrial elements have been identified as existing in the sun's atmosphere. Mr. Wm. Huggins and Prof. W. A. Miller, by ingenious modifications of this instrument, have been able to extend spectrum analysis to more than sixty of the *brighter fixed stars*. Like our sun, they give spectra with *dark lines*; thus indicating that the stars (as the sun) must have intensely heated *solid or liquid nuclei*, surrounded by *ignited gaseous atmospheres*.

NEBULÆ.

Encouraged by his success with the fixed stars, Mr. Wm. Huggins applied the potent method of *spectrum analysis* to the examination of the *nebulae*: He was rewarded by a most important discovery in relation to the *physical constitution* of these wonderful objects. On the 29th of August, 1864, he applied his spectroscope to a *planetary nebula* in Draco. He was astonished to find that there was no appearance of a band of colored light, such as a star would give; but, in place of this, there were three isolated bright lines on a dark ground—a true gaseous or vaporous spectrum. In other words, the object was not a cluster of stars, but a true nebula. Mr. Huggins was not slow in following up this line of investigation. During the two years succeeding his first observation, he examined the spectra of more than sixty Nebulae and Clusters. Of this number about twenty gave spectra with bright lines; that is, were gaseous bodies. The remaining forty gave stellar spectra. Among the true nebulae may be mentioned, the Annular Nebula in Lyra; the Dumb-bell Nebula; and the great Nebula in the Sword-handle of Orion—concerning the nature of which there has been so much discussion.

INFERENCES.

These spectrum investigations afford tangible and unmistakable evidence that there are in space, masses of ignited gaseous or vaporous matter of prodigious extent, shining by their own light, and resembling the vast nebula which the Nebular Hypothesis declares to have been the original condition of our solar system. The nebulous matter, assumed as the basis of the hypothesis, is no figment of the theorist!

What great results have been achieved by the power of means

apparently the most trivial! Immense objects, seemingly unattainable, have been grasped by the smallest conceivable handle! A little instrument, which is scarcely anything more than a small triangular piece of glass, solves questions which hundreds of thousands of dollars expended in telescopes, and years of observation could not have settled! Penetrating into the illimitable depths of space, it reveals to us something of the physical and chemical constitution of stellar clusters and nebulæ, so remote, that the light which the spectroscope analyzes, must have left them thousands, perhaps millions, of years ago!!

HUMILIATING AND EXALTING VIEWS OF SCIENCE.

The lecturer concluded with the following reflections, which are given without abridgment:

In contemplating the *vastness* of the sidereal universe, every person, in every age and country, must recognize as irresistibly *natural*, the train of thought expressed by the Hebrew Psalmist, when he exclaims: "When I consider thy heavens, the work of thy fingers; the moon and the stars, which thou hast ordained: What is man, that thou art mindful of him? and the son of man, that thou visitest him?" (Psalm viii. 3-4.)

How incalculably has this *withering sense of insignificance* been augmented by modern telescopic excursions into the remote recesses of the stellar universe! When, by measurements, in which the evidence of the *method* advances *pari-passu* with the *precision* of the results, the volume of the Earth is reduced to less than the *one-millionth* part of the volume of the Sun; when the Sun himself transported to the region of the stars, takes up a very *modest place* among the thousand of millions of those bodies revealed to us by the telescope; when the ninety-five millions of miles which separate the Earth from the Sun, by reason of their comparative *smallness*, have become a base totally insufficient for ascertaining the dimensions of the visible universe; when even the swiftness of light barely suffices for the common valuations of science; when, in short, by a chain of irresistible proofs, certain stars and nebulæ have retired to distances that light *could not* traverse in less than *millions* of years: we feel as if *annihilated* by the *immensity* of the scale of the universe! In assigning to man, and to the planet he inhabits, so small—so *insignificant*—a position in the material world, science seems only to have made progress to *humiliate* and to *humble* us!

Let us accept the *lesson of humiliation*, with a proper sense of reverence! But, while *humbling* ourselves in the presence of the overwhelming vastness of God's creation, let us *not degrade* ourselves: let us not imagine, that so insignificant—so ephemeral a being—groping about on so *minute a speck* in the universe—is totally *unworthy* of a Creator's care: or entertain the *debasement* idea that there is *no life—no hope*—beyond this transient state of existence! Such a view is *not* the legitimate result of the

proper sense of *humility* which true science demands. She teaches us that *grand humility*, which annihilates *self*, and places the soul as a child-like learner in the face of God's universe! Like the sacred Shepherd, with *unsandalled* feet, we advance with reverential awe upon the holy ground,—and receive assurances, that our minute sphere is benignly noticed by the eye of *omniscience*; that, amid the surrounding grandeur, *man* is *not overlooked!*

But let us not forget, that there is *another aspect* under which such contemplations may be viewed, which is calculated to *exalt man* in the scale of creation. When we reflect on the *extreme feebleness* of the natural means by the help of which so many great problems have been attacked and solved: if we ask ourselves, *how* such results have been attained? *How* have we been enabled to assure ourselves of this stupendous scale of creation? of the resplendent glories of the illimitable realms of space? The feeble being resumes all his wonted *dignity!* By the side of such wonderful achievements of the *mind*, what signifies the weakness and fragility of our *body*; what signifies the dimensions of the planet—our residence—the grain of sand, on which, it has happened to us, to appear, for a few moments!!

From this point of view, man is *exalted* to his *true dignity*, through his *spiritual* and *intellectual* nature. A mind capable of accomplishing such results, must, indeed, be an emanation from Deity! We must have within us some *feeble spark* of Divinity! Yes! there is a LIFE and a HOPE *beyond and above this transient existence!!*

“’Tis the Divinity that stirs within us,
 ’Tis Heaven itself that points out an hereafter,
 And intimates Eternity to man.”

Yes! the *lofty aspirations* of humanity are *not delusions*; they are *Realities*: They link us with a *purser* order of existence, which makes us *heirs of immortality!* We repose under a *confident* and *unwavering assurance*, that in God's own time, these *earth-mists* will be dispersed, and the dim twilight of conjecture will yield to the *glorious unclouded noonday of knowledge!!*

MORAL TRAINING IN OUR COMMON SCHOOLS.

New England is the mother of our Common School System. She may have erred in her devotion to *moral principle*. Her notion that no government was good for anything unless it commanded the respect of man's moral nature, may have been a fallacy, but the time is coming when the people of America will universally acknowledge that she was right, at least in one dogma, that the children of a community should be thoroughly trained in their morals, and to habits of industry and politeness. Extremes are always dangerous, but there are times in history as well as in medical practice when severe measures are best.

We should not despise the dirty channel through which the mountain stream is filtered, neither should we despise historical periods or characters because disagreeable to us. We sometimes sneer at the asceticism of the old world, but we little think that some of its evils were the stepping-stones of the world's reformation. Italy, in its decline was reeking with vice, and we read of great wrongs perpetrated by those who hoped to make her better. Yet who cursed her more, the monarch striping his own flesh in penance for his own crimes, or the man who struck down Tiberius Gracchus for uplifting the wretched poor of Italy—that ill-fated land of beauty—home of Petrarch, Dante, Brunelleschi and Raphael? And who will curse this land the most to-day? The religious fanatic? I say no! But he who places the hand of sacrilege on the education of our poor, and the education of woman.

A nation without moral culture is like an apple, golden without, but rotten within. Religious bigotry and fanaticism are not moral culture. One may be an intense bigot and have no fine sense as to what is Right or Wrong. The very nice distinction as to what is just or unjust, true or false, pure or impure, may be thoroughly inculcated without the bias of creed, and the nation that will allow its children to grow up destitute of this culture, planting the seeds of a greater evil to avoid a less one, is sadly ignorant of the laws of self-preservation.

Republicanism is a two-edged sword, and he who uses it must beware of its backward thrust! It is too dangerous for a Godless and immoral people; and self-government as a nation can be noble and safe only on the basis of true moral culture among the masses. Where must this culture begin and be given? One will naturally answer, "*At Home.*" Alas! for the home influences of thousands of the poor boys who crowd our public schools! It is such that drives them to the wharf, thence to the gallows. With this destitution of home training, has a city, a state, a nation no right to step forward and say, I will protect my children from crime and ruin, and preserve my citizenship from vice? When it shall be too late the parents of this people will look on the wild, ungovernable passions of their children, that are now allowed to run riot, with shame and cursing. So stringent are our laws in regard to such training in our schools, that teachers, fearing to meddle with questions that may bring them into trouble, actually avoid all instruction in regard to morals; and in some schools not even the softening influence of a simple chant is ever brought to bear on the rough, uncouth characters that are growing up therein. Can we blame these teachers? They are workers and must obey. Let any one devote a week, or a month in mixing among the children of this city, or any large city, and note the increase of pernicious habits among them. Smoking is as common among children, between the ages of seven and twelve, as among men. Profanity, vulgarity, lying

and even worse things are becoming rampant. No one attacks these things, because political schemers may make capital out of it; therefore it is considered best to let it slide and hire a truant officer to keep the annals of our Industrial School filled. Perhaps this is as it should be. It may be, that being a daily worker among these children, I may be too intensely interested in their welfare. It is because I see in them the men and women who are to make this country the glory or the shame of the world.

The children of this age are too lawless. They ignore all righteous authority. Even in their own homes many of them at twelve years of age are their own masters. The result is they are loose and ungovernable in both temper and habits. Fortunate is that child who inherits at birth a high sense of self-respect, for he is comparatively safe; but the rampageous thousands who swarm our streets and schools, if not properly checked in their indolence, impudence and general license of speech and habits, will make a sorry generation of citizens. Surely no one who is honest in principle, Jew or Gentile, Protestant or Catholic, but must admit that this growing evil among children is dangerous. And in making this plea for a more strict enforcement of whatever rules there may be for the protection of the morals of our public school children, I do not necessarily urge the adoption of any religious creed, dogma or ceremony.

Protect the *children* of this Nation from vice, and religion will take care of itself. Keep their habits pure, their language respectful and their hours industrious, and fanaticism will do them no harm. Let the parents require a strict account of every moment after school closes from their children, and do not trust too much to the teacher to care for, or to form their characters, for the laws are too stringent on these nice points of controversy. These remarks are applicable to all large cities, but as San Francisco is yet in her youth, she will be wise if she cares for this evil in time.

L. T. F.

SAN FRANCISCO.

THE EDUCATIONAL MEETINGS to be held in Trenton, New Jersey, on the third week of August, promise to be a distinguished success. Three great National Associations hold their annual meetings there that week. The Association of State Superintendents meets on Monday, that of Normal School Principals and Teachers on Tuesday, and the general Association of Teachers on Wednesday, Thursday and Friday.

The arrangements for these meetings are already considerably advanced towards completion. Papers or Lectures have been promised from the following distinguished educators:

Address by the President, Rev. L. Van Bokkelen, late Superintendent of the Public Schools of Maryland.

Rev. Joseph Alden, D.D. L.L.D., Principal of the State Nor-

mal School, Albany, N. Y.: "What is the Best Teaching for a Normal School?"

Prof. Z. Richards, of Washington, D. C.: "Elementary Schools, Radical Faults, Radical Remedies."

Rev. Geo. A. Larkin, Baltimore: "Periodic Law as applied to Education."

Prof. Ellis A. Apgar, State Superintendent of New Jersey: "Method of Teaching Map Drawing in Schools."

Prof. Austin C. Apgar, State Normal School, Trenton, N. J.: "Method of Teaching Elementary Arithmetic."

Major-General O. O. Howard, U. S. Army: "Education in the South, with reference to the Colored Population."

An exercise in "Practice Teaching," with criticism, and a discussion as to the necessity of such an exercise in a Normal School, and the best method of conducting it.

Prof. Edward A. Brooks, Principal of State Normal School, Millersville, Pa.: "The Spiritual Element in Education."

Prof. Fordyce A. Allen, Principal of the State Normal School, Mansfield, Pa.: "Course of Study for a Normal School."

Prof. Lewis B. Monroe, of Boston: "The Voice and its Training," with illustrations and readings.

Prof. John S. Hart, Principal New Jersey State Normal School: "Method of Conducting Religious Worship in Schools."

Mrs. Randall, of the Oswego Training School: "Method of Teaching Elocution." Readings.

Miss Swayze, of the New Jersey State Normal School: "Vocal Culture." Readings.

John D. Philbrick, Esq., Superintendent of Public Schools of Boston: "The Workshop and the School."

Rev. B. G. Northrop, State Superintendent of Connecticut: "Rate Bills in Public Schools."

Prof. J. P. Wickersham, State Superintendent of Pennsylvania: "Higher Education."

Mr. White, of Boston: "Christianity in our Public Schools."

STATE CERTIFICATES.

STATE Certificates have been issued to the following teachers:

FIRST GRADE.

Miss Sarah P. Lillie,	Miss Marietta J. Gould,	Mrs. Emily T. Loag,
Miss E. Cushing,	Miss Ella L. Whitmore,	John W. Prentice,
Miss Mary R. Bugbee,	Miss Anna Bryant,	John Hayes,
Miss Celeste A. Reed,	Miss Clara B. Millett,	Henry C. Higby,
Miss Jane E. Chapin,	Miss Cary A. Northcutt,	S. S. F. Buckman,
Miss Sophia Chapin,	Miss Kate F. McColgan,	Mrs. S. Jennie Mann,
Miss Marietta E. Hall,	Miss Mattie A. Stegman,	E. A. Davis,
Miss Belle W. Taylor,	Miss Hattie M. Fairchild,	Silas W. Brittan,
Miss Fannie Soulé,	Miss Grace Smith,	Truman P. Ashbrook,
Miss Mary A. Wright,	Miss Hattie J. Estabrook,	James Smith.
Miss Augusta M. Stowe,	Miss L. M. Westbay,	

SECOND GRADE.

Miss Eliza B. Barnes,	Miss Mary E. Pratt,	Miss Annie L. Gray,
Miss Ellen M. White,	Miss Alice Weed,	Mrs. Sarah B. Daniels,
Miss Caroline A. Harper,	Miss Clara A. Mackie,	Lawrence E. Burgstiner,
Miss D. L. Whitehouse,	Miss Mary A. Thomas,	Arthur Boyrie,
Miss Ella K. Lamb,	Miss Esther Solomon,	Mrs. Maria McGilvray,
Miss Pauline Hart,	Miss Annie M. Hayburn,	Absalom T. Jones,
Miss Susie A. Mowry,	Miss Louise Lacey,	John M. Curragh,
Miss Grace Chalmers,	Miss Maggie E. Smith,	William Kermode,
Miss Adella Pepper,	Miss Emma A. Griffith,	B. Rodahan,
Miss Ruth G. Campbell,	Miss Elizabeth White,	Henry W. Fenton.

THIRD GRADE.

Miss Melvina Pelton,	Miss Caroline Pearce,	Mrs. Sophronia Clark,
Miss Mary Corkery,	Miss Mary Walsh,	Miss Mary Bell,
Miss Kate M. Donovan,	Miss Kate Casey,	Miss Maggie H. Watson,
Miss Isabel Gallagher,	Miss Nellie Robinett,	Miss Edwina C. Perkins,
Miss Augusta Reynolds,	Miss Emma E. C. Stincen,	Miss Mary E. Clyman,
Miss Ellen Hodges,	Miss Annie E. Grogan,	Miss C. J. Lawrence,
Miss Ellen R. Dolliver,	Miss Emily U. Lindberg,	Miss Cora Burrage.
Miss Susie McInerney,	Miss Olive G. Parker,	Miss S. E. Huntington,
Miss Fannie B. Canfield,	Mrs. S. J. Rogers,	Miss Alice D'Arcy,
Miss Carrie A. Smith,	Mrs. Mary A. Phelan,	Miss Mary F. Byrnes.
Miss Julia O'Brien,		

STATE EDUCATIONAL DIPLOMAS.

STATE Educational Diplomas have been issued to the following teachers:

Samuel Hason Jackman,	J. P. Royall,	Mrs. M. W. Phelps,
Percival C. Millette,	Mrs. Julia M. Lubeck,	Wallace R. Leadbetter,
Miss Mary J. Morgan,	Mrs. Lizzie G. Deetken,	Henry A. Nelson,
Mrs. M. Deane,	Miss Sarah E. Fox,	Charles S. Smyth,
Mrs. Aurelia Griffith,	Miss Agnes Chalmers,	Miss Carrie P. Field,
Silas S. Harmon,	Miss Emily M. Tibbey,	Alfred Thurber.

A NEW AND IMPORTANT DISCOVERY.—We learn that Rev. J. H. Haven, of the town of Lewiston, claims to have made a new and important discovery, by which he endeavors to prove the teaching of science a fallacy where it is asserted that one pound cannot be made to lift more than one pound in equal space and equal time. It is said that the operation of this machine is apparently simple. It is done by transmitting gravity at every half revolution of the wheel; when ten pounds is descending the ascending ten will only have the resistance of five, and *vice versa*, when the ten pounds has ascended to the top of the wheel, it assumes its natural force of ten pounds, and the ten at the bottom of the wheel reduced to five pounds. If a successful application of the principle can be made, it will work a radical change in the application of power to machinery. It is contended by Mr. Haven that when it is properly attached to machinery the power applied will be increased from one hundred to two hundred per cent., an item of incalculable value to those employing mechanical power. He is now preparing his discovery for a thorough test.—*Lockport (N. Y.) Jour.*

MISCELLANEA.

AMERICAN WORLD-FINDERS.—Up to 1781, when Sir William Herschel discovered the distant Uranus, but six planets were known to constitute our solar system. Since then, through the improvements in the telescope, 107 planets have been discovered, of which, 23 or nearly one-fifth, have been the trophies of the scientific skill of American astronomers. Of these, 17 were discovered by two astronomers since May, 1861—9 by Professor Watson, of the University of Michigan, and 8 by Professor Peters, of Hamilton College, N. Y.

THE PHENOMENA OF THE BRAIN.—One of the most inconceivable things in the nature of the brain is, that, although the organ of sensation, it should itself be insensible. To cut the brain gives no pain, yet in the brain resides the power of feeling pain in any part of the body. If the nerve which leads to it from the injured part be divided, we become instantly unconscious of suffering. It is only by communication with the brain that any kind of sensation is produced; yet the organ is itself insensible. But there is a circumstance more wonderful still. A certain portion of the brain itself may be removed without destroying life. The animal lives and performs all those functions which are necessary to simple vitality, but it has no longer a mind. It cannot think or feel. It requires that the food should be pushed into its stomach; once there, it is digested, and the animal will even thrive and grow fat. We infer, therefore, that a part of the brain is simply intended for the exercise of intellectual faculties, whether of the lower degree, called instinct, or of that exalted kind bestowed on man, called reason.

DEEP sea soundings have demonstrated, it is stated, that the bottom of the sea, at great depths, is covered by a continuous mass, over miles in extent, of what may be considered as one single animal. It is thought to form the lowest stage of animal life on the globe, and is supposed to derive its nourishment directly from the mineral world, as in the case of plants. The new animal has been baptized by the euphonic name of *Bathybius*.

THERE are nineteen book stores in Constantinople. They are mostly kept by Germans and Frenchmen, and do a good business.

THE Board of Overseers of Harvard College have finally confirmed the nomination of Professor Charles G. Elliot to the Presidency, by a vote of sixteen to eight.

A PROFESSORSHIP of American History is to be established at the University of Heidelberg, Germany, and to be offered to a distinguished American scholar.

TO ASCEND a staircase eighteen feet high requires thirty-six times the force that is required to walk eighteen feet on level ground, and would therefore be equal to a level walk of three hundred and twenty-four feet. So then a person shut up in the house, and in need of exercise, can walk his mile by going up these stairs, say sixteen times.

FEW people on this side the water know that Finland has a university superior to most of those in Germany, and far ahead of anything in America. It has five departments, thirty-one professors, a rich library of 200,000 volumes in all languages, &c. Most of us have had an indefinite idea that the Finns were in culture about half brothers of the Laps and Esquimaux.

A CURIOUS physiological experiment has recently been made. A few grains of barley were placed before a hungry pigeon. While pecking at the barley the brain of the pigeon was frozen by means of a spray of ether. The bird, being thus deprived of consciousness, ceased pecking and remained as if dead. The barley was then removed, and, the ether spray having ceased, the brain was allowed to thaw. The bird soon returned to life, and its first act was to renew the pecking for a moment, though no food was before it.

PROF. MARSH, of Yale College, has discovered in the tertiary deposits of Nebraska, the minutest fossil horse yet obtained. It is only two feet high, although full grown. This makes the seventeenth species of fossil horse discovered on this continent.

SPECTACLES.—With most persons there is an epoch in life when the eyes become slightly flattened. It arises, probably, from a diminished activity of the secreting vessels. The consequence is that the globe is not kept quite as completely distended with fluids as in youth and middle age. There is thus an elongated axis of vision. A book is held farther off to be read. Finally, becoming more flattened by the same inactivity within, the difficulty is met by putting on convex glasses. This is the waning vision of age. If, however, when that advancing imperfection is realized, the individual persists in the attempt to keep the book in the old focus of vision, even if he reads under perplexing disadvantages, never relaxing, but perseveringly proceeding just as he did when his eyes were in their meridian perfection, the slack vessels will at last come to his assistance, and the original focal distance will be re-established.

This statement will unquestionably be combatted energetically by those who use glasses. But it will be a waste of forensic powder, because the fact is established beyond cavil. We do not pretend it will be successful in every instance; but generally, if glasses are once resorted to, then the opportunity of doing without them is forever lost.

Very aged men may be noticed reading fine print; and ladies, too, by scores, who resisted glasses at the age of life referred to, who enjoy all the comfort of distinct vision, and they will, until, like the deacon's chaise, every stick in the vehicle falls to pieces at the same time.

Therefore, begin with a firm resolution never to use glasses of any kind for reading or writing. The ancients knew nothing about such contrivances; if they had, there would have been poor eyes in abundance, and oculists to meet the emergency. Cicero never complained of imperfect vision at the age of sixty-three. He even wrote his last letter by torch light, on the eve of being put to death by the waiting soldiers. Humboldt died at ninety-two, having never been embarrassed with those modern contrivances, lunettes. John Quincy Adams, illustrious for scholarship, at a ripe old age saw without them. Indeed, it would be a laborious enterprise to collect a catalogue of names in the chronicle of literary fame, of men and women who were independent of glasses.—*Educational Gazette.*



COMPARATIVE STATISTICS.—The following table shows the per cent. of all the pupils enrolled in the public schools of several of our leading cities, who are enrolled in their respective high schools: Louisville, 1.9; New Haven, 2.1; San Francisco, 2.5; Chicago, 1.5; Detroit, 1.5; Leavenworth, 2.4; St. Louis, 1.8; Providence, 4.9; New Orleans, 2.4; Cincinnati, 1.5; Boston, 3.1. The average cost per pupil, of the entire expenses of the day-schools, computed from the average attendance during the year 1866-'67, was as follows in these cities: Leavenworth, \$50.47; San Francisco, \$50; St. Louis, \$40.39; Baltimore, \$33.38; New York, \$30.82; Louisville, \$30.23; Boston, \$29.75; Chicago, \$29.75; New Orleans, \$26.22; Pittsburgh, \$25.66; Cincinnati, \$23.12; Philadelphia, \$21.52.—*Illinois Teacher.*



TOP AND BOTTOM.—The mischief which arises from an unfortunate use of terms, is forcibly illustrated in the use of these words. Geographies say that "the top of the map is north, and the bottom south." The top of anything is generally considered the highest part. Since a map is a representation of a part of the earth's surface, the child readily infers that the northern part of the country pictured in the map is actually higher than any other part. The strength with which this idea becomes fixed in the pupil's mind will be attested by the experience of every careful teacher of geography. Who of them does not remember the persistence of scholars in saying that the St. Lawrence runs southwest, and the vexatious waste of time they have suffered by the delay in correcting the error? In some cases it is never eradicated. Even the authors of some of our text-books have committed the blunder. It would not be a diffi-

cult thing to find in some of the histories such expressions as "sailing down Lake Champlain," while the direction was south; and one of our standing encyclopædias speaks of the navigator Champlain sailing down the Sorel river while going from Quebec to the same lake. The first thought that comes into the mind of many pupils, while looking on the map, is that the water flows from Lake Ontario to Lake Erie. Most people in our own State speak about going from Chicago *up* to Mackinaw. To correct this error, we would suggest that, if possible, the map be presented to the pupil on a *level surface*, thus avoiding the necessity for the use of the words "top" and "bottom;" and to the book-makers as well as teachers, that, in stead of the usual form, some expression like the following be used: "the part of the map which is farthest from you is north, while the part next to you is south."—*Illinois Teacher*.

IN every 100,000 tons of the water supplied to London, the solid impurity averages from 28 to 42 tons. In Edinburgh it averages from 11 to 14 tons; Bristol, 28 tons; Manchester, 6 tons; Dublin, 6 tons, and Glasgow only 3 tons.

REPORTS OF PUBLIC SCHOOLS.

ROLL OF HONOR.

NORTH SAN JUAN GRAMMAR SCHOOL, *Nevada County*: Roll of Honor of North San Juan Grammar School, for the Term ending June 11th, 1869:

Masters C. Frank McNeill; Willie G. Franchere; Oscar E. Hill, Thomas Evans, Edgar S. McNeill, Willie H. Chapman, Harold E. Spooner, *Eddie C. Helfrich. Misses Lizzie Banks, Emma Angier, Gracie Hesseltine, Ellen Beck, Mary Shepard, Edith White, *May Peck, *Sarah J. Williams. G. W. STODDARD, Teacher.

(*Extras reckoned.)

ALTAMONT SCHOOL DISTRICT, Miss MARY M. HARDY, Teacher: May 29th, 1869. Miss Alice Burrington. Masters George and Allen Burrington, for three months; Master Robert Burns, for two months.

DIAMOND SPRINGS PUBLIC SCHOOL, *El Dorado County*: C. W. CHILDS, Principal. (Term ending May 1st.) John Park, Ada Park, Lizzie Moss, Ellen Burns, William Yeadon, Agnes Bryant, Nellie McFarlan, Glendora Morrell, Florence Adams, Agnes Gilman, Ella Fowler, Warren Fowler, Philip Hickey, Mary Hickey, Rosamond Larkin, Kate Dailey, Sarah Bryan, Lizzie Cedar, Ellen Weissner, Joshua Yeadon, Andrew Ehat, Hattie Huft, Rosa Park, Ozeet Park, Charles Monet, Isaac Stanley, Carrie Ames, Maurice Daily, Henry Armdon,

Alice Hutchinson, Nancy Cook, Olive McFarlan, Ella Constable, George Sackett, Walter Carpenter, Arizona Chapman.

TODD'S VALLEY (*Placer County*) DISTRICT SCHOOL: Mrs. E. H. HUMPHREY, Teacher. (For month ending April 2d, 1869.) Hiram Pond, Eddie Lowell, Malony McClain, Minnie Northwood, Carrie Bayles. (For month ending April 29th): Charles Huse, Hiram Pond, Lottie Pond, Willie Dickirson, Nellie Humphrey, Mary H. Breun, Carrie Bayles, Harry Dodds, Johnny Breun, Edward Matlock, Ida Humphrey, Henry Pond, Emma Huse, Robert Schmidt, Alice Humphrey.

SAN JUAN SCHOOL; *Monterey County*; J. P. C. Allsop, Principal. The following names have been inscribed on the Roll of Honor for the year commencing July 13th, 1868, and ending June 30th, 1869: Lola Bigley, Vincent Ross, Nellie Matthews, Emma Rue, Ella Black, Eddie Whedon, Thomas Mylar, B. F. Ross, Andrew Black, Charles Bigley, E. J. Breen, Julia Black, Nellie Bigley, Olive Abbe, Mary Brummett, Francisco Marmalejo, Mary J. Mylar, Martha Shepherd, Sarah Shepherd, Jos. Cullumber.

DEPARTMENT OF PUBLIC INSTRUCTION.

SALUTATORY.

WITH this number I enter upon my duties as an Editor of the CALIFORNIA TEACHER, having been called thereto by the suffrages of THE STATE EDUCATIONAL SOCIETY, at its last meeting. Profoundly impressed with a sense of the importance and responsibility of the work committed to me, I undertake its performance with diffidence, and yet with the purpose to bring to it all the ability and energy I possess. I am not altogether unfamiliar with the work upon which I thus formally enter, having for the last year been an inmate of the office of the TEACHER, and participated in its editorial labor. This experience has familiarized me somewhat with the routine of editorial work, while it has not lessened my appreciation of its difficulty and delicacy. With no object in view save the promotion of the cause of Popular Education, and with the kindest feelings to my fellow-workers, I solicit their indulgence for imperfections that may be discovered, and ask their co-operation in the endeavor which I shall make, in conjunction with my associates, to make the CALIFORNIA TEACHER the accredited and worthy organ of the Department of Public Instruction. This co-operation may be extended by contributions to its pages and by adding to its circulation. Relying upon this co-operation on the part of teachers and school officers, with a purpose to work hard to deserve it, I subscribe myself their fellow-laborer,

A. L. FITZGERALD.

PAYSON, DUNTON & SCRIBNER'S COPY BOOKS.—This excellent system of penmanship has just been adopted by the State Board of Education. Its merits are so genuine that *sixty-two* cities, with an aggregate population of 2,400,000, use it exclusively. The TABLETS, CARDS, and clear directions accompanying, make the teaching of it easy for teacher and learner.

OFFICIAL JOURNEYINGS.

SOLANO COUNTY.

THE Solano County Teachers' Institute was held at Vallejo during the last week in May. I was present during the last two days of the session. The notable features of this Institute were these: A judicious and varied programme of exercises, strictly followed; spirited debates; practical illustrative teaching exercises; a delightful excursion to Mare Island, by the members of the Institute; and several good evening addresses. (No allusion in this remark to the effort of the State Superintendent.) The effect of this meeting of the teachers of Solano must prove beneficial to the cause of education in that rich and flourishing county. Superintendent Symonton loves his work, and knows how to do it.

NAPA COUNTY.

The recent Institute for Napa county was held in Napa City, beginning on the 15th of June. The session was a very pleasant one. Superintendent Gillespie was, as usual, serene and sensible. The teachers, in their discussions of the various topics before them, exhibited unusual earnestness of spirit, and a lofty conception of the dignity and importance of their calling. The debate on "Corporal Punishment" was the best presentation of that subject to which it has ever been my pleasure to listen. The question of the location of the State Normal School at Napa was broached, and elicited a lively interest among the leading citizens of the place. San José and Oakland have a formidable rival in Napa.

SONOMA COUNTY.

I reached Santa Rosa just as the Institute adjourned. "Nobody to blame." From Superintendent Ames, I learned that the attendance of teachers was very full, the exercises interesting and profitable, and the Institute a success. The retiring Superintendent received a well-deserved *caning* from the members of the Institute. The State Superintendent addressed an improvised audience in the court house, and at the conclusion of his remarks, was followed by impromptu addresses by Superintendent Ames, and other citizens of Santa Rosa, in support of a movement for the establishment of a school of high grade in that beautiful and pleasant town.

STATE BOARD OF EDUCATION.

THE State Board of Education met at the office of the Superintendent of Public Instruction, July 6th. Present: Governor Haight, State Superintendent Fitzgerald, Superintendents Trafton, Denman, Braly and Cottle, and Messrs. Swezey, Sibley and Lucky.

A motion to authorize the use of Clark's Intermediate Geography in the public schools, was, after discussion, lost.

Payson, Dunton and Scribner's System of Penmanship was adopted for use in the public schools. Payson, Dunton and Scribner's Tablets were also adopted.

Burgess' "National System of Drawing" was adopted.

A proposition was received from the house of A. S. Barnes & Co., with reference to the introduction of Monteith's Geographies into the public schools, and, after discussion, its consideration was postponed until the next regular meeting of the Board.

A request from the Santa Clara Board of Education, for permission to use Dalton's Physiology in the Grammar School of that city, was denied.

STATE LIFE DIPLOMAS.

STATE Life Diplomas were issued to the following teachers, May 21st, 1869:

75. E. M. Preston,	78. Isaac Upham,	81. E. Rousseau,
76. Eugene T. Thurston,	79. E. J. Schellhaus,	82. Melville Cottle,
77. John C. Gray,	80. W. A. Sanders,	83. Miss F. E. Bennett.

INSTITUTE VISITING.—I was present at the late session of the Placer County Teachers' Institute, and intended giving an abstract of the proceedings, which were interesting, profitable, and pleasant, but all the space in the last TEACHER was otherwise filled; and now it is rather late to bring up the subject. One point, however, I desire to mention, viz: THAT GOOD-RICH REPORT. The critic for the last day was Mr. A. H. Goodrich. He reported the usual mistakes resulting from carelessness, embarrassment, &c., &c., in the usual manner. He then commenced complimenting Miss C—, Miss T—, Miss D— and others, who he said had made no mistakes, or used anidiomatical language during the session of the Institute. Criticism, not compliments being his duty, a point of order was about to be raised, when it occurred to all, almost simultaneously, *that those members had said nothing during the entire session!*

DEP. SUPT.

BACK NUMBERS.—I have a number of copies of the CALIFORNIA TEACHER, dating as far back as the first volume. If any of the teachers of this State need odd numbers to complete files, I shall take pleasure in mailing them to any address, free of charge.

BERNHARD MARKS.

OUR BOOK TABLE.

THE [MALAY ARCHIPELAGO: The Land of the Orang-Utan, and the Bird of Paradise. A Narrative of Travel, with Studies of Man and Nature. By ALFRED RUSSELL WALLACE, Author of "Travels on the Amazon and Rio Negro," "Palm Trees of the Amazon," etc. New York: Harper & Brothers. 1869.

The author spent eight years on the various islands of the Malay Archipelago, collecting specimens of Natural History. This book is the result—an entertaining narrative of travel and incident, interspersed with varied and curious facts and information in many branches of science; as, Entomology, Ornithology, Zoology, Physical Geography, Ethnology, Geology, &c., &c. The facts of science are so skillfully woven into the narrative that one is surprised to find, on laying down the work, that his stock of scientific knowledge has been much increased, while he has had all the pleasure of a charming story. 638 pages, 8vo., with 27 wood cut illustrations and two maps. For sale by A. Roman & Co., San Francisco.

BIOGRAPHICAL SKETCHES. By HARRIET MARTINEAU. New York: Leypoldt & Holt. 1869.

Forty-six characters are sketched—thus classified: Literary, fourteen; Scientific, two; Professional, ten; Social, four; Politicians, eleven; and Royal, five. Each character is drawn with such a comprehension of the particular type of mind and its achievements, and presented with such sharpness of outline, that the impression left on the reader's mind is—almost—that he has just ended an interview with Lord Brougham, Lady Byron, or whoever may be the subject of the sketch. Miss Martineau goes over the broad field from Literary to Royal, and is equally and wonderfully clear and accurate in each. To read and to have read such a book is a satisfaction. A. Roman & Co., San Francisco.

MANUAL OF PHYSICAL AND VOCAL TRAINING, for the use of schools and for private instruction. By LEWIS B. MONROE, Superintendent of Physical and Vocal Culture in the public schools of Boston, Mass. Illustrated by HAMMETT & BILLINGS. Philadelphia: Cowperthwait & Co. 1869.

The necessity, methods and results of Physical and Vocal Training are briefly and clearly set forth in this little volume. The author's practical experience in teaching the art, taught him that details are impracticable in a book. A judicious skeleton or outline of the method is therefore given, which the skillful teacher will find helpful in presenting his subject, and to fasten it in the mind and habits of his pupils.

A NEW PRIMARY GEOGRAPHY, Illustrated by numerous Maps and Engravings. By D. M. WARREN. Philadelphia: Cowperthwait & Co. 1869.

THE COMMON SCHOOL GEOGRAPHY: An Elementary Treatise on Mathematical, Physical, and Political Geography. By D. M. WARREN, author of a Treatise on Physical Geography, &c., &c. Philadelphia: Cowperthwait & Co. 1869.

AN ELEMENTARY TREATISE ON PHYSICAL GEOGRAPHY, to which is added a brief description of the Physical Phenomena of the United States. By D. M. WARREN. Philadelphia: Cowperthwait & Co. 1869.

WARREN'S series of geographies have been so long and so favorably known, that to speak of their general merits would be superfluous. The present edition has been carefully revised by A. Von Steinwehr. The original plan and division of the work remain the same; the matter being corrected as demanded by advancements in science, and the changes which the earth is constantly

undergoing. Dove's theory of winds and wind-zones is adopted instead of Maury's.

A PRACTICAL GRAMMAR of the English Language, for the use of schools of every grade. By THOS. W. HARVEY, A. M. Cincinnati: Wilson, Hinkle & Co.

Noticed in THE TEACHER some months ago.

IMPROVED MODERN POCKET DICTIONARY OF THE FRENCH AND ENGLISH LANGUAGES, for the every day purposes of travelers and students. By FERDINAND E. A. GASC. Philadelphia: J. B. Lippincott & Co. 1869.

A pocket French-English and English-French dictionary—an acquaintance with which will make the traveler regard it as a *vade mecum*. A few simple and very direct explanatory remarks and rules given in the beginning, put the plan of the work before the student, who can thus rapidly acquire the contents. The book contains some five thousand words, senses, phrases and idioms not found in other dictionaries, even the largest, as well as the correction of hundreds of vulgar errors which occur in other works of the kind. A. Roman & Co., San Francisco.

THE PRINCIPLES OF PSYCHOLOGY. Part I. The Data of Psychology. By HERBERT SPENCER. New York: D. Appleton & Co. 1869.

This is one of the remarkable books of the century. The present volume treats of the DATA OF PSYCHOLOGY—has one hundred and forty-two pages, 8vo., and is divided into seven chapters. The first five are devoted to formulating nervous phenomena in terms of MATTER and MOTION. Then come subjective observations and analysis. The seventh chapter treats of *The Scope of Psychology*. Here is clearly marked the distinctions between Psychology and the sciences on which it rests. The internal relation of a physiological proposition and the external relation of a psychological proposition are discussed in relation to each other; the connection not of the phenomena merely; but the "*connection between the two connections.*" Next are mapped out the divisions into which Psychology proper falls: the discussion of which is left to a future volume, or volumes. It is the work of a master mind; it is difficult to estimate its bearing, and it will be interesting to watch its influence in future upon metaphysical thought. A. Roman & Co.

THE MANUAL. A Practical Guide to the Sunday-school work. By EDWARD EGGLESTON, Editor of the "National Sunday-school Teacher." Chicago: Adams, Blackmer and Lyon, 155 Randolph street. 1869.

A gem! No Sabbath-School superintendent or teacher should be without it. So small—one hundred and eight pages, 18mo—and yet so full and satisfactory.

ANDERSON'S HISTORIES.

We have received from the publishers, Messrs. Clark and Maynard, New York, Anderson's series of Histories, consisting of AN INTRODUCTORY SCHOOL HISTORY of the United States, A GRAMMAR SCHOOL HISTORY of the United States, A PICTORIAL SCHOOL HISTORY of the United States, and A MANUAL OF GENERAL HISTORY. In scope and design these form a very good outline of history for school purposes. An exact estimate of them as *history* and as *school books*, is not easily made. There are excellencies and there are defects—both, perhaps, have been exaggerated. A summary would be something near

this: Merits—Keeping well in view and rendering available to the subject, “the two eyes of history”—GEOGRAPHY and CHRONOLOGY; the teachable manner in which the matter is arranged; the special questions at the bottom of the pages; the topical questions at the ends of chapters; and general clearness of statement. Demerits—Want of a firm grasp of the subject and the philosophy of history; not discriminating events as important and unimportant in cause and effect, mingling those that determine the “destinies of nations and men” with those merely brilliant or marvelous; and occasional inaccuracies in the statements made. Their merits seem to be as school books; their blemishes, as histories.

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MY TEN-ROOD FARM; or How I became a Florist. By MRS. MARIA GILMAN. Loring, publisher. Boston.

A racy recital of the events of twelve months on a farm, during which a widowed woman begins business as a Florist. Though knowing nothing of the vocation, she learns the trade, supports her family, and receives an income of *two thousand dollars a year!* Shows the way to others. Price, 50 cents. A. Roman & Co.

TOWNE'S MATHEMATICAL SERIES, consists of PRIMARY ARITHMETIC, INTERMEDIATE ARITHMETIC, ARITHMETIC, and ALGEBRA.

The author has left the beaten track in many places—we think, to advantage. We commend the books to those interested, not having space for elaborate notice of merits. The position that DECIMAL FRACTIONS occupy as *the offspring of decimal notation, and not of vulgar fractions*, is natural and philosophic—a merit. There are others. John P. Morton & Co., Louisville, Ky., are the publishers.

MARSH'S MANUAL OF REFORMED PHONETIC SHORT-HAND; being a complete Guide to the best System of Phonography and Verbatim Reporting. By ANDREW J. MARSH, Official Reporter for the Courts. San Francisco: H. H. Bancroft & Co. 1868.

A handsome, convenient and complete little book for acquiring one of the most useful of arts.

MANUAL LATIN GRAMMÁR. Prepared by WILLIAM F. ALLEN, A. M., Professor of Ancient Languages and History, in the University of Wisconsin; and JOSEPH H. ALLEN, Cambridge, (Mass.) Boston: Published by Edwin Ginn, Woolworth, Ainsworth & Co. 1869.

Brevity in a text-book is desirable. The student should not have matters placed before him daily which he is told it is not necessary to learn. It takes away that *peculiar* satisfaction resulting from making “a clean sweep as you go.” When one is told that, in one hundred and thirty-six pages, enough Latin Grammar may be found to prepare a student for the Freshman Class, he very naturally feels some surprise, if his preparatory days have been employed on Andrews', Stoddard's, Bullion's, or any one of the larger works. However, this is a good grammar. It is not a book for an inferior teacher—success with it, would be the highest success. Some desirable changes in the

nomenclature might have been advantageously and appropriately introduced with the clearing away of so much rubbish. The grammar and the "Latin Lessons" are good—advances in the right direction. Who will push the subject to its legitimate results?

ANCIENT HISTORY, Illustrated by Colored Maps and a Chronological Chart, for the use of families and schools. By C. A. Bloss; revised and improved by JOHN J. ANDERSON, A. M., author of a series of School Histories of the United States. New York: Clark & Maynard, publishers, 5 Broadway street. 1869.

We like this book. The plan is unique. The world's history is divided into "Millenniums," or periods of one thousand years each. The four "Universal Monarchies" are passed in review—we have the "Head of Gold," "The Arms of Silver," &c. The mind grasps the subject clearly; and the memory holds it tenaciously. Throughout references are made to passages of the Bible, in which allusions to the events narrated may be found.

GREENE'S GRAMMARS.

We receive copies of these works (previously noticed,) from Messrs. Cowperthwait & Co., Philadelphia.

RAY'S SERIES OF MATHEMATICS. From Wilson, Hinkle & Co., Cincinnati.

The public are too well acquainted with these books to render comment or criticism necessary. The revised edition is beautiful in typography and binding; and has some improvements and additions in regard to the matter. The following constitute the course: RAY'S PRIMARY, RAY'S INTELLECTUAL, RAY'S PRACTICAL, and the HIGHER ARITHMETIC; NEW ELEMENTARY ALGEBRA, HIGHER ALGEBRA, and GEOMETRY AND TRIGONOMETRY (one volume)—all good.

MORAL SCIENCE. A Compendium of Ethics. By ALEXANDER BAIN, M. A., author of "Mental Science: a Compendium of Psychology;" "The Senses and the Intellect;" "The Emotions and the Will;" "A Manual of Rhetoric;" Professor of Logic in the University of Aberdeen, &c., &c., &c. New York: D. Appleton & Co. 1869.

One of the best books on MORAL SCIENCE of the century. There is learning, ability, philosophy and piety throughout. 'Tis a book to be studied, and will well repay the labor. A. Roman & Co.

A PRACTICAL BUSINESS ARITHMETIC, for Common Schools and Academies, including a great variety of Promiscuous Examples. By WHITMAN PEEK, A. M., author of the Promiscuous Exercises in Andrew's Latin Lessons. New York: J. W. Schermerhorn & Co. 1869.

This is nearly like the other Arithmetics of the country, but has the merit of *many promiscuous examples*. It is arranged with the object of preparing boys for business.

THE RECENT PROGRESS OF SCIENCE, with an Examination of the Asserted Identity of the Mental Powers with Physical Forces; an Address delivered before the American Association for the Advancement of Science, at the Annual Meeting held at Chicago, August, 1868. By FREDERICK A. P. BARNARD, S. T. D., LL.D., Principal of Columbia College, New York City, President of the Association in 1866. New York: D. Appleton & Co. 1869.

This address gives a review of the general progress of science during the year. The arguments against the identity of "Mental Powers" and "Physical Forces" in the "doctrine of conservation of forces," are ingenious and able. From the author's stand-point they are conclusive. Price, 50 cents. A. Roman & Co.

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- Natural History*—Tenney's.

SENIOR CLASS—*Second Session.*

Botany—Gray's.

Physical Geography—Warren's, with Guyot's Wall Maps.

Normal Training—Russell's.

Geometry—Davies' Legendre—five books.

English Literature—Shaw's.

Book-Keeping—Payson & Dunton's Double Entry.

General Exercises—Same as in Junior Year.

REGULATIONS OF THE STATE NORMAL SCHOOL.

Adopted by the Board of Normal School Trustees, March 28, 1868.

1. All pupils, on entering the School, are to sign the following declaration of intention:

‘ We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State.’

Male candidates for admission must be at least eighteen years of age; and female applicants at least fifteen years of age; and all must possess a good degree of physical health and vigor.

2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

GENERAL INFORMATION.

The time for completing the Normal School course is two years, each divided into two terms of five months.

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Applicants will please read attentively the ‘Regulations’ as given above, particularly the Fourth and Fifth.

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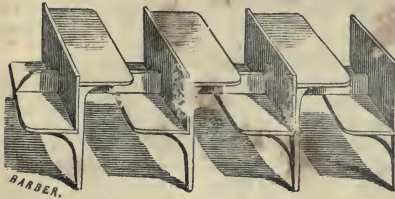
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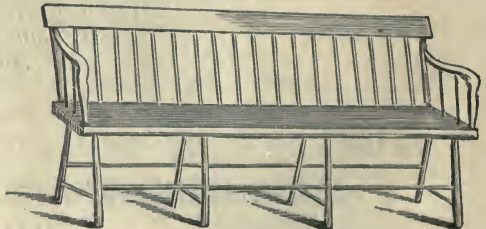
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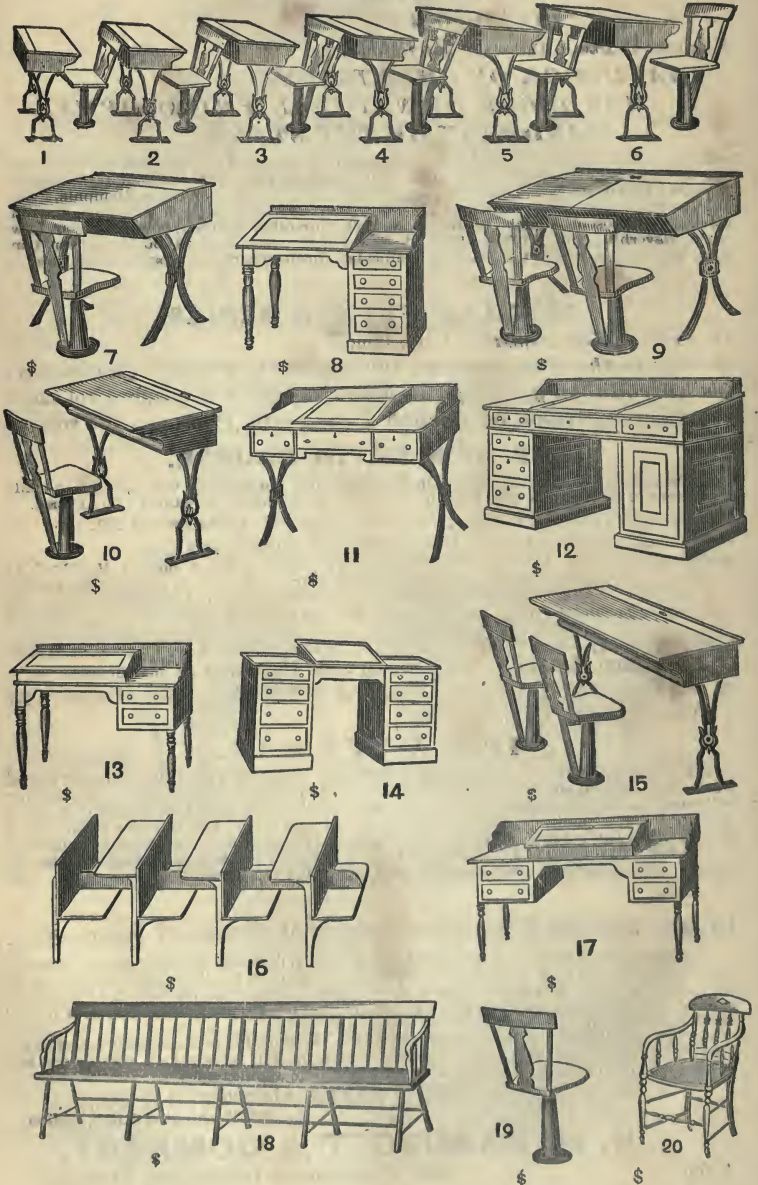
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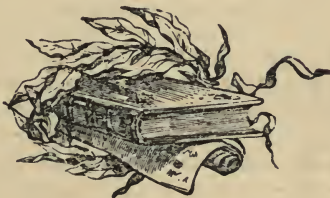
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matics are women, proving that when thoroughly trained, woman's natural and peculiar aptitude to jump at conclusions, makes it peculiarly fitting and proper that she should study it fully. To this, add her proverbial patience in teaching details, and we have abundant reasons why it should pre-eminently be a part of her education. As to the practical use of it in after life, it will probably have as good an influence as any study. No good reason, then, can be given, why the girl of this practical, matter-of-fact nation, should not be trained in the same habits of buisness, carefulness and thought, as the boy. No matter what sphere she may fill, she will be the better for it. Household duties will be more practical, or, if forced to support herself, her planning and efforts will be more systematic and successful. Every dress that she cuts, every shirt she makes, and every boot she stitches, will be the better for it. And when a man utters the sentiment that the girls in our public schools should be taught only elocution, music, drawing and fine manners for the parlor, he shows only his own selfishness and ignorance. If the truth were known fully, the great lack of understanding in this branch, comes wholly from the faulty method of teaching it. Too many teachers consider the work done well if they go to the board, give a hasty, reasonless explanation, leaving the class to flounder through it as best they may. Perhaps five per cent. of the class may catch it. If the ninety-five per cent. should ask for a renewed explanation, they are impetuously told to copy it from their companions. Discouraged, perhaps a little lazy, they make no special effort, and the teacher enjoys an off-hand tirade against the incapability of girls to understand Arithmetic.

Another great evil is to give pupils examples to work out at home. Very few do them. They get their parents or friends to work them, and are credited for perfect work, but at the day of trial they fail. Arithmetic should be taught and drilled in the school-room entirely under the eye of the teacher, that every child may be known to do the work himself or herself, under the influence of a healthy competition and interest.

We read in the Bible, if we may be bold enough to have any regard for that Blessed Book, that in the glorious Hereafter, no distinction will be made in regard to sex. That the soul that is best fitted to do so, will honor its Creator most. Hence the writer of this can find no where in nature, humanity or philosophy, an adequate reason why the boys and girls of *this existence* may not be equally educated in those things that will ennoble and strengthen them. Viewed from the standpoint of mere animality, it is perhaps false reasoning. To please a sensual age, the less independence and high moral culture girls have, the better; but when regarded in the light of personal account, ability and self-respect, girls should be trained to do their own thinking and planning, as well as boys. And those studies that will broaden and deepen their minds, should be carefully taught

them, not as an accomplishment, but as a duty. Society is suffering enough to-day from the inefficiency of women, and many homes are wretched because of the utter lack of ingenuity and skill of management, arising from the false and nonsensical notion that girls must be trained only in those things that will make them "parlor shows." L. T. F.

EDUCATED LABOR.

BY JOHN S. HART, LL.D.

SOME curious and instructive facts were collected a few years since by the late Horace Mann, in regard to the efficiency of operatives in factories—a class of men who would seem to require as little general intelligence as any kind of laborers. It was found that, as a general rule, those operatives who could sign their names to their weekly receipts for money were able to do one third more work, and to do it better, than those who made their mark. Nor is this at all to be wondered at. There is no kind of work, done by the aid of human muscle, that is purely mechanical. Mind is partner in all that the body does. Mind directs and controls muscle, and even in emergency gives it additional energy and power. No matter how simple the process in which an operative may be engaged, some cultivation of his mental powers is needed. Without it he misdirects his own movements, and mistakes continually the orders of his superintending workman. A boy who has been to a good common school, and has had his mental activities quickened, and whose mind has been stimulated and roused by worthy motives, not only will be more industrious for it when he becomes a man, but his industry will be more effective. He will accomplish more, even as a day laborer, than the mere ignorant boor. When we come to any kind of skilled labor, the difference between the educated and the ignorant is still more apparent. An intelligent mechanic is worth twice as much as one ignorant and stupid.

A fact on this point came under our own personal observation. A gentleman of our acquaintance had frequent need of the aid of a carpenter. The work to be done was not regular carpentry, but various odd jobs, alterations, and adaptations to suit special wants, and no little time nor materials were wasted in the perpetual misconceptions and mistakes of the successive workmen employed. At length a workman was sent, who was a German from the kingdom of Prussia. After listening attentively to the orders given, and doing what he could to understand what his employer wanted, Michael would whip out his pencil, and in two or three minutes, with a few rapid lines, would present so clear a sketch of the article that any one could recognize it at a

glance. It could be seen at once, also, whether the intention of his employer had been rightly conceived, and whether it was practicable. The consequence was, that so long as Michael was employed, there was no more waste of materials and time, to say nothing of the vexation of continual failures. Michael was not really more skilled as a carpenter than many others who had preceded him; but his knowledge of drawing, gained in a common school in his native country, made his services worth from fifty cents to a dollar a day more than those of any other workman in the shop, and he actually received three dollars a day when others in the same shop were receiving only two dollars and a quarter. He was always in demand, always received extra wages, and his work even at that rate was considered cheap.

What was true of Michael in carpentry, would be true of any other department of mechanical industry. In cabinet making, in shoe making, in tailoring, in masonry, in upholstery, in the various contrivances of tin and sheet iron with which our houses are made comfortable, in gas fitting and plumbing, in the thousand and one necessities of the farm, the garden, and the kitchen, a workman who is ready and expert with his pencil, who has learned to put his own ideas, or those of another, rapidly on paper, is worth fifty per cent. more than his fellows who have not this skill.

A man is educated when all his capacities, bodily and mental, are developed, and a community is educated when all its members are. Now, if we could imagine two communities of exactly equal numbers, and in physical circumstances exactly equal as to climate, soil, access to markets, and so forth; and if one of these communities should tax itself to the extent of even one fourth of its income in promoting education, while the other spent not a dollar in this way, there can be little doubt as to which community would make the most rapid advance in wealth and in every other desirable social good.

Our argument is, that an educated population is capable of producing greater material results than a population uneducated can produce. Our second argument is, that the general diffusion of intelligence in a community tends to quicken invention and leads to the discovery of those scientific principles and of those ingenious labor-saving machines by which the productive power of the community is so greatly multiplied. The cotton gin, the steam engine, the sewing machine, and the reaping machine would never have been invented in a nation of boors. It is not asserted that every boy who goes to school will become an inventor. But it is as certain as the laws of matter and mind can make it, that inventions abound in a nation in proportion to its progress in science and the general spread of intelligence among the masses. Multiply common schools and you multiply inventions. How much these latter increase man's

producing power, and so add to the aggregate of human wealth, it is needless to say. The invention of Watt alone has quadrupled the productive power of the whole human race. The aggregate steam power of one single country, Great Britain, equals the muscular capacity for labor of four hundred millions of men—more than twice the number of adult males capable of labor on our planet. Its aggregate power throughout the earth is equal to the male capacity for manual work of four or five worlds like ours. The commerce, the navigation, the maritime warfare, the agriculture, the mechanic arts of the human race have been revolutionized by this single invention, not yet a century old.

The application of scientific truths to the common industries of life is becoming every day more and more a necessity. The village carpenter, no less than the builder of the Niagara Suspension Bridge, makes hourly reference to scientific laws. The carpenter who misapplies his formulæ for the strength of materials, builds a house which falls down. The properties of the various mechanical powers are involved in every machine. Every machine, indeed, it has been well said, is a solidified mechanical theorem. The surveyor, in determining the limits of one's farm; the architect, in planning a house; the builder, in planning his estimates, and the several master workmen who do the carpentry, masonry, and finishing, are all dependent upon geometric truths. Bleaching, dyeing, calico-printing, gas-making, soap-making, sugar-refining, the reduction of metals from their ores, with innumerable other productive industries, are dependent upon chemistry. Agriculture, the basis of all other arts, is in the same condition. Chemical knowledge, indeed, is doing for the productive powers of the soil what the application of steam has done for the increase of mechanical power. The farmer who wishes to double his crops, finds the means of doing so, not in multiplying his acres, but in applying a knowledge of the laws of chemistry to the cultivation of the soil already possessed. Even physiology is adding to the wealth of the farming interest. The truth that the production of animal heat implies waste of substance, and that therefore preventing the loss of heat prevents the need of extra food—which is a purely theoretical conclusion—now guides the fattening of cattle. By keeping cattle warm, fodder is saved. Experiments of physiologists have proved, that not only change of diet is beneficial, but that digestion is facilitated by a mixture of ingredients in each meal. Both these truths are now influencing cattle-feeding. In the keen race of competition, the farmer who has a competent knowledge of the laws of animal and vegetable physiology and of agricultural chemistry, will surely distance the one who gropes along by guess and by tradition. A general diffusion of scientific knowledge saves the community from innumerable wasteful and foolish mistakes. In England, not

many years ago, the partners in a large mining company were ruined from not knowing that a certain fossil belonged to the old red sandstone, below which coal is never found. In another enterprise £20,000 was lost in the prosecution of a scheme for collecting the alcohol that distils from bread in baking, all of which might have been saved, had the parties known that less than one hundredth part by weight of the flour is changed in fermentation.

But it is not necessary to multiply illustrations. Suffice it to say, in conclusion, we hold it to be a most manifest truth, that the general education of a community increases largely its material wealth, both by the direct effect which knowledge has upon individuals in making them individually more productive, and by the increased control which the diffusion of knowledge gives to mankind over the powers of nature. A nation or state is wisely economical which spends largely and even lavishly upon popular education.

PRESIDENT WHITE ON AGRICULTURAL EDUCATION.

WE give below some extracts from the interesting address of President A. D. White, of Cornell University, delivered before the New York State Agricultural Society, at its annual meeting, last winter :

Seeing and Observing.—Those who see are millions; those who observe are but scores.

Every addition to this corps of observers is an addition to the wealth and force of the country.

Now nothing is more certain than that these powers of observation can be cultivated in men who have them partially, and arouse in men who have them not at all.

Interest a young farmer in natural and physical science—especially as applied to things which bear on his tastes or aims or general pursuits, and you have given to his powers of observation a stimulus—educate him to a moderate degree, and you give him method—educate him thoroughly, and you give him power.

Trained Observation.—It is wonderful to note how the powers of observation may be trained. At the Rothamstead laboratory, Dr. Gilbert pointed out to me peasant boys with bundles of grasses before them. They were great bundles representing the results on different plots enriched in different ways. These boys, with a quickness almost preternatural, sorted out all the different species, placing each by itself, that the definite result of each mode of treatment on the growth of each kind of grass might be accurately known. Merely to see once this exhibition,—this thoroughness of observation by the master, this guidance of observation by the scholar—was in itself a lesson never to be forgotten.

Progressive Invention.—Great as are the results of American ingenuity and skill, I believe they would be at once doubled and quadrupled by a proper system of advanced instruction bearing upon agriculture and the mechanic arts. Who can estimate the value, in money, to this nation, of the mower and reaper, the telegraph, the sewing machine, the steam engine? But there are, doubtless, other inventions in the ages ahead of us as good as these. Doubtless, if we go on as we have been going on, we shall stumble on one after another of them during the coming centuries. But, with institutions of practical learning such as we ought to have, such as France, and England, and Germany, already have, I believe that these inventions would come rapidly. Place such an institution as the French Conservatory of Arts and Trade in the midst of this intensely ingenious and practical people, and it must give an immense stimulus and a noble direction to all this ingenuity and activity.

True Schools for Primary Education.—The true schools for the primary, usual instruction in the mechanic arts, and for learning any special trade, are the workshops of the country. They are the most accessible—the most simple. Does a young man really wish to learn to handle saw, or chisel, or plane? these are the practical schools, these the practical teachers. They are all about him—just where they are wanted—in every city, in every hamlet. For that primary work—the learning the usual uses of the usual tools—no other schools can compare with them. Multiply your present endowments by thousands, and you cannot supersede the work of these primary industrial schools almost within a stone's throw of the hearth of every man. If you attempt to do it, you will fritter away your educational resources, and add, probably, one poor workshop to the millions of good ones.

Primary Agricultural Education.—For instruction in the simple fundamental processes of farming, the schools are the farms. They are spread all over our country. They are ready to receive all young men who seriously wish primary training in agriculture. Even though the farm be poor—even though the processes be rude—that is the necessary preliminary school. It is accessible; it enables the young man to pay his way; it enables him to get time, if he be thoroughly in earnest, to profit by the common school, the book and the newspaper. Rudimentary instruction as to implements and processes, can be got nowhere else so well. None other can supply the demand.

Multiply your endowments for agricultural education by millions, and you cannot meet this demand. You cannot supersede these myriad farm schools in every valley and on every hillside. Attempt to do it, and you fritter away your endowment, and simply add one poor farm to the myriads of good ones.

What Agricultural Colleges should do.—They should take young men where the farm, the workshop, the common school leaves

them—young men who have already received a good sound knowledge and experience in the simple, usual processes of agriculture, and on that they should build, making them master farmers; thoroughly based on those sciences bearing on agriculture, thoroughly trained in the arts bearing on agriculture; trained by studies of nature to use their powers of observation; trained by the studies of science to use their powers of practical reason; trained both by study of sciences and arts to bring these powers of observation and reasoning to bear on important practical questions. Having learned much of the processes in farm work, they should be made to investigate new processes to find the facts or fallacies in them. They should be made to study not merely the plough and ploughing, as they could study it without stirring from their fathers' farms, but the very best theory and practice of ploughs and ploughing, of enrichment of soils, of drainage of lands, of rotation of crops, of construction of buildings, of breeding of animals, and the like.

THE BOTTOM OF THE OCEAN.

IN 1853, Lieutenant Brooke obtained mud from the bottom of the North Atlantic, between Newfoundland and the Azores, at a depth of more than ten thousand feet, or two miles, by the help of his sounding apparatus. The specimens were sent for examination to Ehrenberg, of Berlin, and to Bailey, of West Point, and those able microscopists found that this deep-sea mud was entirely composed of the skeletons of living organisms, the greater proportions of those being just like the *Globigerinæ*, already known to occur in the chalk.

Thus far the work had been carried on simply in the interest of science, but Lieutenant Brooke's method of sounding acquired a high commercial value when the enterprise of laying down the telegraphic cable between Great Britain and the United States was undertaken; for it became a matter of great importance to know not only the depth of the sea over the whole line along which the cable was to be laid, but the exact nature of the bottom, so as to guard against chances of cutting or fraying the strands of that costly rope. The Admiralty consequently ordered Captain Dayman, an old friend and shipmate of mine, to ascertain the depth of the whole line of the cable, and to bring back specimens of the bottom. In former days such a command as this might have sounded very much like one of the impossible things which the young prince in the fairy tales is ordered to do before he can obtain the hand of the princess. However, in the months of June and July, 1867, my friend performed the task assigned for him with great precision, without, so far as I know, having met with any reward of that kind. The specimens of Atlantic mud which he secured were sent to me to be examined and reported on.

The result of these operations is that we know the contour and nature of the surface-soil covered by the North Atlantic for a distance of seventeen hundred miles from east to west, as well as we know any part of the dry land.

It is a prodigious plain—one of the widest even plains in the world. If the sea were drained off, you might drive a wagon all the way from Valentia, on the west coast of Ireland, to Trinity Bay, in Newfoundland. And, except upon one sharp incline, about two hundred miles from Valentia, I am not quite sure that it would be even necessary to put the skid on, so gentle are the ascents and descents on that long route. From Valentia the road would be down hill for about three hundred miles to the point at which the bottom is now covered with seventeen hundred fathoms of the sea-water. Then would come the central plain, more than one thousand miles wide, the inequalities of the surface of which would be hardly perceptible, though the depth of the water upon it varies from ten thousand to fifteen thousand feet; and there are places in which Mount Blanc might be sunk without showing its peak above water. Beyond this, the ascent on the American side commences, and gradually leads for about three hundred miles to the Newfoundland shore.

Almost the whole bottom of this central plain (which extends for many hundred miles in a north and south direction) is covered by a fine mud, which, when brought to the surface, dries into a grayish white friable substance. You can write with this on a blackboard, if you are so inclined; and to the eye it is quite like very soft grayish chalk. Examined chemically, it proved to be composed almost wholly of carbonate of lime; and if you make a section of it in the same way as that of a piece of chalk was made, and view it with a microscope, it presents innumerable *Globigerinæ* imbedded in the granular matrix. Thus the deep-sea mud is substantially chalk.—*Prof. Huxley.*

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RANGE OF THE HUMAN EYE.—The range of the human eye may be judged of from a consideration which gives us at the same time a good idea of the scope of the animal structure. Supposing that an individual of every known species were to take its stand between the two species that were respectively the next larger and the next smaller than itself, the smallest known animal being at one extremity of the line, and the largest standing at the other; and then supposing we were to ask what creature occupied the middle place, having as many degrees of size below it as above, and as many above it as below, that place would be found to be occupied by the common house-fly. What a stupendous optical instrument must that be which, assisted with a few brass tubes and some disks of glass, shall discern a creature as much smaller than a fly, as a fly is smaller than an elephant! *Little Things of Nature.*

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THE Indian Government has made a grant of £1,200 per annum, for five years, to the cities of Calcutta, Bombay, and Madras, toward the experiment of female normal schools. A subscription in England will supplement this grant.

OBJECT LESSONS FOR SMALL CHILDREN.

LEATHER.

WHAT is this? Leather.

And what is leather? The skins of animals.

Can you name any animal from whose skin leather is made? The cow, horse, calf.

Yes, and it is sometimes made from the skins of sheep, goats, seals, and even whales.

This piece of leather doesn't look much like a calf's skin, does it? No.

Why not? It hasn't any hair on it.

No, the hair has been scraped off, and the skin has been cleaned and smoothed.

Look at this, and tell me something about it. It is opaque. How do you know that it is opaque? We cannot see through it.

What color is it? Black. Yes, *this* side is black, but let us see if the other is. No, that side is—what? Brown.

What side of the leather do you call that which is black? The upper side.

And what the brown? The under side.

Is all leather this color? No; here is some quite different.

Take this piece in your hand, and tell me what you can do with it. We can bend it.

Well, what will you say about it? It is flexible.

Can you tear it? No.

Why not? Because it is tough.

Is it heavy? No, it is light.

Has it a smell? Yes.

What shall we call it, then? *Odorous* is the word.

What is leather used for? Boots, shoes, slippers, belts, whips, harness, saddles, straps, reins, fire-caps.

Yes, and for a great many other things. What are trunks and valises covered with? Leather.

Did you ever see any one with a leather apron on? Yes; shoemakers wear them at their work.

Why is leather suitable for boots and shoes? Because it is strong.

Well, why don't we use iron—that is strong? It is too heavy.

Well, why don't we use wood—that is not very heavy? It would hurt the feet, because it does not bend.

Can you go out in the rain with leather boots on, and not get your feet wet? Yes.

Why? Because leather is water-proof.

Now repeat in concert the qualities and uses of leather, as they are written upon the board.

Qualities—Opaque, Tough, Flexible, Strong, Odorous, Light, Water-proof, Black on upper side, Brown on lower side, sometimes entirely brown.

Uses—For Boots, Shoes, Slippers, Belts, Whips, Harness, Saddles, Straps, Reins, Fire-caps; for Shoemakers' Aprons, Covering for Valises.

THE FOX.

Can you tell me of what animal this is a picture? That is right; it is a fox.

Is the fox a wild or a tame animal? It is wild.

Tell me some of its parts. Head, eyes, nose, teeth, body, tail, feet, etc.

What kind of a body has it—what is its shape? It is slender.

Can you tell me what kind of food the fox eats? It eats flesh.

Yes, it is carnivorous, or flesh-eating. Do you think you can remember that long word? What kind of teeth must it have, in order to tear flesh. Long, sharp teeth.

How many feet has he? Four.

Then what may you call him? A quadruped.

See how bright his eyes are! They do not look soft and gentle, like a good dog's, do they? What is the shape of his nose? Pointed.

With what is he covered from head to foot? Thick fur.

What is that for? To keep him warm.

Yes; and is it of any use to us? We make robes, mats, and hats of it.

In what kind of a house does the fox live? I think you don't know that. Well, he lives in a hole dug in the ground.

Tell me something else about him. He is very sly.

Yes; and now repeat in concert the parts, qualities and uses of the fox, as I have written them upon the board.

Parts—Head, Eyes, Nose, Teeth, Body, Feet, Tail.

Qualities—Wild, Quadruped, Carnivorous, Fur-bearing, Sly.

Uses—His fur is used to make Robes, Mats and Hats.

POPULARIZING SCIENCE.—What Humboldt said of his own manner of writing, is a good hint for all persons who wish to “popularize” science, a proceeding which, not unfrequently, in lectures and books, is productive of the most unreliable results. As there is no royal road to geometry, so there is no popular road to science. Humboldt, in a letter to Varnhagen von Ense, says: “The chief fault of my style is an unfortunate tendency to poetical expression—a book about Nature should give the same expression as Nature herself. In my *Aspects of Nature*, (and in this my manner differs radically from that of Forster and Chateaubriand,) I have endeavored always to describe and portray *truthfully*, and even to be *scientifically* correct, without entering on dry questions of science.” Scientific facts are always interesting when not enveloped in some theory whose professed object is to “develop” and draw conclusions from them which, in popular treatises, are almost always unwarranted and *ad captandum*.

MISCELLANEA.

A FRENCH savant is making some elaborate experiments on the effects of pressure upon various phenomena, such as flame, light, and combustion. For this purpose a large iron cylinder is provided, by command of the Emperor, capable of receiving the experimenters and all their apparatus, in which an extreme pressure may be produced. This cylinder is surmounted by two chimney-like openings, through one of which the experimenter may enter, and through the other the pressure will be applied. It is understood that the investigations will involve no little danger. In this connection, we may remark that the researches of scientific men oftentimes require boldness, as the hazards encountered are great. Many a noble life has been suddenly taken, by experimenting with chemical compounds, which are frequently explosive, and by inhaling noxious gases. The distinguished chemist Bunsen was recently severely burned by incautiously touching some materials which took fire at the simple impact of his hand. He is, however, announced to be out of danger, and recovering.

THE CASPIAN SEA ON FIRE.—The *Pall Mall Gazette* states that a short time since the naphtha wells, on some islands in the Caspian Sea, overflowed, and the inflammable substance spread over the water for miles around, and took fire. It burned furiously for forty-eight hours, and presented a magnificent spectacle. The fish in the sea were entirely destroyed, and vegetation on its shores so parched that the country around looks like a desert.

A JOURNEY around the circumference of the globe can be made in eighty days. Here is a programme of the journey: From New York to San Francisco, 7 days; San Francisco to Yokohama, 21 days; to Hongkong, 6 days; to Calcutta, 12 days; to Bombay 3 days; to Cairo, 14 days; to Paris, 6 days; to New York, 11 days. Total, 80 days.

WHEN will people learn that education is a composite process, not confined to books and teachers, but made up of the varied influences of home, fortune, and early association?

YALE COLLEGE.—The faculty of Yale College has recently made an important change, which will provoke criticism. For many years the classes have been divided into three or four divisions, arranged alphabetically. Now the divisions are made according to scholarship. The first division, which includes all the best scholars, have longer lessons than the others, and this makes their course of study more extensive. The general average of each student is made up at the close of each term, when some are promoted and others degraded. It is claimed by the faculty that the new system works well.

THE *Independence Belge* mentions that experiments, ranging over a period of twenty-six years, prove that salt mixed with all kinds of manure, tends to increase the power of production in the ratio of 250 per cent. Common sea water, where easily obtainable, is equally efficient.

THE result of the first examination for women in the University of London, excites some comment. There were nine who presented themselves for examination. Three were rejected, and the other six *all* passed with honors, and one third failed to pass. With young men, the average rule is said to be for fifteen per cent. to pass with honors, and about half to be rejected. The Sorosis will please take notice.

A GRAND UNIVERSITY.—It is reported that one million five hundred thousand dollars have been subscribed to build another university at Glasgow. It is already in process of erection, and is to be the finest edifice in the world. The present University has thirty-one professors, and matriculated one thousand two hundred and seventy-five students last year. Among the prizes by which its students are stimulated to effort, are some which entitle the winner to six hundred or seven hundred dollars per annum for ten years. The University is about four hundred years old.

CURIOSITIES OF CHEMICAL SCIENCE.—An atom of water sometimes makes a most extraordinary difference in the properties of bodies. Thus, to give some more familiar illustration, the addition of an atom of water to starch converts it into sugar; the subtraction of an atom of water from alcohol converts it into ether. But perhaps the most curious change produced by the removal of an atom of water from a body has been recently discovered by Dr. Matthieson of London. Morphia, the well known active principle of opium, is commonly used to allay vomiting, and very often performs the duty very effectually. But when morphia has been heated with hydrochloric acid, and an atom of water has been thereby removed, it is changed into the most active emetic known. It is not necessary to swallow it to produce the effect; a very small quantity introduced under the skin, or even, it seems, spilt upon the hand, is quite sufficient to produce vomiting, which, however, soon subsides, and leaves no nausea afterwards. The new body introduced into medicine has been named by its discoverer Ememorphia.

RUSTING.—The slow combustion of metals is called rusting, and the oxide formed is called rust. All the familiar metals, except silver, gold and platinum, are tarnished on exposure to the air; that is, they become covered with a film of rust, or oxide. That heat is developed by rusting, as by other kinds of slow combustion, is shown by the fact that if a large pile of iron

filings be moistened and exposed to the action of the air so that they rust rapidly, the temperature rises perceptibly. A remarkable case of heat developed by rusting, occurred in England during the manufacture of a submarine electric cable. The copper wire of the cable was covered with gutta percha, tar and hemp, and the whole enclosed in a casing of iron wire. The cable, as it was finished, was coiled in tanks filled with water; these tanks leaked, and the water was therefore drawn off, leaving about 163 nautical miles of the cable coiled in a mass 30 feet in diameter, (with a space in the centre six feet in diameter and eight feet high.) It rusted so rapidly that the temperature in the centre of the coil rose in four days from 66 to 79 degrees, though the temperature of the air did not rise above 66 degrees during the period, and was as low as 59 degrees part of the time. The mass would have become even hotter had it not been cooled by pouring on water.—*Hand-Book of Chemistry.*

THE celebrated clock at Strasburg is put into the shade by that now exhibiting in Paris, for the cathedral of Beauvais. To hide a defect in the building, the inhabitants decided upon having a monster clock; they subscribed forty thousand francs, and for the last four years ten clockmakers and forty assistants have been at work. It has cost one hundred thousand francs more than the original estimate, and has fourteen different movements and ninety thousand pieces of distinct machinery. The case is eleven yards high, in carved oak, over five yards broad, and nearly three in depth. At each hour a figure of Providence surmounting the clock makes a gesture, and quite an army of saints appear at windows, listening to the crowing of a cock. The principal of fifty dials has a figure of Jesus Christ in enamel upon copper, and above and surrounding are the figures of the twelve Apostles, also in enamel. The pendulum weighs nearly two hundred pounds. The machinery must be wound up every eight days. Not only does the clock show the hours and chime each lapsed quarter of an hour, but there are dials showing the days of the week, the motions of the planets, the rising and setting of the sun, the hours in the different chief cities of the world, the seasons, zodiacal signs, the length of each day and night, the equation of time, dates, saints' days, the changes of the moon, tides, solstices, movable feasts, the age of the world, leap years, longitudes and latitudes, eclipses, and every century that expires. The maker of this mass of intelligence is not inappropriately called Verité (truth). Crowds rush to see this marvel of mechanism.

THE boy who, when asked to what trade he wished to be brought up, replied, "I will be a trustee, because ever since papa has been a trustee we have had pudding for dinner," was a wise child in his generation.

ATHLETICISM, pursued with so much devotion in the English schools and universities, is now becoming the subject of severe criticism in the English journals. Young men, it is asserted, go to the universities professedly to read, but instead of attending to their books, pass their time in rowing, cricketing, jumping, running, throwing hammers and "putting" weights. Athletic sports are practiced to an extravagant excess, and time and money are wasted, while the opportunities of acquiring a finished education are lost. Not only are the ordinary courses of politics and contemporary history beyond the knowledge and interest of these muscular young students, but the young men, it is asserted, grow up to manhood painfully simple and loutish. The hardening, vulgarizing effects of athletic amusements, pursued beyond the point necessary to preserve health, it is contended, are visible in the rising generation of Englishmen. A disagreeable coarseness of thought and action, it is stated, is impressed upon the young men of the schools and universities, and accompanies them through life.

POETRY AS AN EDUCATOR.—The men who know man best are the great poets. They are great poets through the warmth and breadth and faithfulness of their sensibilities, their sympathetic consonance with all the voices of the human heart, and, above all, through ceaseless desire for the better. To utter and embody conceptions springing out of such soil there needs a rich and flexible, a clean, refined diction. Thence poets are the regents of language. Great poems are the highest classics; that is, they are the best products of the first class of literary works. Thus, besides the primary claim which good poetry has to be an educator, as tending through the truthfulness and purity of its thought and sentiment, to purge and elevate the sensibilities, it has a secondary claim, as furnishing the finest models of speech—transparent, sparkling, deeply-freighted words in golden cadences. These their claims have always been academically acknowledged—*Lippincott's Magazine*.

KEEP YOUR MOUTH SHUT.—Most of all, as a means of preserving the health, keep your mouth shut. Every physiologist will tell you that the mouth is constructed for calling and speaking, the nose for breathing and smelling. Each organ should be used for its designed purpose, and for that only. Impurities in the air reach the lungs through the nose. Especially, then, is the caution, *keep your mouth shut*, applicable to persons of a consumptive tendency. Air to the lungs reaches soonest through the mouth, and those sensitive organs receive their first injuries by that contact. Had the same air reached them by the natural and circuitous route of the nose, it would have been warmed and robbed of its power to harm.

Nothing is more natural than for persons, when walking or riding together, to be sociable by talking and laughing. Prob-

bly thousands of the young every winter, while enjoying sleigh-rides, permit the rawest, coldest winds to strike directly upon those wonderfully delicate organs, the throat and lungs, as they indulge in the merry talk and the loud laugh, which opens the mouth to the widest extent. "Mysterious" and "sudden" deaths are often the plainest results of open violations of the common-sense law of health.

"Shall we, then, keep silent when in company out of doors?" it will be asked. I answer, every exposure of your lungs and air passages is at your own risk and cost. The best I can recommend, is to put veils and mufflers before your mouth, or hold your hand before it, when speaking, singing, or laughing—any way, so that the air is properly warmed before it is inhaled, or—*keep your mouth shut.*

It will be objected that there are catarrhal affections which sometimes obstruct the nasal passages, and thus compel closing the nose and opening the mouth for breathing. But the clearing of those passages is as necessary as the clearing the throat of any foreign substance, and quite as easily affected. Therefore, I repeat, keep your mouth shut, and compel your nose to honor its office as the breathing organ.

Out door speakers and singers often feel the evil of raw air striking their lungs directly, and colds, pleurisy, inflammations, pneumonia, and death not unfrequently result. Their usual precaution is to speak slowly and moderately at first, increasing in power as they progress. When through, if wise, they bundle up their mouths, breathing only through their noses, giving their lungs rest by avoiding any further exposure. Custom enables some persons to labor this way for a long time, but it is almost, if not quite, universally a felt evil—often a fatal one.

If one's nose be closed by snuff-taking, vary the prescription and say, *keep your nose shut*, when the temptation appears. "If your head were designed for a dust-hole, the nose would have been put in the reverse position from what it is." Snuff-taking increases the difficulty of properly breathing, and should be abandoned on that account, as well as for its own unhealthiness, expense, and annoyances.—*American Phrenological Journal.*

TRAVELLERS on the planet Mars can go to any part of it on the element—land or water—on which they have commenced travelling, so complex is the arrangement of the continents and oceans on that planet. In this respect it differs very much from the earth, where the oceans are three times as extensive as the land, which is divided into two great insular continents.

THE only books that are believed to be entirely free from typographical errors are the Oxford edition of the Bible, a London and Leipsic Horace, and an American reprint from Dante.

AMERICA THE CRADLE OF THE HUMAN RACE.—Brasseur de Bourbourg, the eminent French archæologist, has come to the conclusion that the myths of the old Mexican gods and heroes are not only intimately related to those of China, India, Egypt, Persia and Greece, but also anterior to them; that the civilization of the Western Hemisphere is not borrowed from the Eastern Hemisphere, but that, on the contrary, America is the mother of Asia; that the continent which we have been accustomed to call the New World is not merely the oldest physically, as geologists had already taught us to suspect, but also the oldest ethnologically and in every way—the cradle of the human race.

HEALTHY.—California has had ten Governors, namely: Peter H. Burnett, John McDougal (who was Lieutenant Governor, and became Governor by the resignation of Burnett,) John Bigler (who served two terms,) J. Neely Johnson, John B. Weller, Milton S. Latham, John G. Downey (Lieutenant Governor, and who became Governor by the resignation of Latham, when he, Latham, was elected to the United States Senate,) Leland Stanford, F. F. Low, and H. H. Haight. All these gentlemen are now living, in good health and are active, save only McDougal. And every one of the living, save only Johnson (who is on the Supreme Bench in Nevada,) resides in California.—*Sacramento Bee*.

THE painful effect of artificial light upon the eyes is attributed by recent investigators to the great proportion of non-luminous rays, or rays of mere caloric bearing no illumination, which it contains. In the sunlight there are fifty per cent. of such rays, in gaslight nearly ninety, in electric eighty, in kerosene light ninety-four. A German chemist named Landsberg has discovered that by passing any kind of artificial light through a thin layer of alum or mica, these coloric rays are absorbed, while the illuminating power of the light rays is undiminished, and becomes exceedingly mild and pleasant to the eyes.

THE largest library in Germany is that at Munich, consisting of 900,000 volumes, an increase of 100,000 in the last fifteen years. Next is that at Berlin, 700,000, and others follow in this order: Dresden, 500,000; Stuttgart, 450,000; Vienna, 400,000; Darmstadt, 300,000. The University libraries are also immense. That at Gottingen numbers 400,000 volumes; Jena, 300,000; Breslau, 350,000; Heidelberg, 220,000; and there are thirteen other university libraries having upwards of 100,000 volumes. In addition to these there are scores of city, school, and private libraries containing from 50,000 to 200,000 volumes each.—*Educational Gazette*.

Two women graduated from the Eclectic Medical College, of the city of New York, recently.

THE influence of forests upon climate has been strikingly attested in Egypt. Mehemed Ali caused twenty millions of trees to be planted in the Delta of the Nile, where the days of rain, up to that time, averaged five in a year. Now, since the trees have attained a tolerable growth, the number of rainy days in a year has increased to forty. The climate of California and the Great Basin may, in like manner, be greatly modified in the course of another generation.

THE COLOR OF THE SKY.—Professor Tyndall is now engaged on the chemical action of light upon vapors, and he has quite recently handed in a paper to the Royal Society on the colors of the sky, on the polarization of light by the sky, and by cloudy matter generally. By the condensation of liquids of various kinds into particles so small that their diameters are measured, not by tens of thousandths, but by hundreds of thousandths of an inch, he succeeds in producing a blue which equals, if it does not transcend, that of the deepest and purest Italian sky; and this blue exhibits all the effects of polarization which have been hitherto observed in skylight.

AN officer of artillery made the following experiment at Quebec. Having filled a bombshell, about fourteen inches in diameter, with water, he closed it by driving an iron peg firmly in, and left it exposed to frost. The stopper was soon driven out to a distance of one hundred yards, and a cylinder of ice, nine inches long, issued at the opening. This shows the expansive force of ice.

PROFESSOR EDWARD HITCHCOCK, of Amherst College, has been elected a corresponding member of the Royal Historical Society of Great Britain.

LIFE IN THE DEEP SEA.—A curious experiment is said to have been recently performed in France to ascertain whether fishes can live in great depths of water. The fish were placed in vessels of water made to sustain four hundred atmospheres, under which they lived and preserved their health. It is therefore concluded that fishes may penetrate to very great depths in the ocean with impunity.

SAID one whose life commended his philosophy, "If I could see all the way instead of only a step, I should wish things to be exactly as God orders them. So I will trust Him who does see all the way."

THE VALUE OF LIFE.—The mere lapse of years is not life. Knowledge, truth, love, beauty, goodness, faith, alone can give vitality to the mechanism of existence.

A MUSEUM of Natural History is soon to be established in New York.

INTEGRITY OF CHARACTER THE PROPER AIM IN EDUCATION.

[Extract from Rev. R. A. HOLLAND'S Address before the Literary Societies of Washington College, Va., June, 1869.]

THE pernicious mistake that prevails in ordinary notions of education, springs out of a false conception of man's nature and mission. We consider man as a means—not as an end. We regard him as made for money, knowledge, rank, instead of regarding these as made for him. We turn him upside down and estimate his body higher than his intellect, and his intellect higher than his spirit. We look at naught save his exterior—the clothes he wears, the house he inhabits, the horses he drives, the votes he can command, the somersaults of political agility he can perform, the fulsome flatteries from partisan newspapers he can purchase, the quantity of pedantic lore he can pile into folio treatises upon a specific subject in the exclusive investigation of which his mind has burrowed itself out of the daylight of common sense.

We seldom think of the man as a something in itself superior to all he says or does, and compared to whose intrinsic value all accidents of applause, station, affluence, are the mere stadium *dust* he may gather in his race to the goal where hangs a crown of amaranthine honors plucked from the marge of the River of Life and braided for his brow by the hands of God.

There has been of late a great roar of Carlylean rant reverberating through our hollow materialistic literature about the "nobleness of work"—and what, when soberly interpreted, does all its grandiloquent jargon import? Is work the sublime purpose of existence? Was man created a little lower than the angels to hoe cabbages and mould gridirons? Dwells there in labor any *inherent* dignity to excite the admiration of its miserable thralls, or consists the dignity altogether in the patient Promethean bearing of what we feel to have been opposed as a punishment?

I would not disparage work as ignoble, for it is a law of our present abnormal conditions, and as such enforces conditions by annexing severer pains to idleness; but that this curse should be called a blessing, this drudgery ritualized into a worship, and man entreated to wear the collar of servitude as a royal carcanet, instead of being encouraged to tear it off as soon as possible, that he may range at will over the fenceless fields of thought, that invite the spontaneous play of his powers, is a substitution of Deuteronomy for the Gospel, insulting alike to the instincts and attainments of humanity.

We *must* work, but it is our prerogative to hold work subsidiary to self-improvement. He who voluntarily takes from the cultivation of his highest attributes those energies of thought and affection, which have no other excuse for seeking after an inferior object than to win by the acquisition of it greater freedom for

their rightful employ, commits upon himself an act of vandalism like that of the Turks who mutilated the columns of Baalbec to forge horse shoes out of the inner masses of iron that cramped their superposed stones into Corinthian shafts, which the world has for ages reckoned miracles of grand and graceful architecture.

Now what, let me ask, is the student in college striving for, as he cons his regular task? For mental discipline. And why for mental discipline? That he may become a successful lawyer. And why that he may become a successful lawyer? That he may earn money or reputation. And why that he may earn money or reputation? The question surprises him into dumbness. He has never dreamed of an end beyond these, which though very good in their appropriate uses, even as calves are good for veal and crocodiles for leather, yet have no more right to reign in the mind as the enthroned motives of its culture than have the calves and crocodiles of Egyptian idolatry to reign in the temple of God as the deities of its religion. Nor can I discern in what respect the man who thus applies his scholastic accomplishments to the exclusive quest of wealth or fame excels in the merit of his life-aim the pompous cock of lusty lungs and gesticulative wings, greedy as a member of the Fortieth Congress to get his share of fortune's crumbs, and equally ambitious to be heard with acquiescent wonder when crowing to his feathered fellow-citizens of the barn-yard.

I am before you, gentlemen, to maintain that, contemplated from the student's stand-point, there is but one legitimate aim for the process of education, which, taking its direction from the college, should steadily advance throughout the length of life. That aim is *integrity of character*. I use the term integrity not in its vulgar sense of rectitude, but in its etymological signification of wholeness, soundness, perfectness.

Solomon says that "as a man thinketh in his heart, so is he." The character of every individual depends to a considerable degree upon his estimate of himself. A low or lofty conception of one's own personal worth necessarily erects a proportionably low or lofty standard of sentiment and behavior. The idea we entertain of our capacities—of the possible extent of their development and the proper region of their exercise, determines whether in our careers we shall resemble the ostrich that hides his head in the sand, or the eagle that cleaves the storm-cloud with wings that cut their way to the empyrean. If a man regards himself as by physiological evolution the great grandson of an oyster, he will with hereditary instinct seek a comfortable sand-bed in some shallow cove of life, where he may selfishly fatten in his shell for the fishery of death. If, on the contrary, he claims descent from the Infinite and heirship to the Eternal, he will walk as becomes a prince who feels that his form is already robed in royal attire, and that his feet are upon the

palace stairs which slope through time up to the coronation hall of Heaven. Hence the importance that the student, who from the quiet of his college studies looks out as a spectator upon the busy world, should, before going forth to engage earnestly in its entangling concerns, select for the aim of his ambition the highest excellence of hale, robust, and symmetric manhood. The obligation of this aim might be established upon the basis of religious duty, since, as Sir William Hamilton has justly stated, in one of his Lectures on Metaphysics, "it is in the accomplishment of his own perfection that as a creature man can manifest the glory of God." I prefer, however, upon the present occasion to appeal for the authority of my postulate to the laws of man's constitution "as by nature necessarily an end to himself—whose perfection and happiness constitute the goal of his activity."

OF the two calamities—that your child shall read Latin at twelve, with incipient dyspepsia, or shall romp and frolic at the bottom of the spelling class, by all means choose the latter.

DEPARTMENT OF PUBLIC INSTRUCTION.

CALIFORNIA EDUCATIONAL SOCIETY.

THE twentieth meeting of the California Educational Society was held in the room adjoining Lincoln Hall, May 7th, at 12 o'clock, M. Vice President Bernhard Marks in the chair. Only twenty-eight members responded at roll-call out of the sixty-eight enrolled since the date of organization, May 9th, 1863.

The minutes of the preceding annual meeting were read and approved.

H. P. Carlton, Rev. O. P. Fitzgerald, and Isaac Upham were elected members of the Examining Committee.

The names of thirteen applicants for admission were presented to the Committee, who retired to the adjoining room to examine the credentials, and investigate the claims of candidates for membership.

Pending their report, the Treasurer presented his, which was substantially as follows :

	CR.
<i>California Educational Society,</i>	
By cash from Mr. John C. Pelton.....	\$ 29 00
By cash from Mr. Ira G. Hoitt.....	85 00
By cash from Mr. Silas A. White.....	107 00
By cash from Messrs. Scott, Kirkland and Schellhaus.....	15 00
Total	\$236 00

State Superintendent Fitzgerald, one of the managing editors of the CALIFORNIA TEACHER, presented a report, accompanied by

verbal explanations. Professor A. L. Fitzgerald was then elected a managing editor of the TEACHER in place of Rev. W. T. Lucky, whose term had expired.

The Examining Committee, through their Chairman, Mr. H. P. Carlton, reported favorably upon the names of twelve of the candidates, who were then balloted for and elected:

Mrs. A. E. DuBois, Mrs. C. L. Atwood, Mrs. Aurelia Griffiths, Misses Helen M. Thompson, Luara T. Fowler, Mary Pascoe, Jessie Smith, Agnes M. Manning, Jennie Smith, Mary J. Bragg, and Messrs. Eugene T. Thurston and J. W. Anderson were declared members.

Mr. E. D. Humphreys gave notice of his intention to offer an amendment to Section 2 of the Constitution, repealing that portion of it which made *all*, irrespective of sex, subject to the prepayment of an initiation fee. He expressed a desire to see the lady teachers admitted free from all monetary obligations.

One or two of the new members (women) protested *against* a change, saying that, while they were "granted similar privileges, (such as voting, and holding office,) they were willing and ready to share the obligations and responsibilities of their brother teachers."

Mr. White moved that the usual order of balloting for officers be reversed—the lowest in rank to be voted for first.

The motion prevailed.

The following named persons were elected to the various offices:

MR. EBENEZER KNOWLTON.....	Treasurer.
MRS. C. L. ATWOOD.....	Recording Secretary.
MISS L. T. FOWLER.....	Corresponding Secretary.
MR. ISAAC UPHAM.....	Vice President.
MR. E. J. SCHELLHous.....	Vice President.
MR. BERNHARD MARKS.....	President.
MR. A. L. FITZGERALD.....	Managing Editor California Teacher.
MR. H. P. CARLTON.....	Assistant Editor California Teacher.
MR. EBENEZER KNOWLTON...	Assistant Editor California Teacher.
MISS L. T. FOWLER.....	Assistant Editor California Teacher.
MISS CLARA G. DOLLIVER....	Assistant Editor California Teacher.

Professor John Le Conte, of the State University, and Dr. Hudson, of Christian College (Oregon,) were elected honorary members of the California Educational Society.

By motion, the Executive Committee was instructed to make the necessary arrangements speedily to fulfil the obligations implied in Section 14 of the Constitution.

They were instructed to prepare a diploma, which, when completed, should be a choice work of art, and emblematic of the noble purposes for which this Society was organized.

The meeting was adjourned *sine die*.

SILAS A. WHITE,
Recording Secretary.

 FIVE DOLLARS IN GOLD.

[THE following, from a boy of fourteen summers, must have a place in THE TEACHER. The occasion of its production was this: The prize for the best essay was FIVE DOLLARS IN GOLD. Hence the happy thought that "Five dollars in gold" could best be taken by FIVE DOLLARS IN GOLD.]

Five dollars in gold, did I hear you say?
 This nice little sum for the best essay,
 Offered by our Principal, so I am told;
 Now, boys, do your best for five dollars in gold!

You have talked with your parents, also with your friends,
 To find a good subject, not worn out at both ends;
 No matter the subject, boys, so I am told,
 If you only can win the five dollars in gold!

Write to the point, boys, but do not write long;
 Write either prose, poetry, or song;
 Write with a will, boys, and you'll be enrolled
 To receive the nice sum of five dollars in gold!

Five dollars in gold! five dollars, ah me,
 Many a person in need I will see
 In my future travels, so I am told,
 That *will die* for the want of five dollars in gold!

Five dollars to many young persons is naught;
 It came in their purses without being sought;
 They waste it away: they regret when they are old
 Having foolishly squandered five dollars in gold!

Five dollars to each of *us*, boys, is a pile,
 And the *lucky* essayist it will cause to smile;
 But the unlucky, when they know they are sold,
 Will say "sour grapes" to the five dollars in gold!

Now, ladies and gentlemen, *all* of you here,
 We have worked very hard during the year;
 If our humble exertions are not left in the cold,
 We have a much better prize than five dollars in gold!

FRANK BRAGG.

Lincoln Grammar School, June 11, 1869.

 REPORTS OF PUBLIC SCHOOLS.

ROLL OF HONOR.

OAKLAND SCHOOL DISTRICT, *Nevada County*: P. McAUSLAN, Teacher. The following is the Roll of Honor for the month ending June 31st, 1869: Sarah E. McKeon, Mary Ann McKeon, Amelia Bouvier, Ida Bouvier, Ola Gillespie, Christina Riebold, Myra Burnell, Joseph Hoskins, Lelan Johnson, Henry Stenger, F. Byrne, Fred. Bosse, David Whildin, Johnnie Grimes, Wesley Nichols.

MESILLA VALLEY PUBLIC SCHOOL, *Butte County*: J. P. TAYLOR,

Teacher. Term ending June 30th, 1869. Following are the names of pupils whose average per cent. for the whole term is above eighty: Henrietta Stewart, Mary Stewart, Frances White, Clarence White, Wm. Applegate, Milton Brown, Wm. Wait, Willie Stewart, William B. Kelley, and Samuel Highet.

OUR BOOK TABLE.

AHN'S NEW PRACTICAL AND EASY METHOD OF LEARNING THE GERMAN LANGUAGE, with pronunciations. By J. C. OEHLISCHLAGER. New York: E. Steiger. 1869.

This book has been much used both in the United States and the Canadas. The present edition is an improvement on the former as regards typography, grammar, elegance, and accuracy. The same general plan—the practical and the theoretical—remains; as does also Oehlschlager's system of pronunciation.

A SUMMARY OF ENGLISH AND OF FRENCH HISTORY. A. S. Barnes & Co. New York and Chicago. 1869.

The method of this little volume is admirable. The arrangement is such that the dates of events, with nut-shell descriptions thereof, can be quickly and clearly set before the eye by the use of the black-board. One drawback—the historical statements are not always reliable. To him who can and will correct these inaccuracies, the book will be valuable. H. H. Bancroft & Co., San Francisco.

ELEMENTS OF PHYSICAL GEOGRAPHY, together with a Treatise on the Physical Phenomena of the United States. Illustrated by one hundred and fifty Engravings, and thirteen Copperplate Maps, executed in the first style of the art. By JOHN BROCKLESBY, A. M., Professor of Mathematics and Natural Philosophy in Trinity College, Hartford, Conn., and Author of "Elements of Meteorology," "Elements of Astronomy," &c. Philadelphia: Published by E. H. Butler & Co. 1869.

This is one of the best of text-books on Physical Geography. The principles of the science are set forth in a philosophic manner, while the facts and phenomena are interesting and instructive. It is the fifth book of Mitchell's series of geographies; and for sale by A. Roman & Co., San Francisco.

COLOR. By MADAME MARIE ELISABETH CAVE, Member of the Academy of Fine Arts of Amsterdam. New York: G. P. Putman & Son. 1869.

These letters of Madame Cavé to her friend charm by their naturalness, and at the same time present valuable thoughts on Color. The Cavé method of drawing, so celebrated in France, is becoming popular in this country in proportion as it is better known and more practiced. The letters on Color naturally follow her writings on Drawing. The book will be valuable to the general reader, as well as the artist. A. Roman & Co., San Francisco.

THE GATES WIDE OPEN; Or Scenes in Another World. By GEORGE WOOD, Author of "Peter Schlemihl in America," "Modern Pilgrims," &c. Boston: Lee & Shepard. 1869.

The writer of this volume certainly is not guilty of the sin sometimes charged upon believers of spiritualizing religion and heaven until nothing

remains. The scenes, pursuits, and conversations imagined to be parts of the heavenly life, remind one of Oriental tales, with more awkward gorgeousness, and less of the realizing of those shadowy yearnings which fill the daily existence of dreamy natures. When some of "the saints of all ages in harmony meet," the conversations reported are sometimes ludicrous—if such a view were not "of the earth, earthy." Instance: A Roman matron and an American girl! Again, *American politics in heaven* would seem to be defective as regards the "unities." "To the lions," as told by CALLISTE, is vivid, stirring, pathetic. The book has much imagination; some thought; and will repay perusal. A. Roman & Co., San Francisco.

"*ABRISS DER DEUTSCHEN LITERATURGESCHICHTE.*" Leybold & Holt, New York.

This is a tersely written handbook of German authors and literature from the earliest period to the present time. Professor E. P. EVANS, of the Michigan University, is the author, and deserves our compliments for a book through which the young student will gain a clearer introduction to the literature of "father land" than through any other elementary work that has come before us. A. Roman has the work for sale.

THACKERAY'S NOVELS. Household Edition.

The price of these popular works of fiction—*Vanity Fair*, *Pendennis*, *The Newcomes*, *The Virginians*, etc.—is only one dollar and twenty-five cents a copy. This edition is bound in green morocco cloth; has clear typography, making a convenient and handsome library volume. There is also a cheaper edition (paper cover.) Price: for *Vanity Fair*, 50 cents; for *The Virginians*, 75 cents. The latter edition has numerous illustrations "by the author." A. Roman & Co., San Francisco.

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2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

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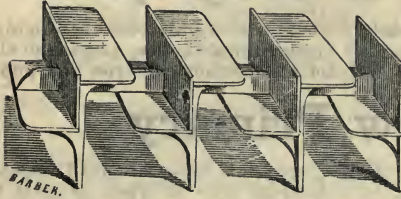
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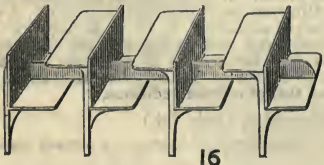
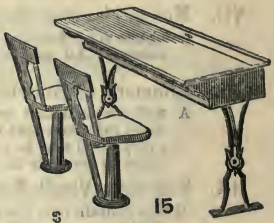
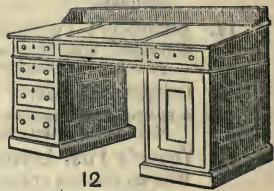
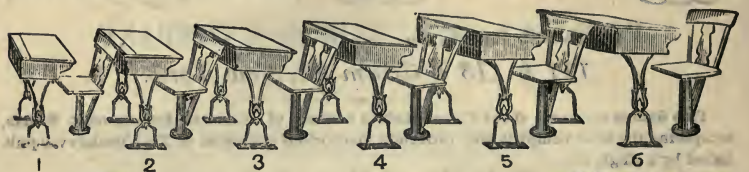
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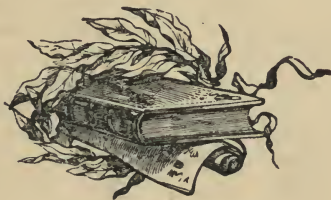
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THE STUDY OF ENGLISH.

BY FREDERIC HALL.

MUCH has been written and said upon the culture and development of the youthful minds, on the Pacific coast; and we hope much more will be written, said, and done, in relation thereto. While, however, we are considering and discussing the varied attainments, the possession of which so adorns the mind, and causes it to reflect lustre, like a globular mirror, in whatever position it may be viewed, let us not forget the importance of our vernacular tongue. The Romans highly prized their own, which they termed *patrius sermo*, the paternal or national speech. The nomenclature of studies at this day is by no means small. The cultivation of the languages, literature, history, and the sciences, swells the area of mental pursuits to an unbounded expanse. As we contemplate the vastness of the field, we are led to compare it with the idea suggested by a voyage upon the trackless ocean; for, however long that voyage may be, we are no nearer the horizon, at the end thereof, than at the point of departure.

Speech, by nature, is the vehicle of social intercourse, and by that speech we best convey to others whatever knowledge or ideas we may desire to impart to them. Is it not essential, then, that the language taught us in the nursery should be thoroughly taught and studied? And yet, in America, there seems to be a prevailing notion that the language of infancy, of every-day life, which is, for some years during the forepart of our lives, the only channel of thought and communication, is sufficiently cultivated, without giving it a place, for special academic instruction, in more advanced years.

The utterance of Ben Johnson was true, when he said, "Language most shows a man: speak, that I may see thee! It springs out of the most retired and inmost parts of us, and is the image of the parent of it, mind. No glass renders a man's form and likeness so true as his speech."

Let us carefully observe the conversation of many of the persons with whom we daily associate, and who are considered as very well educated, and we will soon be familiar with their characteristic phraseology, their pet phrases, which are inelegant, and offensive to cultivated minds. Their expressions furnish conclusive proof that they possess a limited command of language. And if we should be generous enough to admit that some of them are entitled to precedence, in general deportment in the drawing-room, we could not allow it to them in literature.

There is no man, be he learned or not, that is not delighted in listening to the utterances of a superior conversationalist, or in reading a classical style of composition in his mother-tongue. Who does not admire the easy flow, the clearness, and the appropriateness of the diction, in the works of Prescott and of Motley? While they are historic, they are seemingly romantic—so charmingly are the related facts dressed in their elaborate vestments. They possess a rythm and melody, a soft harmony of speech, that fall upon the ear as pleasantly as silk velvet to the touch. Who is not amazed, as well as delighted, as he peruses the works of Macaulay, flooded with intrinsic evidence of a vastness, of a depth of knowledge, arrayed with a distinctness and eloquence, and force of expression, that are truly wonderful? The right words are in the right places, and woven together with the richness of brocade. These writers exhibit a wide command over the English language, which is acquired only by a long and severe culture of that language.

The errors which we daily detect in the speech of mankind are not confined wholly to pet phrases, or vagueness of expression. Erroneous pronunciations are continually grating the ear; and we must admit that the rules of orthoepy are quite as essential, in the oral expression of our thoughts, as the rules of orthography in written discourse. We may enter our courts of judicature, to listen to forensic debate, and, without remaining any great length of time, we will be convinced that many discourse therein who are unaccustomed to accuracy of thought, and who are as ignorant of many of the rules of orthoepy as they fancy themselves versed in the rules of practice and of law. Vague expressions and synonyms are thrown together, with as much impropriety as though so many parts of speech had been written on bits of paper, and mixed in a basket, and spread promiscuously upon the table. This want of precision arises from an ignorance of the exact signification of the words used by them. They employ words as synonymous that are not so in fact.

Those who attempt to impart to us knowledge, cannot be suc-

cessful in impressing their ideas clearly upon our minds when there is a vagueness in their expression. Your photograph will not be clear and expressive if you sit for it in a cloudy day; it is clear light that carries distinctness and perfection to the picture.

Thoughts and words act and re-act upon each other. The more extensive our vocabulary, the greater will be the number of our ideas, and the more clearly will we be able to elucidate them. What we need, then, is the storehouse of our mind filled with English words, labeled with the exact definitions, and skill in the use of them, derived from practice. How we shall obtain possession of that vast vocabulary, and how we shall familiarize ourselves with the structure of our speech, are the questions.

It has been observed that it was an apothegm of Goethe that "He who is acquainted with no foreign tongue knows nothing of his own." There are numerous works, in the various languages, that bear internal evidence that the saying of Goethe is untrue. If historical testimony can be relied on, Demosthenes was acquainted with no language but the Greek; and if Goethe had declared that the speech of Demosthenes was not of the highest order, the expression would not have lessened the fame of the great Athenian orator, nor increased the brilliancy of that of the German scholar. Shakspeare, whose works will be considered a monument of the English language as long as that language shall continue to be spoken by mankind, could lay no claim to the knowledge of foreign tongues, notwithstanding the assertion that among his acquisitions were some Greek and Latin, some Italian and French. In the judgment of the greater part of literary men that have paid much attention to his works, and the history of his life, the evidence, both intrinsic and extraneous, has warranted the conviction that his linguistic attainments were confined to the English speech. The world generally acknowledge that he possessed, in an extraordinary degree, those qualities which rendered him a great judge of human nature. While he was entitled to all thus ascribed to him, they seemingly forget to praise him for that which made him a wonder, the overtowering tree in the literary forest. He was the mightiest-master of English words the world ever witnessed. Married, as he was, at the age of eighteen, having no scholastic advantages, and yet writing works containing over fifteen thousand different words, appears, indeed, like a miracle. Such are the facts. The most accomplished scholars have used only from eight to ten thousand different words; and the works of the prince of scholars, Milton, are embraced within the limits of the former number. From two to three thousand different words are the full extent used in ordinary conversation; while, among the most learned, the colloquial limits are within the number of five thousand.

Hugh Miller may be cited as another instance in support of the incorrectness of Goethe's apophthegm. He was acquainted with no language but the English. As a writer of that language

he stood among the foremost; and it has been said that an English lord once remarked that he would give five thousand pounds sterling to be able to write the English language as well as Hugh Miller. He perfectly understood the technical terms of the science of geology, and he learned them from the glossary, without the aid of any knowledge of the Latin or Greek.

Chief Justice Marshall received no collegiate training; but, by the force of his own genius, he paid some attention to the ancient classics. He read Livy and Horace; yet his knowledge of Latin was limited—that of Greek, less. In English literature he had a great pride to excel—a pride increased by the solicitations of an endearing and watchful father, who knew the value of his maternal speech. Milton, Shakspeare, Dryden, and Pope, stamped a part of their beautiful imagery upon his mind. His *Life of Washington* is sufficient proof that he was no mean master of English words. He stood before the world as the mightiest giant in jurisprudential lore. His decisions will appear like diamond blocks in the monument of juridical composition, and will be the very last in that sublime structure to decrease in solidity or lustre.

The fame of the foregoing writers was built up by a severe, close, and continued study of the best works in the English language. We have not made these citations and exemplifications in disparagement of the culture of foreign linguistics, but to show that they are not absolutely requisite to the formation of a correct, clear, eloquent, and forcible style of composition; and that, by the study of them, it does not follow, *per se*, that the student will be a good English scholar.

It is a trite remark that our language contains so many words derived from the Latin and Greek, that, in order to perfectly comprehend it, we must have considerable knowledge of the two former. That is an erroneous idea; for, upon the transition of most of the foreign words into our language, their significations are greatly changed; and, notwithstanding we may know their radicals, we do not receive enough information thereby to clearly and exactly understand their true definitions, in their new compound forms. And we find, by an examination of the glossary of any science, that we are better able to acquire correct definitions of the technical terms employed therein, than by etymological researches. A familiarity with the significations of the roots of those compound words that have been Anglicized assists the memory in retaining the definitions of their new forms; and that is about the extent of its function.

Does any member of the legal profession believe that, by his knowledge of Latin, he fully understands the names of the different writs, and the significations of the legal terms derived from that language? Does he not have to learn from the law their true meaning? Sometimes the Latin terms employed make no suggestion to the mind of the real legal definition.

It may be said, without contradiction, that the English language is better spoken in America, by the people as a body, than in the British Isles. And we may go further, and say that no language is so extensively spoken so well, in any part of the globe, as the English language is in the United States. One reason is that the common school system has enabled the poor of our country to learn to read; and another reason therefor is that we are furnished with newspapers so abundantly and so cheaply, that all may afford the luxury of perusing them. And a people who learn by the eye as well as by the ear, retain more correctly in their mind the forms of expression. But, when we compare the style of English which flows from the pen of the first-class scholars in England with that which emanates from the American writers, we must, generally, accord the superiority to the former. There are exceptions—some of our writers have not been surpassed by theirs. We refer to the writers of both countries as a class. Although the English colleges pay the highest attention to the culture of Greek and Latin, they likewise make the study of their home-born English one of the very first objects in their intellectual training. As we read the editorials of the first-class journals of London, we are struck with the clearness, precision, beauty, and force of their expressions.

We are firm believers in the study of as many languages as time will permit one to thus luxuriate in, with his mental faculties, without doing injustice to other accomplishments. The knowledge of Greek and Latin is of vast importance in the comprehension of classical and modern continental literature; but, with a view to a varied range of English, it is not of so much importance as the direct study of the English and the Anglo-Saxon.

We are decidedly of opinion that, in order to convey our ideas clearly, and in an attractive diction, whether in an oral or written form—to bring our speech up to a high standard—we must make a special study of the best works in our language.

“ETYMOLOGY.”

BY THOMAS J. BLAKE.

THERE cannot be any branch of study which possesses more charms for the man of education, than that of tracing to their fountain-head, the words which form the English language. The miner will wash out vast piles of earth, gravel, and the debris of primeval rocks, patiently and laboriously; well satisfied to find as the result of his toil, a few ounces of virgin gold. And thus it is with the philologist, for words are not mere arbitrary signs; each has its meaning and its history; each has its root, and the discovery of that original form and meaning affords

to the student the same sensations of pride and satisfaction as Balboa experienced when from "the peak of Darien, he looked down on the wide Pacific."

Great stress has always been laid on the study of orthography in the public schools of this State, yet many teachers appear to forget that a thorough knowledge of the structure of the Anglo-Saxon tongue, if not absolutely essential, is at any rate of the greatest utility, to all those who make it their business to instruct the rising generation.

Some persons imagine that nothing can be more dull and uninteresting than the task of teaching the elementary branches to mere children. To such, a spelling lesson is only a certain number of words to be learned by rote, hurried over, and then "go to your seats." But let the teacher be one who understands the *true* meaning of the word "Education," (the act of leading or drawing out,) and "presto!" the scene is changed; a spirit of enquiry and emulation is aroused, and what was once a dry, uninteresting task, becomes a source of pleasure to both the instructor and the pupil.

There is no doubt the grand foundation of the English language was laid in that lofty table-land of Armenia, whence the Indo-Germanic, or Caucasian family of languages derive their origin. Of these, the Hellenic and the Teutonic have been the most important; and though in many instances they have widely diverged, yet in an immense number of words, they still distinctly show an original unity of source, *e. g.* (*stidzein*;) German *scheiden*, "to divide;" whence "scissors," and "thy." Then the Arabic element can also be plainly seen in the prefix "al," which enters into so many words—*e. g.*, al-cohol, al-gebra, al-manac, Gibraltar, Gibel-al-Tarik, etc., etc.

When the Saxon sea rovers invaded Britain, the original Celtic male population was almost exterminated; hence that element has left but few traces behind it. There are only some forty or fifty words of pure Celtic surviving, and these refer chiefly to the occupations of the female sex. What a tale of ruthless slaughter does this apparently insignificant fact unfold!

Saxon, Norman, French and Latin are the three main components of the English language. The Saxon, a serf, has contributed the greater number of the terms relating to agriculture and the more lowly pursuits. The Norman, a feudal lord, has originated the nomenclature of the battle-field, the tournament, the minstrel's art, hunting and falconry, and last, not least, the joys of the banquet and the wine-cup; whilst the Latin was for ages the language of the priest and the scholar.

Now, many may say that such a *radical* knowledge of English would be utterly useless in a common school in California. I do not think so. Children are naturally prone to enquiry; if they are treated as little human beings, they will be perpetually asking the reason of almost everything they see or hear, and their

apparently simple questions will frequently puzzle the most learned of their instructors.

Now, let us take a few of the most common English words:

“GREEN.”—“Well, Green is a color.” A child may ask—“What color is it? Why is it called green?” Wiseacre replies, “Green is green. Go to your seat!” But if the teacher explained that “Green” was a form of “grown,” (“grin,” and meant the almost universal color of everything which grows from the earth, the child would have been delighted and satisfied, instead of being mortified and disheartened. “Lady,” from the Saxon “loaf or bread-giver,” will give an opportunity for explaining something of the manners and customs of our Saxon ancestors.

“BOOK,” “VOLUME.”—In explaining the original meaning of “Boc” and “Volumen,” a synopsis of the history of written language can be given. Letters may be traced from inscriptions on stone and metals, through the epochs of papyrus, parchment and paper, from the chisel, graver, and the styles of the gray-goose-quill and the printing press.

“CANDIDATE.”—When it is once clearly explained that this term originally signified “one dressed in white,” and that amongst the Romans all office-seekers were accustomed to assume the white toga or upper garment, the pupil will then clearly understand the meaning of the word, and most probably will feel anxious to learn more of the manners and customs of those old Roman worthies.

And so the list might be continued to an immense length; but for the present I will not trespass on your valuable space, for doubtless in this State there are many who are anxious to submit their views on various branches to their co-laborers; but I would suggest that the studies of Etymology and Orthoepy are of the greatest importance in teaching the art of “English Composition,” an art which is of far more *practical utility* than some other branches of education to which much valuable time is at present devoted by both teachers and pupils.

VALUE OF MATHEMATICS.

If our pupils rightly understood the *value* of “figures,” I do not think they would complain because they are compelled to study arithmetic.

Does not every boy want to know how many bunches of fire-crackers he ought to receive if they are worth a bit a bunch, and he has just half a dollar? If Mary gets eighty per cent. on the Roll of Honor and Hattie only seventy-five, does not Mary want to understand who stands first?

Don't you think John was a little ashamed when his employer asked him to add up a bill, and he had to reply, “I can't do it”?

How often we see young ladies purchasing articles have to ask the store-keeper how much the twelve yards of calico come to at a bit a yard, or some similar question.

If Harry expects to become a farmer or carpenter or lawyer or doctor, he must learn to use figures. Poor Dick cannot even become a good blacksmith or carpenter without knowing something about arithmetic.

I once heard a wealthy farmer offer to rent his vegetable garden on very advantageous terms to Tom, a poor Irishman, but an excellent gardener. "Mr., I'm very much obliged to ye, but I can't 'figger' any, and I'd have to hire me a man to do it, so ye see I could not make much." Poor Tom, if there is one in your school, I hope he will not have to say the same.

I know, Willie, you can row a boat and set up a sail, but you can never become master of that fine ship you talk so much about, unless you can make "calculations."

Indeed there is hardly a single situation of honor or profit that a young man can obtain unless he understands arithmetic to some extent.

But suppose we go a little deeper into the "value of mathematics." We have a knowledge-loving pupil who would educate himself without using mathematics. Now, as he lives in California and is often around mills and mines, he would know something about the force of running water and the power of the different kinds of wheels, but he soon finds there are too many "figures" for him to understand these things. He watches the men lifting rock with a derrick and thinks he could understand the principles of the pulley, but the men tell him, not unless he had studied arithmetic.

It so happens one day that a young "Digger" shoots an arrow up in the air for sport, and he hears a gentleman standing by say, "If I had held my watch, then, I could have told how high the arrow went." Our pupil is very much interested and asks the gentleman how he could have told. He attempts to explain, but on learning that the lad has never studied arithmetic, he says, "O, you could not understand if I should try to explain it." Poor fellow, he is now sorry that he did not study arithmetic.

He sees the rainbow—surely no arithmetic about that—and asks his teacher what produces it. The teacher kindly explains the phenomenon to him, but our student has only a confused idea of prisms and angles.

He turns from philosophy to chemistry and for a while makes good progress, his pathway illuminated by the "red lights and blue lights of crucibles and retorts"; but in the end he finds that chemistry is but a science of weights and measures, which he cannot comprehend without the aid of mathematics. Even history and geography are difficult for him to understand from the

constant recurrence of figures ; and geometry and trigonometry are but dead letters.

He at last picks up a rock and laughs bitterly to himself as he says, "I'd like to see the *mathematics* about you?" Alas! he asks a mineralogist a question about the rock. It's a piece of quartz and contains a *crystal*, and before his horrified vision rises a long row of cubes, hexagons, and pyramids.

He turns from the things of earth and glances toward those of heaven. The sun furnishes us with most of our light and heat, but he cannot understand the law which governs the propagation of the one and the distribution of the other without bringing the humble science of arithmetic to his aid.

As he watches the stars—"so kindly looking down"—moving through the vast space of immensity, his heart is prompted to ask the question, "Whence come ye, and whither do ye go"? But when he attempts to investigate the laws which control the movements of the heavenly bodies, he learns that they are built upon fixed, immovable *mathematical* foundations, and that the divine science of astronomy opens not her secrets to him who slights her fair hand-maiden, "Mathematics."

S. S. BOYNTON.

PECULIARITIES OF THE ENGLISH LANGUAGE.

COMPOUND WORDS.

In Latin and Greek, where a verbal root is compounded with a preposition or an adverb, the latter is placed before the root so as not to interfere with the signs for person, number, tense, &c. *Comprehendunt*—is the verb *hendo*, with the prepositions *con* and *prae* before it; *t*, the sign of the person; *n*, that of the number, and *u*, the vowel of union.

But in English, in the case of the verb, we more generally put the added word *after* the radical part; if a noun, before it. Thus "to start-up," is a verb, but "upstart" is a noun. To "set-on" is a verb, but the noun is "on-set; "fall-down," but "down-fall;" "fall-off," but "off-al;" "set-off," but "off-set;" "set-back," but "back-set;" "rise-up," but "uprising;" "cry-out," but "out-cry;" "gather-in," but "ingathering;" "break-out," but "out-break;" "cast-out," but "out-cast;" "shoot-off," but "offshoot;" "stand-by," but "by-stander;" "lay-out," but "outlay;" "go-out," but "out-going;" "pour-out," but "outpouring;" "come-in," but "income;" "let-in," but "inlet;" "let-out," but "out-let."

So with nouns, as side, inside, outside, &c.

In some cases the verb may be either way, but generally with a difference of meaning: see-over, over-see, oversight; look-over, over-look, where the latter nearly reverses the meaning of the former; compare, revise and review. Fulfill, fill full; run out,

but out-run, is very different. We may slip-down on the ice, which refers to the head, or we may slip up on the ice, which refers to the feet. We may burn down a house, or burn-up a house, and we can see but little difference. But if we cut down a tree, it is a very different thing from cutting it up afterwards. Though we speak of cutting a tree up by the roots. We may have the verb throw-over, or to over-throw, but the noun is in the form of the latter. To with-hold, keep back, is not the same as to hold-with, aid, agree-with.

TAUTOLOGICAL WORDS.

We have a good many words which from oversight and usage, are tautological. Drinking-bout, we say; but *bout* itself is connected with drinking; equivalent then to drinking. Robin red breast—but *rob* in robin seems connected with *rubus*, red. We gather to-gether, but together is from gather. We return again, but the *re* in return means again. We have woollens-de-lane, forgetting that *lane* is wool. We speak of mount Ben Nevis in Scotland, but *Ben* is mountain. We have Brindon-hill, but *Brin*, and *don*, and *hill* are the same three times over; the two former being *hill*. So in Hindostan, Neilgherry hills, is blue hills hills. We speak of flying fowl, but fowl is from *fly*. We use the printing press, but to *print* is to press. Persons are afflicted with a stroke of apoplexy, but *plex*, in the latter word, is a blow, or stroke; we have olive oil, but *olive* is from the same root as *oil*. So with blister plaster. (Dan. 3: 6—11,) “A burning fiery furnace,” probably contains the word *fire* three times. Sign and seal, but seal is from the diminutive form of signum, a sign. He suffered from unjust slander. Men speak of Oxford Ford, forgetting that they have *ford* twice over. So Cambridge bridge.

The way some of these are found in proper names is by conquest and occupancy of the country by new races with new languages. The original people may give to a mountain, a name which means to them mountain or hill; as *Ben*, or *pen*, in all the Celtic dialects, is *head* or height; but another race might come in, and *add* to the first name, one in their language which meant the same; and a third race might repeat the operation, which would give us three words for the same thing nearly or quite synonymous.

So we can make a legitimate sentence thus, “I am almost all alone”—in which *all* occurs four times, al-so, all-most, all and all-one.

PARADOXICAL EXPRESSIONS.

So, too, we may have paradoxes and contradictions in language. (1 Tim. 5: 13,) Idlers are “busy bodies.” “When unadorned, adorned the most.” “The irresistible might of weakness.”

“It was cruel kindness;” Beholden, is not beheld or seen; a

blazed tree in a new settlement is far from being blazed with fire. Matt. 28: 29, Christ speaks of taking from a man who has nothing, what he has. Nervous, means both strong and weak. *Post* is something fixed, stationary—but to ride post-haste is to go swiftly. We may have a plentiful scarcity.

We have plants called bitter-sweet. We have cleave to split, and cleave to adhere. *Let* was formerly to hinder. Dark, seems connected with a word that means to see, from the same root as Dorcas and Dragon. Blake, bleach, blanch connected with *white* are similar to *black* in sound. As the effect of extreme cold is so like that of heat, writers speak of being *parched* with cold. Silver-plated ware is not silver plate: we have read of things gilt with silver. A man promises to *whitewash* with some other color. Pope speaks of "huge heaps of bitterness." Merits and demerits in Shakspeare are the same. Annul and disannul. The farmer says his cotton is getting into grass, instead of grass getting into his cotton; his farm works ten hands, instead of ten hands work the farm. The positive in Latin—*senex*—is older than *senior* the comparative. A holiday is far from a holy day. A man who has learned and practices a trade, is not therefore a tradesman. A professional man may not live by his *practice*, but by his *practices*. In entertaining guests, a hotel-keeper says he will *eat* and *sleep* ten; or he will *eat* them but not *sleep* them.

RELATION OF THE NORMAL SCHOOL TO COMMON SCHOOLS
AND COLLEGES.

THE true place of the Normal School in our educational system does not seem to be clearly apprehended by many of its friends. It is, by some, classed in the college or university system. The Normal School is thus thought of as an institution similar to the universities at Lawrence, Baldwin, and other places. In the minds of others the Normal School occupies something of an intermediate place between the common school and the college, higher than the one, not so high as the other. It is looked upon as an academy, or preparatory school, where young men and women can be fitted to enter college.

Neither of these is correct. The Normal School occupies a position distinct from that of any other institution of learning in the State. It is neither an academy nor a college, and ought not to be confounded with either. Its aims and aspirations are entirely different. Its course of study has little in common with either grade of institutions, the classics finding no place in its curriculum of study. Where the studies are the same, the methods of instruction differ widely. Its design is, not to prepare its students for general business, but for a special vocation, that of teaching.

But, while the connection of this institution with the college

system of the State is remote, with the common school system it enters into near and permanent relationship. Everything that it does, every lesson learned and recited, is with direct reference to the wants of the public schools, and is intended for their improvement. The true place of the Normal School is, therefore, *in* and at the head of the common school system. It is thus, emphatically, the school of the people. Using the language of President Edwards, of Illinois, "The Normal School is pre-eminently a democratic institution. The good it does is diffused throughout the common schools, taught by its graduates and pupils, to the remotest nooks of the State. From it every man, high or low, rich or poor, may reasonably expect some direct personal benefit. Give it a fair opportunity, and it will improve the instruction imparted to every child in the commonwealth. I believe that, in this particular, the Normal School excels every other institution of learning. All learning has in it a strong element of popular usefulness; but the culture imparted here goes direct to the common people, without loss, leakage, or waste."

The characteristic features of the school being what they are, give to it certain elements, both of strength and weakness. One element of strength is the unity of purpose found in the institution. All its members, students and teachers, work together for the accomplishment of one noble object, viz. : the upbuilding, in our State, of a system of public schools in which all the children shall be rightly taught such lessons from books, and lessons from life, as will fit them to become men and women of culture, worthy of Kansas and the times in which they live.

Another element, possibly of strength, perhaps of weakness, is found in the necessary isolation of the school from any and all other higher institutions of learning. The nature of its professional training, its method of instruction, the limited means of its students, and the fact that its pupils are drawn from only a small class of the population of the State, preclude its successful working as a department of a university, or in connection with any other institution differing from itself. The consolidation of State institutions, as proposed in the last Legislature, would, as it seems to me, prove highly disastrous to the interests of the Normal School, whatever its effect might be upon the Agricultural College and the State University.—*Kansas Teacher*.

PROFITS OF PUBLISHING.—Of every ten books published, six never pay for printing, two just pay and that's all, one gives a slight profit, and one substantial gains.

THE Illinois Industrial Institution refuses to admit female students.

OBJECT LESSONS FOR SMALL CHILDREN.

COPPER.

HERE is a piece of copper; can you tell me where it came from? From the ground.

Then what is it? A mineral.

Yes, substances that are dug out of the earth are mineral, but copper is also a metal. Is there any of it found in this State? Yes, there is some found in California.

Tell me some of its properties. It is hard and opaque.

Is it solid or liquid? Solid.

Take it in your hand, and see if it is heavy. Yes, it is.

What is its color? Brown.

Yes, an orange-brown.

Put it to your tongue and see if it has a taste. It has.

Do you know what name is given to substances that have taste?

Well, they are said to be sapid. Don't forget that term.

I will strike these two pieces of copper together; you see it makes quite a loud sound. What did I tell you substances that give out sound, are called? Sonorous.

On account of its being so sonorous, it is used in making bell-metal.

Will copper melt? You don't know? Yes, it is fusible.

Can it be hammered or rolled into sheets? Yes, it is malleable.

It can be drawn out into wire, too. What term shall we give it, then? Ductile.

Repeat after me, copper is fusible, malleable and ductile.

Now, tell me some of the uses of copper. Don't you know any? Well, when it is rolled out into sheets, it is used to cover the roofs of houses, and the bottoms of ships. Boilers and nail-heads are made of it. Some coins are made of copper, with another metal.

Repeat in concert, the qualities and uses of copper:

Qualities—Opaque, Hard, Mineral, Metal, Fusible, Malleable, Ductile, Sonorous.

Uses—To make Boilers, Coin, Bell-metal, Wire; to cover the roofs of houses, and the bottoms of ships.

LEGACY TO DARTMOUTH COLLEGE.—The Hon. Richard Fletcher, of Boston, whose decease was recently announced, has left a residuary legacy to Dartmouth College, his Alma Mater, estimated at \$100,000. It is to be invested as a permanent fund, and the income used at the discretion of the Trustees. This is the largest gift the college has ever received; and it is to be hoped that it will prove the precursor of others, fitly signaling the Centennial year, and insuring the greatly increased usefulness of the venerable Institution.

MISCELLANEA.

THE LOS ANGELES MEAT SHOWER—THE BIGGEST STORY YET.—From the *News*, of August 3d, we cull the annexed particulars of the shower of meat, blood and hair, at Los Angeles:

Mr. Parker, an old and respected citizen of Los Nietos Township, exhibited to us yesterday a number of pieces of meat that fell on the farm of J. Hudson, in that township, at 12 o'clock, m., on Sunday last. From what we can learn, it was a shower of meat and blood, similar to that reported in Santa Clara county some months ago, covering an area of about two acres of ground. Some ten or more persons were at the house of Mr. Hudson, preparing for the funeral of a child, and were startled by the fall of meat and blood that lasted fully three minutes, covering the blades of corn, and leaving them red. The blood that lodged upon the corn blades and grass was mixed with a short, fine hair, resembling the outer coating of furred animals. The meat, which was found over the entire two acres, was in pieces ranging from fine particles to strips of six and eight inches in length, and had the appearance of being freshly torn from some animal or animals. Mr. Parker exhibited to us several pieces of the meat, varying from one to six inches in length, one of which appeared to be the lights of some animal; another was liver, and another, picked up by a gentleman present, was the lower part of a heart, in perfect shape, and about one and a-half inches long. A large quantity of meat was gathered up and preserved by different parties. The day was perfectly clear, and the sun was shining brightly, and, although the shower of meat and blood appeared to come from the coast, there was no perceptible breeze at the time. The occurrence naturally created considerable excitement among those present, and the hope is freely indulged in that science will offer some reason for this very singular phenomenon.

AGE OF THE EARTH.—Among the astounding discoveries of science is that of the immense periods that have passed in the gradual formation of the earth. So vast were the cycles of the time preceding even the appearance of man on the surface of our globe, that our period seems as yesterday, when compared with the epochs that have gone before it. Had we only the evidence of the deposits of rocks heaped on each other in regular strata by the slow accumulation of materials, they alone would convince us of the slow maturing of God's works on earth; but when we add to these the successive populations of whose life the world has been the theater, and whose remains are hidden in the rocks into which the mud, or sand, or soil, of whatever kind, on which they have lived, has hardened in the course of time; or the enormous chains of mountains whose upheaval divided these periods of quiet accumulation by great convulsions; or the changes of a

different nature in the configuration of our globe, as the sinking of lands beneath the ocean, or the gradual rising of continents and islands above; or the slow growth of the coral reefs, those wonderful sea-walks raised by the little ocean architects whose own bodies furnish both the building stones and the cement that bind them together, and who worked so busily during the long centuries that there are extensive countries, mountain chains, islands, and long lines of coast consisting solely of their remains: or the countless forests that have grown up, flourished and decayed to fill the storehouse of coal that feeds the fires of the human race—if we consider all these records of the past, the intellect fails to grasp a chronology of which our experience furnishes no data, and time that lies behind us seems as much an eternity to our conception as the future that stretches indefinitely before us.—*Agassiz.*

WHAT MAKES A BUSHEL.—Wheat, sixty pounds; corn, shelled, fifty-six pounds; rye, fifty-six pounds; oats, thirty-two pounds; barley, forty-six pounds; buckwheat, fifty-six pounds; Irish potatoes, sixty pounds; sweet potatoes, sixty pounds; onions, fifty-seven pounds; beans, sixty pounds; bran, twenty pounds; clover seed, sixty pounds; timothy seed, forty-five pounds; hemp seed, forty-five pounds; blue grass seed, fourteen pounds; dried peaches, thirty-three pounds.—*Farm Home Journal.*

A LATE discovery, by means of spectral analysis, consists in the demonstration of the existence in the flame of the sun of the metal called titanium.

THE Supreme King of Siam, a very observant astronomer, with a collection of scientific instruments that would do honor to any European philosopher, left his capital for Wai-wau, in the Gulf of Siam, to direct the observations of the total eclipse of the sun.

QUEEN VICTORIA will devote £2,500 of the profits of her book to founding scholarships for the boys of Balmoral.

THE AURORA.—The brilliant aurora borealis, seen here on the 15th of April, excited great attention in England. At Greenwich, at an altitude of twenty-five degrees, waves of light seemed to rise and break like the foam of waves running over a sandy shore. The display is said to have been as magnificent as any in northern latitudes.

KNOWLEDGE is not wisdom; it is only the raw material from which the beautiful fabric of wisdom is produced. Therefore let us not spend our days in gathering materials, and live and die without a shelter.

DEPARTMENT OF PUBLIC INSTRUCTION.

SEMI-ANNUAL APPORTIONMENT—AUGUST, 1869.

OFFICE OF CONTROLLER OF STATE,
SACRAMENTO, Cal., August 1st, 1869. }

To the Superintendent of Public Instruction of the State of California:

SIR: In accordance with the provisions of an Act to provide for a system of Common Schools, approved March 21st, 1868, I hereby report as follows:

The securities belonging to the Common School Fund consist of bonds of the State of California, bearing interest at seven per cent. per annum, held by the State Treasurer in trust for the School Fund, and amount to eight hundred and eighty-one thousand (\$881,000 00) dollars.

The amount of money in the School Fund this day, subject to apportionment, is one hundred and twenty-one thousand eight hundred and twenty-seven dollars and eight cents (\$121,827 08).

The statement showing the balance subject to apportionment is as follows: One half of amount received for poll taxes since February 1st,

1869.....	\$16,550 09
Interest on State School Lands.....	62,296 31
Property Tax (8 cents on each \$100).....	14,569 16
Interest on bonds held by State Treasurer	30,835 00
Total.....	\$124,250 56

From which deduct as follows:

Certificates of the Register of the State Land Office, of lands proved not to be the property of the State, received from County Treasurers.....	\$2,408 48
Amount paid for CALIFORNIA TEACHER.....	15 00
	2,423 48

Amount subject to apportionment.....\$121,827 08

Very respectfully, your obedient servant,

ROBT WATT, Controller.

APPORTIONMENT.

Total number of school census children between five and fifteen years of age entitled to receive school money, 104,092. Amount per child, \$1 17.

ALAMEDA COUNTY.—Alameda, 130; Alvarado, 98; Alviso, 51; Bay, 37; Brooklyn, 465; Centreville, 115; Eden Vale, 39; Encinal, 82; Eureka, 84; Laurel, 191; Lincoln, 40; Livermore, 149; Lockwood, 38; Mission San Jose, 74; Mission Peak, 26; Mowry's Landing, 45; Murray, 119; Oakland, 1,038; Ocean View, 91; Palmyras, 41; Peralta, 112; Pleasanton, 82; Redwood, 24; San Lorenzo, 76; Suñol, 56; Temescal, 106; Union, 269; Washington, 73; Warm Springs, 84; Cosmopolitan, 52; Vallicetos, 58. Total. 3,945; amount, \$4,615 65.

ALPINE.—Everett, 18; Franklin, 41; Fredericksburg, 22; Lincoln, 22; Webster, 27. Total, 130; amount, \$152 10.

AMADOR.—Amador City, 62; Aqueduct City, 30; Buckeye Valley, 25; Buena Vista, 70; Clinton, 36; Copper Hill, 25; Drytown, 85; Fiddletown, 102; Franklin, 15; Forest Home, 37; Ione Valley, 109; Jackson, 195; Jackson Valley, 33; Lancha Plana, 94; Mountain Echo, 24; Mountain Springs, 28; Milligan's, 42; Muletown, 52; Oneida, 74; New York Ranch, 35; Puckerville, 60; Pine Grove, 65; Sutter Creek, 219; Union, 95; Union Church, 26; Upper Rancharia, 41; Van Winkle, 12; Volcano, 54; Williams, 30; Willow Springs, 33; Washington, 95. Total, 1,903; amount, \$2,226 51.

BUTTE.—Bangor, 40; Bidwell, 20; Butte Valley, 73; Central House, 50; Cherokee, 94; Chico, 277; Cañon Creek, 42; Delaplain, 50; Dayton, 82; Eureka, 42; Evansville, 36; Forbestown, 64; Hamilton, 37; Kimshaw, 90; Live Oak, 59; Lone Tree, 35; Mesilla Valley, 42; Morris Ravine, 17; Mountain Spring, 48; Mud Creek, 73; Meridian, 44; Oroville, 290; Oregon City, 39; Pine Creek, 57; Rio Seco, 63; Rock Creek, 63; Salem, 32; Sandy Gulch, 36; Stoneman, 21; Upham, 8; Wyandotte, 68; West Liberty, 28; Wyman's Ravine, 42. Total, 2,062; amount, \$2,412 54.

CALAVERAS.—Angels, 171; Altaville, 90; Brushville, 115; Comanche, 111; Campo Seco, 114; Cave City, 78; Chili Gulch, 78; Copperopolis, 261; Douglas Flat, 46; Eureka, 31; Fourth Crossing, 67; Mokelumne Hill, 189; Mosquito Gulch, 25; Murphy's, 212; Negro Gulch, 50; Petersburg, 72; Pleasant Spring, 12; San Andreas, 201; Spring Valley, 41; Telegraph City, 92; Upper Calaveritas, 58; Vallecito, 88; West Point, 79; Washington Ranch, 94; Union, 55. Total, 2,430; amount, \$2,843 10.

COLUSA.—Butte Creek, 19; Colusa, 136; Dry Slough, 65; Franklin, 88; Grand Island, 67; Grindstone, 43; Indian Valley, 88; Jackson, 20; Marion, 40; Princeton, 39; Plaza, 30; Stony Creek, 54; Union, 37; Washington, 29. Total, 755; amount, \$883 35.

CONTRA COSTA.—Alamo, 77; Amador Valley, 31; Antioch, 123; Carbondale, 73; Central, 53; Danville, 30; Excelsior, 58; Green Valley, 42; Iron House, 36; Lafayette, 45; Liberty, 43; Lime Quarry, 46; Martinez, 171; Moraga, 36; Morgan Territory, 24; Mount Diablo, 93; Mount Pleasant, 98; Oak Grove, 83; Pinole, 73; Pleasant Hill, 25; Pacheco (and Bay Point), 186; Rodeo Valley, 80; San Pablo, 209; San Ramon, 55; Somersville, 134; Sycamore Valley, 32; Tassajara, 30; Willow Springs, 45; Lone Tree, 32; Eden Plain, 51. Total, 2,114; amount, \$2,473 38.

DEL NORTE.—Crescent, 154; Rowdy Creek, 27; Bradford, 46; Happy Camp, 23. Total, 250; amount, \$292 50.

EL DORADO.—Buckeye Flat, 82; Bear Creek, 20; Blair's, 66; Carson Creek, 37; Clarksville, 38; Cold Spring, 50; Coloma, 107; Coon Hollow, 75; Deer Creek, 17; Diamond Springs, 87; Duroc, 17; El Dorado, 139; French Creek, 41; Greenwood, 44; Garden Valley, 35; Georgetown, 153; Green Valley, 37; Gold Hill, 49; Indian Diggings, 49; Jay Hawk, 53; Kelsey, 47; Latrobe, 90; Missouri Flat, 20; Mountain, 35; Mount Gregory, 13; Mount Aukum, 56; Mosquito, 14; Natoma, 9; Negro Hill, 17; Newtown, 28; Oak Hill, 87; Pilot

Hill, 40; Placerville, 409; Pleasant Valley, 48; Reservoir Hill, 68; Salmon Falls, 48; Smith's Flat, 46; Spanish Dry Diggings, 39; Tennessee, 38; Uniontown, 53; Wild Goose, 10. Total, 2,411; amount, \$2,820 87.

FRESNO.—Chowchilla, 109; Dry Creek, 49; Hazleton, 65; Kingston, 42; Lake, 14; Millerton, 69; New Idria, 58; Scottsburg, 82. Total, 488; amount, \$570 96.

HUMBOLDT.—Arcata, 235; Eureka, 282; Bucksport, 72; Table Bluff, 79; Slide, 50; Eel River, 57; Hydesville, 115; Van Duzen, 43; Grizzly Bluff, 60; Island, 43; Ferndale, 54; Centerville, 19; Bear River, 21; Mattole, 83. Total, 1,213; amount, \$1,419 21.

INYO.—Independence, 14; Milton, 16; Union, 44. Total, 74; amount, \$86 58.

KERN.—Havilah, 64; Kern Island, 70; Linn's Valley, 66; Tiachipe, 83; Kernville, —. Total, 283; amount, \$331 11.

KLAMATH.—Klamath, 63; Trinidad, 73; Orleans, 74. Total, 210; amount, \$245 70.

LAKE.—Cinnabar, 28; Morgan Valley, 27; Lower Lake, 84; Burn's Valley, 35; Excelsior, 52; Loconomi, 72; Rincon, 56; Uncle Sam, 39; Kelsey Creek, 40; Big Valley, 70; Lakeport, 73; Pleasant Grove, 72; Blue Lake, 32; Upper Lake, 86; Willow Grove, 25. Total, 791; amount, \$925 47.

LASSEN.—Susanville, 111; Richmond, 32; Lake, 41; Milford, 56; Janesville, 36; Susan River, 33; Soldier Bridge, 15. Total, 324; amount, \$379 08.

LOS ANGELES.—Anaheim, 189; Azusa, 103; Ballona, 172; Bog Dale, 52; El Monte, 128; Green Meadows, 234; La Puente, 150; Los Angeles, 1,207; Los Nietos, 135; Maizland, 70; Old Mission, 159; Santa Ana, 246; San Antonio, 79; San Fernando, 72; San Gabriel, 191; San José, 130; San Juan, 143; Silver, 96; Wilmington, 106. Total, 3,662; amount, \$4 284 54.

MARIN.—San Rafael, 108; San Quentin, 20; San Antonio, 73; Chileno Valley, 42; American Valley, 27; Saucilito, 62; Aurora, 60; Olima, 31; Baulinas, 20; Halleck, 39; Dixie, 147; Novatto, 50; Franklin, 39; Tomalis, 53; Ross' Landing, 62; Nicasio, 53; Clark, 15; Garcia, 76; Bay, 57; Estero, 22. Total, 1,056; amount, \$1,235 52.

MARIPOSA.—Mariposa, 176; Hornitos, 208; Coulterville, 128; Bear Valley, 77; Quartzburg, 75; Princeton, 37; Sherlock's, 40; Sebastopol, 45; Cathay's Valley, 88. Total, 874; amount, \$1,022 58.

MENDOCINO.—Anderson, 70; Albion, 19; Big River, 60; Buchanan, 114; Counts, 61; Coyote, 25; Central, 50; Calpella, 27; Cuffee's Cove, 36; Caspar, 54; Fish Rock, 20; Gualala, 15; Gaskill, 28; Indian Creek, 19; Little Lake, 107; Upper Little Lake, 56; Little River, 15; Long Valley, 86; Mill Creek, 39; Manchester, 61; Navarro, 29; Oriental, 36; Potter Valley, 52; Round Valley, 105; Rancheria, 33; Sanel, 83; Redwood, 38; Ukiah, 215; Walker Valley, 16; Union, 58. Total, 1,627; amount, \$1,903 59.

MERCED.—Pioneer, 77; Jefferson, 184; Mariposa, 32; Jackson, 65; Merced Falls, 55. Total, 413; amount, \$483 21.

MONO.—North Antelope, 12; Antelope, 19; Bridgeport, 34; Bishop Creek, 63. Total, 128; amount, \$149 76.

MONTEREY.—Alisal, 94; Carneros, 50; Carmello, 90; Carrolton, 77; Castroville, 84; Lindley, 86; Mountain, 51; Monterey, 396; Natividad, 164; San Felipe, 38; San Antonio, 81; San Juan, 264; Spring, 120; Springfield, 53; Tembledero, 57; San Benito, 71. Total, 1,776; amount, \$2,077 92.

NAPA.—Suscol, 49; Franklin, 20; Carneros, 41; Napa City, 420; Jefferson, 34; Howard, 51; Yount, 31; Buchanan, 83; Liberty, 52; St. Helena, 202; Tucker, 45; Monroe, 53; Pope Valley, 38; Chiles, 48; Cherry Valley, 27; Hot Springs, 47; Redwood, 58; Wooden Valley, 43; Soda Cañon, 36; Mountain, 19; Upper Pope, 43; Capel Valley, 27; Berryessa, 98; Salvador, 39; Putah, 32; Oakville, 49; Chiles Valley, 28. Total, 1,713; amount, \$2,004 21.

NEVADA.—Altamont, 84; Allison Ranch, 142; Birchville, 52; Blue Tent, 21; Chalk Bluff, 82; Clear Creek, 39; Cherokee, 72; Columbia Hill, 69; Forest Springs, 131; French Corral, 89; Grass Valley, 909; Graniteville, 48; Indian Springs, 41; Kentucky Flat, 42; Little York, 65; Lime Kiln, 56; Lake City, 21; Moony Flat, 36; Moore's Flat, 112; Nevada, 592; North San Juan, 178; North Bloomfield, 32; North Star, 101; Oakland, 151; Omega, 38; Pleasant Valley, 49; Quaker Hill, 41; Rough and Ready, 97; Relief Hill, 21; Spencerville, 33; Sweetland, 86; Selby, 36; Truckee, 89; Union Hill, 145; Washington, 61; Willow Valley, 23. Total, 3,884; amount, \$4,544 28.

PLACER.—Auburn, 121; Bath, 59; Cisco, 41; Coon Creek, 40; Christian Valley, 17; Dry Creek, 52; Deadwood, 18; Dutch Flat, 178; Damascas, 13; Forest Hill, 167; Franklin, 61; Fairview, 6; Gold Hill, 32; Gold Rnn, 124; Iowa Hill, 73; Illinois town, 192; Last Chance, 20; Lisbon, 17; Lincoln, 66; Lone Star, 17; Michigan Bluff, 75; Mount Pleasant, 49; Neilsburg, 33; New-castle, 50; Norwich, 46; Ophir, 71; Pleasant Grove, 19; Rattlesnake, 68; Rock Creek, 48; Rocklin, 86; Smithville, 33; Stewart's Flat, 38; Todd's Valley, 58; Union, 15; Wisconsin Hill, 33; Washington, 35; Yankee Jim's, 60; Blue Cañon, 32. Total, 2,168; amount, \$2,536 56.

PLUMAS.—Antelope, 5; Beckworth, 26; Crescent, 29; Genesee, 13; Greenville, 70; LaPorte, 83; Mohawk, 29; Pioneer, 38; Pilot Peak, 32; Plumas, 13; Quincy, 48; Rocky Point, 5; Spanish Peak, 33; Summit, 16; Seneca, 38; Taylorville, 65; Union, 14. Total, 557; amount, \$651 69.

SACRAMENTO.—Ashland, 47; Alabama, 44; American, 43; Buckeye, 33; Brighton, 36; Carson Creek, 31; Centre, 14; Dry Creek, 27; Davis, 22; Enterprise, 66; Elder Creek, 30; Elk Grove, 47; Excelsior, 46; Eagle Point, 4; Franklin, 65; Granite, 188; Grant, 48; Georgiana, 29; Hicksville, 51; Jackson, 59; Kinney, 76; Katesville, 31; Lincoln, 45; Laguna, 32; Live Oak, 105; Michigan Bar, 71; Mokelumne, 21; Natoma, 34; Oak Grove, 38; Onisbo, 31; Prairie, 36; Point Pleasant, 31; Pacific, 41; Pleasant Grove, 99; Richland, 43; Sylvan, 79; San Joaquin, 43; Sutter, 75; Sacramento, 2,630; Union, 68; Viola, 36; Walnut Grove, 19; Washington, 120; White Rock, 47; Wilson, 29; West Union, 51. Total, 4,861; amount, \$5,687 37.

SAN BERNARDINO.—American, 78; City, 284; Chino, 81; Central, 56; Juape, 66; Mount Vernon, 111; Mill, 40; Mission, 103; Riley, 69; San Salvador, 193; Santa Ana, 62; San Timoteo, 50; Temescal, 55; Warm Spring, 115. Total, 1,363; amount, \$1,594 71.

SAN DIEGO.—San Diego, 475; Milquatay, 40. Total, 515; amount, \$602 55.

SAN FRANCISCO.—City and County: Total, 23,386; amount, \$27,361 62.

SAN JOAQUIN.—Athearn, 30; August, 44; Alpine, 30; Burwood, 41; Brunswick, 30; Calaveras, 28; Castle, 57; Chartville, 32; Charity Dale, 29; Central, —; Columbia, 30; Davis, 44; Douglass, 54; Dry Creek, 64; Delphi, 55; Elkhorn, 36; Everett, 46; Enterprise, 32; French Camp, 58; Franklin, 32; Fairview, 31; Greenwood, 43; Grant, 41; Henderson, 39; Harmony Grove, 38; Houston, 54; Linden, 101; Liberty, 88; Live Oak, 34; Lincoln, 20; Lafayette, 35; Lockwood, 72; Moore, 36; Madison, 42; Moulder, 18; Mokelumne, 52; Mount Carmel, 49; McKamy, 51; North, 116; New Hope, —; Pacific, 49; Rigdon, 32; River, 17; South, 82; Stockton, 1,159; Stanislaus, —; Salem, 33; Shady Grove, 35; San Joaquin, 47; Telegraph, 60; Tulare, 57; Turner, 30; Union, 40; Vineyard, 126; Van Allen, 53; Woods, 68; Washington, 34; Weber, 63; Wells, —; Wildwood, 55; Willow, 114; Zinc House, 61. Total, 3,947; amount, \$4,617 99.

SAN LUIS OBISPO.—Mission, 357; Arroyo Grande, 60; Salinas, 72; Excelsior, 41; Morro, 41; Cayucas, 60; Olmsted, 41; Santa Rosa, 52; Hesperian, 25; San Simeon, 84. Total, 833; amount, \$974 61.

SAN MATEO.—San Bruno, 115; San Mateo, 104; Belmont, 28; Redwood City, 238; Searsville, 70; Greensburg, 71; Laguna, 81; Half Moon Bay, 207; Purissima, 48; West Union, 43; Jefferson, 65; Milbrae, 42; Tunis, 55; San Gregorio, 38; Pescadero, 74; Bell's, 94. Total, 1,373; amount, \$1,606 41.

SANTA BARBARA.—San Buenaventura, 499; Montecito, 216; Santa Barbara, 785. Pedregoso, 28; Rafuella, 71. Total, 1,599; amount, \$1,870 80.

SANTA CLARA.—Adams, 62; Alviso, 105; Lincoln, 43; Berryessa, 64; Braly, 65; Burnett, 71; Calaveras, 30; Cambrian, 70; Carneadera, 94; Encinal, 41; Evergreen, 78; Franklin, 77; Gilroy, 159; Guadalupe, 82; Hamilton, 44; Hester, 122; Highland, 25; Hill, 242; Jackson, 65; Jefferson, 59; Laguna, 24; Lexington, 30; Live Oak, 44; Los Gatos, 68; Mayfield, 182; Millikin, 51; Milpitas, 65; Mission Peak, 9; Moreland, 70; Mount Pleasant, 29; Mountain View, 140; New Almaden, 128; Oak Grove, 101; Orchard Street, 101; Pala, 45; Pioneer, 113; Redwood, 82; Rhodes, 37; San Antonio, 48; Santa Clara, 490; San Filipe, 23; San Ysidro, 92; San José, 1,297; Sierra, 30; Silver Creek, 72; Summit, 19; Union, 56; Willow Glen, 85. Total, 5,129; amount, \$6,000 93.

SANTA CRUZ.—Santa Cruz, 580; Pajaro, 450; Oak Grove, 203; Soquel, 177; Bay View, 79; Grant, 84; Happy Valley, 45; San Lorenzo, 48; Aptos, 52; El Jarro, 35; Petroleum, 24; Hazel Brook, 25; Scott's Valley, 37; Union, 79; Mountain, 52; Railroad, 37; San Andreas, 35; Carlton, 91; Roache, 129. Total, 2,257; amount, \$2,640 69.

SHASTA.—Shasta, 173; Roaring River, 16; Millville, 82; Clear Creek, 42; Eagle Creek, 29; Cañon House, 27; French Gulch, 66; Cow Creek, 45; Whiskytown, 37; Cottonwood, 19; Piety Hill, 50; Buckeye, 17; American Ranch, 19; Parkville, 34; Oak Run, 17; Clover Creek, 30; Oak Knoll, 25; Sierra, 48; Texas Springs, 23; Stillwater, 30; Middletown, 29; Pitt River, 26; Fall River, 36. Total, 920; amount, \$1,076 40.

SIERRA.—Downieville, 195; Goodyear's, 55; Forest City, 31; Alleghany, 69; Table Rock, 164; Gibsonville, 52; St. Louis, 41; Union, 63; Eureka, 38; Morristown, 20; Sierraville, 52; Loyalton, 51; Plum Valley, 26; Mount Pleasant, 24; Alpine, 17; Antelope, 12; Washington, 18; Alta, 27; Butte, 17; Rocky Point, 16; Minnesota, 26. Total, 1,014; amount, \$1,186 38.

SISKIYOU.—Butteville, 47; Center, 57; Cottonwood, 51; Deep Creek, 38; Douglas, 23; Eagle Creek, 25; East Fork, 20; Franklin, 39; Greenhorn, 50; Hawkinsville, 41; Humbug, 29; Lincoln, 40; Little Shasta, 71; Mill Creek, 43; Mount Bidwell, 10; Oro Fino, 50; Quartz Valley, 25; Scott Valley, 63; Shasta Valley, 55; Scott River, 50; South Fork, 27; Union, 12; Washington, 51; Willow Creek, 60; Vineland, 18; Yreka, 240. Total, 1,235; amount, \$1,444 95.

SOLANO.—Alamo, 52; American Cañon, 40; Benicia, 359; Binghamton, 56; Bunker Hill, 52; Crystal, 117; Centre, 68; Dover, 50; Denverton, 29; Esmeralda, 50; Egbert, 60; Fairfield, 123; Grant, 64; Green Valley, 111; Gomer, 43; King, 36; Mountain, 20; Maine Prairie, 73; Montezuma, 62; Oak Dale, 23; Owens, 35; Pitts, 65; Pleasant Valley, 20; Putah, 14; Pleasant Hill, 21; Rio Vista, 60; Suisun, 106; Silveyville, 194; Solano, 45; Salem, 38; Tremont, 52; Ulatis, 138; Union, 49; Vallejo, 724. Total, 3,049; amount, \$3,567 33.

SONOMA.—American Valley, 42; Big Valley, 26; Burnside, 37; Bodega, 63; Bloomfield, 95; Burns, 61; Coleman Valley, 43; Canfield, 26; Court House, 412; Cinnabar, 47; Copeland, 25; Cloverdale, 67; Dry Creek, 75; Dunbar, 71; Dunham, 62; East Petaluma, 74; Eagle, 27; Eureka, 42; Fisk's Mill, 57; Green Valley, 46; Guilford, 53; Guillicus, 24; Geyserville, 46; Harvey, 39; Hamilton, 80; Hill, 38; Hearn, 35; Hall, 35; Healdsburg, 289; Iowa, 57; Independence, 51; Knight's Valley, 40; Lakeville, 39; Lake, 31; Lafayette, 58; Liberty, 60; Lone Redwood, 42; Laguna, 75; Lewis, 26; Mark West, 63; Maacama, 34; Miriam, 79; Mountain, 25; Mount Vernon, 34; Manzanita, 61; Mill Creek, 50; Monroe, 39; Oak Grove, 83; Oriental, 33; Occidental, 60; Pacific, 19; Pleasant Hill, 55; Piner, 51; Potter, 102; Payran, 54; Petaluma, 712; Rincon, 70; Redwood, 62; Russian River, 31; Steuben, 31; Stewart's Point, 30; Strawberry, 51; Sonoma, 209; Stony Point, 40; Star, 29; Salt Point, 30; San Antonio, 52; Sotoyome, 57; Scotta, 32; Santa Rosa, 33; Todd's, 43; Tarwater, 23; Wright's, 36; Windsor, 97; Walker, 24; Waugh, 35; Wilson, 42; Washington, 41; Watmaugh, 25; Wallace, 35. Total, 5,228; amount, \$6,116 76.

STANISLAUS.—Adamsville, 127; Bechelore Valley, 46; Branch, 88; Belphasso, 24; Dry Creek, 27; Emory, 103; Empire, 66; Farm Cottage, 32; Grant, 35; Jackson, 71; Jones, 52; Junction, 71; McHenry, 54; Paradise, 32; Tuolumne, 52; Washington, 79; White Oak, 19; Rowe, 18. Total, 996; amount, \$1,165 32.

SUTTER.—Auburn, 72; Barry, 24; Bear River, 36; Brown's, 50; Buttesylvania, 17; Brittan, 43; Central, 24; Columbia, 16; Fairview, 40; Franklin, 31; Gaither, 48; Grant, 58; Illinois, 45; Jefferson, 26; Lee, 30; Lincoln, 38; Live Oak, 39; Meridian, 22; Nicolaus, 38; North Butte, 38; Rome, 43; Salem, 27; Slough, 15; Sutter, 29; Union, 50; Vernon, 55; Washington, 49; West Butte, 47; Winship, 39; Yuba, 51. Total, 1,140; amount, \$1,333 80.

TEHAMA.—Red Bluff, 268; Cottonwood, 45; Sierra, 56; Reed's Creek, 26. Toomes, 23; Red Bank, 16; Lassen's, 27; Paskenta, 40; Oat Creek, 25; Stony Creek, 32; Antelope, 65; Tehama, 70. Total, 693; amount, \$810 81.

TRINITY.—Weaverville, 163; North Fork, 36; Lewiston, 41; Bates, 12; Douglas City, 58; Trinity Centre, 20; Hay Fork, 38; Junction City, 49; Cox's Bar, 16. Total, 433; amount, \$506, 61.

TULARE.—Cottonwood, 79; Deep Creek, 101; Elbow, 37; Elbow Creek, 44; Fitzgerald, 41; Kaiweah, 62; King's River, 35; Outside Creek, 64; Packwood, 32; Tule River, 302; Union, 52; Venice, 26; Visalia, 215; Willow, 32. Total, 1,122; amount, \$1,312 74.

TUOLUMNE.—Sonora, 443; Columbia, 393; Shaw's Flat, 83; Springfield, 109; Tuttle town, 96; Jamestown, 130; Poverty Hill, 84; Curtis Creek, 71; Summerville, 52; Confidence, 33; Montezuma, 52; Chinese Camp, 87; Don Pedro's Bar, 36; Green Springs, 61; Big Oak Flat, 113. Total, 1,848; amount, \$2,162 16.

YOLO.—Woodland, 270; Buchanan, 39; Washington, 86; Cottonwood, 62; Prairie, 63; Cache Creek, 33; Grafton, 139; Franklin, 24; Putah, 57; Buckeye, 43; Cacheville, 71; Grand Island, 11; Merritt, 51; Fillmore, 68; Fremont, 31; Plainfield, 85; Willow Slough, 29; Monument, 20; Pine Grove, 39; Cañon, 57; Union, 39; Woodland Prairie, 14; Richland, 6; Sacramento River, 32; Monitor, 42; Eureka, 42; Gordon, 64; Capay, 38; Fairfield, 21; Enterprise, 35; Liberty, 30; Pleasant Prairie, 27; Vernon, 16; Fairview, 42; Spring Lake, 34. Total, 1,760; amount, \$2,059 20.

YUBA.—Bear River, 45; Brophy, 40; Brown's Valley, 95; Buckeye, 29; Cordua, 36; Dobbin's Ranch, 36; Elizabeth, 31; Garden Valley, 24; Greenville, 21; Hansonville, 29; Honcut, 34; Indiana, 56; Linda, 50; Long Bar, 20; Marysville, 776; McDonald's, 18; New York, 72; Oregon House, 59; Park, 41; Peoria, 63. Plumas, 73; Rose's Bar, 122; Slate Range, 137; Spring Valley, 42; Strawberry Valley, 28; Timbucto, 104; Virginia, 36; Yuba, 33. Total, 2,150; amount, \$2,515 50.

O. P. FITZGERALD,

Supt. Public Instruction.

SCHOOL DIRECTORY OF SAN FRANCISCO.

BOARD OF EDUCATION—1869.

PRESIDENT.....H. A. COBB.

MEMBERS :

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E. H. COE, 22 City Hall. Dwl. E. side Calhoun street, bet. Union and Green.

SECOND DISTRICT.

THOS. H. HOLT.....No. 3 City Hall. Dwl. 1803 Stockton street.

THIRD DISTRICT.

WM. SHEW.....417 Montgomery street.

FOURTH DISTRICT.

H. A. COBB.....327 Montgomery street. Dwl. 1413 Powell street.

FIFTH DISTRICT.

J. D. B. STILLMAN, M. D. 17 Post street.

SIXTH DISTRICT.

WM. HENRY KNIGHT 609 Montgomery street. Dwl. 1217 Clay street.

SEVENTH DISTRICT.

J. F. MEAGHER 418 Montgomery street. Dwl. 58 Minna street.

EIGHTH DISTRICT.

EDGAR BRIGGS, S. E. cor. Sansome and Sacramento sts. Dwl. 128 Turk street.

NINTH DISTRICT.

R. H. SINTON 509 California street. Dwl. 36 South Park.

TENTH DISTRICT.

A. K. HAWKINS 645 Market street. Dwl. 829 Howard street.

ELEVENTH DISTRICT.

H. F. WILLIAMS, 407 California street. Dwl. Seventeenth av. near Railroad av.

TWELFTH DISTRICT.

J. M. BURNETT, 57 Exchange Building, cor. Montgomery and Washington sts.
Dwl. N. side Page, between Laguna and Buchanan streets.

JAMES DENMAN, *Superintendent of Public Schools*. No. 22 City Hall.

GEO. BEANSTON, *Secretary Board of Education*, No. 22 City Hall. Dwl. W. side Hollis street, between O'Farrell & Ellis.

RICHARD OTT, *Clerk Board of Education*, No. 22 City Hall. Dwl. No. 218 Stockton street.

JAMES DUFFY, *Messenger*, No. 22 City Hall. Dwl. W. side Buchanan street, between O'Farrell and Ellis.

 STANDING COMMITTEES.

ON NOMINATION OF TEACHERS—Directors Meagher, Williams, Knight, President and Superintendent.

ON RULES AND REGULATIONS—Directors Shew, Hawkins and Burnett.

ON CLASSIFICATION AND COURSE OF INSTRUCTION—Directors Knight, Burnett, Sinton and Superintendent.

ON HIGH AND NORMAL SCHOOLS—Directors Stillman, Hawkins and Burnett.

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ON TEACHERS' INSTITUTE—Directors Knight, Hawkins and Williams.

ON PRINTING—Directors Coe, Knight and Williams.

ON JANITORS—Directors Sinton, Shew and Coe.

SCHOOL DIRECTORY.

BOYS' HIGH SCHOOL.

Location—Powell street, near Clay.

Theo. Bradley, 34 Tehama.	A. L. Mann, Fruit Vale.
J. M. Sibley, 514 Dupont.	Adolph Herbst, Stockton, near Cal.
A. T. Winn, 114 Mason.	Mrs. C. L. Atwood, 1806 Mason.

GIRLS' HIGH SCHOOL.

Location—Southeast corner Stockton and Bush streets.

Ellis H. Holmes, 16 Prospect Place.	Miss S. A. Barr, 1011 Bush.
Mrs. C. R. Beals, 923 Powell.	Mad. V. G. Brissac, 1015 Pine.
	Miss E. A. Cleveland, Oakland.

CITY TRAINING SCHOOL.

Location—Sutter Street Synagogue.

Mrs. M. E. DuBois, 609 Sutter.	Miss Annie B. Earle, 1119 Sutter.
Miss Annie L. Gray, 725 Bush.	“ Susie H. Earle, 674 Harrison.

LINCOLN GRAMMAR SCHOOL.

Location—East side Fifth street, near Market.

Bernhard Marks, cor. Union & Steiner.	Miss Carrie L. Smith, 19 John.
L. W. Reed, 17 Rausch.	“ M. T. Kimball, Cal. and Mason.
W. A. Robertson, 710 Washington.	“ Grace Chalmers, 1407 Jackson.
Mrs. M. J. Sanky, 612 Shotwell.	“ E. A. Shaw, 26½ Kearny.
“ L. C. James, 329 O'Farrell.	“ Mary Guinness, 521 Folsom.
“ M. W. Kincaid, 421 Sixth.	“ J. A. Forbes, 127 Kearny.
“ B. F. Moore, 127 Kearny.	“ M. V. M. Whigham, 492 Howard.
“ E. F. Pearson, 342 Minna.	Mrs. F. M. Pugh, 555 Stevenson.
Miss M. E. Harrington, 745 Market.	“ M. L. Foster, 310 Clementina.
“ S. A. Field, 323 Sutter.	Miss M. J. Pascoe, 7 Vernon.
	Miss L. Swain, 26½ Kearny.

DENMAN SCHOOL.

Location—Northwest corner Taylor and Bush streets.

John Swett, 1419 Taylor.	Miss Mary Jittle, 320 Ritch.
Mrs. E. M. Baumgartner, 323 Sutter.	“ Lillie L. Gummer, 1107 Stockton.
Miss C. M. Pattee, 804 Bush.	“ Almira T. Flint, 337 Jessie.
“ M. A. Doud, 1710 Clay.	“ Clara C. Bowen, 122 Tyler.
“ Jessie Smith, cor. Lomb. & Dup.	“ Eliza B. Barnes, 933 Howard.
“ A. T. Kenney, 526 Pine.	“ Lottie McKean, 1006 Bush.
Mrs. E. P. Bradley, 34 Tehama.	“ R. B. Childs, 325 Sixth.
	Miss S. A. Lillie, 528 Stevenson.

RINCON GRAMMAR SCHOOL.

Location—Vassar Place, leading from Harrison street, between Second and Third.

Ebenezer Knowlton, 4 Center Block, Sixteenth street, near Folsom.	Miss Lizzie B. Easton, 133 Fifth.
Miss Helen M. Thompson, 16 Perry.	“ Anna M. Dore, 418 Fremont.
“ Mary E. Stowell, 656 Folsom.	“ Lizzie G. Johnston, 246 Jessie.
“ D. S. Prescott, 607 Pine.	“ Sadie Davis, SE. cor. Har. & Park.
“ Margaret Wade, 1407 Wash'ton.	“ Carrie D. Trask, 704 Howard.
“ Mary A. E. Phillips, 26½ Kearny.	“ Augusta C. Robertson, 524 Fol.
	“ Clara Buckman, 309 Fremont.

BROADWAY GRAMMAR SCHOOL.

Location—North side Broadway, between Powell and Mason.

Noah F. Flood, 1016 Washington.	Mrs. Belle Hurlbut, 1419 Taylor.
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- Miss Maggie McKenzie, 136 Kearny. Miss S. A. Kelly, 326 Jessie.
 Mrs. L. A. K. Clappe, 516 Taylor. " Ella J. Morse, NE. cor. Sansome
 and Filbert streets.
 Miss E. M. Tibbey, 527 Green. " Mary A. Haswell, 524 Greenwich.
 " Phoebe Palmer, 505 Powell. " Mary A. Solomon, 1805 Stockton.
 " Mary A. Ward, 1416 Powell. Miss Susan B. Cook, 108 Stockton.

SOUTH COSMOPOLITAN GRAMMAR SCHOOL.

Location—North side Post, between Dupont and Stockton.

- Henry N. Bolander, 349 Jessie. Mrs. Emily Foster, 18 Taylor.
 Miss L. T. Fowler, Sixteenth, nr Fol. Arnold Dulon, 521 Green.
 Mrs. L. Dejarlais, 1902 Stockton. Miss Jennie Mitchell, Taylor and Eddy.
 " A. A. Hamill, 1007 Market. Dr. James Wiedemann, 1107 Folsom.
 Miss F. M. Sherman, 233 Eighth. Miss Agathe Buenan, 320 Clementina.
 " E. L. Gunn, 1407 Jones. " Maggie Howard, 1109 Pine.

UNION GRAMMAR SCHOOL.

Location—North side Union, between Montgomery and Kearny streets.

- Philip Prior, 218 Stockton. Miss Annie Hucks, 708 Lombard.
 Miss Agnes Chalmers, Jack'n, nr Hyde. " Nellie Baldwin, 1305 Stockton.
 John Fox, cor. Hinkley and Kearny. " Lizzie White, 1807 Stockton.
 Miss Flora Smith, cor. Mark't & Mont. " Sallie Fox, 809 Mission.
 " Sarah Mayers, 429 Union. " Ellen Grant, How. bet. 13th & 14th.

WASHINGTON GRAMMAR SCHOOL.

Location—Southwest corner Mason and Washington streets.

- L. D. Allen, NE. cor. Pine & Laguna. Miss Susie Carey, Mission.
 Dr. J. Phelps, 38 Stanley Place. " Carrie Chase, 110 Turk.
 Mrs. L. G. Deetkin, 254 Tehama. Mrs. Josephine Lloyd, 1522 Pacific.
 Miss Jean Parker, 926 Washington. Miss Isabella Whitney, 1015 Clay.
 " S. A. Jessup, 114 Mason. " Kate Casey.
 Miss Carrie Barlow, 909 Clay.

SPRING VALLEY GRAMMAR SCHOOL.

Location—South side Broadway, between Larkin and Polk streets.

- Prof. W. J. G. Williams, Virginia Block, Stockton street. Miss A. P. Fink, Greenwich, between
 Laguna and Octavia streets.
 Miss Carrie P. Field, 323 Sutter. " A. E. Stevens, 1505 California.
 Joseph O'Conner, 324 Tehama. " E. Goldsmith, 415 Jones.
 Miss Mary Murphy, 1306 Taylor. " Frances Simon, 255 Stevenson.
 Miss Alva C. Gregg, Polk, between Broadway and Vallejo streets.

MISSION GRAMMAR SCHOOL.

Location—West side Mission, between Fifteenth and Sixteenth streets.

- E. D. Humphrey, cor. Oak & Laguna. Miss Jennie Greer, 17th, nr Guerrero.
 J. C. Pelton, cor. Polk and Pine. " Mary Smith, 325 Lombard.
 Mrs. Fannie Reynolds, 16th street, near Folsom. " Anita Ciprico, Howard st., bet.
 11th and 12th.
 Mrs. E. H. B. Varney, First Av., bet. 15th and 16th. Mrs. Mary Humphrey, corner Oak and
 Laguna.
 Miss Maria O'Connor, 17th, nr Dolores. Mrs. Mary C. Caldwell, 2d Av., n'r 16th.
 " A. A. Rowe, Howard and 20th. Miss Katie McFadden, cor. Polk & Eddy.
 Miss Annie E. Dowling, cor. Broderick and McAllister streets.

SHOTWELL STREET GRAMMAR SCHOOL.

Location—East side Shotwell, between Twenty-Second and Twenty-Third.

- Silas A. White, N. side Treat Av., between 21st and 22d streets. Miss Mary Little, 1143 Mission st.,
 between 7th and 8th.

- M. M. Scott, Capp st., bet. 21st & 22d. Miss Annie H. Giles, W. side Howard
 Miss Annie A. Hill, E. side Fillmore bet. 18th and 19th streets.
 street, bet. Hayes and Franklin. " Rebecca P. Paul.
 " Mary E. Bennett, cor. Folsom " Hattie L. Wooll, 1312 California
 and 16th streets. st., bet. Leavenworth and Hyde.
 " Isabel A. Wheaton, 48 Tehama " Bessie Hallowell, 931 Howard.
 street, between 1st and 2d. Mrs. Stella M. Whittemore, corner
 Mrs. Ellen M. Carlise, 1412 Pine st., Mission and 22d.
 bet. Larkin and Polk.

NORTH COSMOPOLITAN SCHOOL.

Location—North side Filbert, between Jones and Taylor streets.

- Miss Kate Kennedy, 1213 Clay. Madame Bertha Chapius, 2012 Taylor.
 " Fannie Mitchell, 1009 Powell. Miss Mary Humphreys, 803 Leaven'th.
 " Julia Grady, 715 Ellis. " Bette Brockmann, 419 Tehama.
 " Rose Levison, 813 Hyde. Mrs. Abraham Solomon, 557 Natoma.
 " Amelia Wells, 210 Francisco. " U. Rendsburg, 910 Post.
 " Amy Campbell, 1220 Jackson. Miss Emily Anderfuren, 755 Mission.

GREENWICH STREET COSMOPOLITAN SCHOOL.

Location—Greenwich, between Taylor and Jones streets.

- Mrs. Wm. R. Duane, 1511 Stockton. Miss M. P. Carpenter, 1419 Taylor.
 Miss Naomi Hoy, 1114 Leavenworth. " L. Erichson, 611 Union,
 Miss Kate M, Donovan, 1204 Powell.

TENTH STREET SCHOOL.

Location—West side Tenth, between Folsom and Harrison streets.

- W. J. Gorman, N.W. cor. Howard and Miss M. A. Hassett, 726 Clementina.
 3d streets. " Cornelia Swain, corner 21st and
 Miss Marion Sears, 26½ Kearny. Guerrero streets.
 " Kate A. Galvin, 114 Hayes. " N. Herne, cor. Larkin and McAl-
 " F. M. Byrnes, 805 Sixth. lister streets.
 Mrs. M. Dyer, 24½ Fourth. Mrs. M. Lowe, 660 Bryant.

TEHAMA PRIMARY SCHOOL.

Location—South side Tehama, near First street.

- Mrs. E. A. Wood, 44 Third. Miss E. White, 419 Fremont.
 " S. N. Joseph, 1521 Bush. " A. S. Ross, 660 Howard.
 Miss H. A. Lyons, 14 Perry. " S. H. Whitney, 26½ Kearny.
 " M. F. Soulé, 119 Stockton. " E. Gallagher, 459 Bryant.
 " F. A. Nichols, 613 Third. " Gertrude Soule, 762 Howard.
 " M. F. Smith, 666 Harrison. " Maggie S. Hall, 4 Powell.
 " Susie Mowry, 329 Pine. " Sallie J. Hall, 4 Powell.
 " H. A. Grant, 17 Rincon Place. " F. T. Clapp, 513 Folsom.
 Miss Julia M. Gelston, 114 Mason.

LINCOLN PRIMARY SCHOOL.

Location—S. E. corner of Market and Fifth streets.

- Miss Kate Sullivan, 44 Third. Miss Mary A. Salisbury, 917 Howard.
 " Carrie L. Hunt, 1008 Clay. " Lydia A. Clegg, 425 Bryant.
 " Nellie A. Littlefield, 1018 Larkin. " Miss G. A. Garrison, 411 Brannan.
 " Christina McLean, 1117 Howard. Mrs. Mary H. Woodworth, 44 Third.
 " Bessie Molloy, 44 Third. " Fannie Holmes, Colton's, Third.
 " Maggie V. Jordan, 347 Fourth. " Kate McLaughlin, 423 Post.
 Mrs. Laura T. Hopkins, 8 Rousch.

FOURTH STREET PRIMARY SCHOOL.

Location—N. E. corner of Fourth and Clara streets.

- Mrs. L. A. Morgan, 331 Geary. Miss Julia B. Brown, 809 Mission.

- Miss M. Stincen, 1025 Clay. Miss C. Comstock, 807 Mission.
 " E. McKie, 725 Harrison. " Hattie Estabrook, 236 Third.
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 Miss Elise Siegemann, 423 Ellis. " C. Dorsch, 1706 Polk.

MASON STREET COSMOPOLITAN PRIMARY.

Location—East side Mason, between Post and Geary streets.

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 Mrs. M. Dupuy, 730 Vallejo. Miss F. Teuschner, 228 Bush.

GEARY STREET COSMOPOLITAN PRIMARY.

Location—South side Geary, between Stockton and Powell streets.

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 McAllister streets. St. Mary's College.
 Miss A. Goldstein, 467 Clementina, near Sixth.

POWELL STREET PRIMARY SCHOOL.

Location—West side Powell street, between Washington and Jackson.

- Miss Carrie V. Benjamin, 1107 Stock'n. Miss Margery C. Robertson, 2 Chelsea
 " Lulu W. Burrell, 329 O'Farrell. Place.
 " Eliza M. Dames, 55 South Park. Mrs. E. S. Forrester, 719 Market.
 " Sarah E. Thurston, 999 Clay. Miss Mary E. Tucker, 218 Eddy.
 Mrs. Helen V. Shipley, 1309 Mason.

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Location—Mission street, between Fifth and Sixth.

- Miss A. M. Manning, 44 Third. Miss M. A. Lawless, 327 Fifth.
 " Annie J. Hall, 4 Powell. " Ellen Hodges, 109 Fifth.

UNION PRIMARY SCHOOL.

Location—Northwest corner Filbert and Kearny streets.

- Mrs. A. Griffith, 824 Lombard. Miss Maggie Watson, 24 Scott.
 Miss E. Overend, 8 Calhoun. " H. Featherly, 1011 Pacific.
 " L. Solomon, 1805 Stockton. " E. Capprise, 516 Greenwich.
 " A. Stincen, 1025 Clay. " E. Younger, 316 Green.
 Miss E. McEwen, 111 Geary.

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Location—Southwest corner Pine and Larkin streets.

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 " Fannie L. Soule, Chestnut, bet. " E. F. Hassett, 726 Clementina. Leavenworth and Hyde. " Mary E. Perkins, 218 Eddy.
 " Sallie C. Johnson, 318 Seventh, " M. A. Brady, 423 Minna. bet. Folsom and Harrison. " A. A. Hazen, 964 Mission.
 Miss M. A. Lloyd, 605 Bush, between Stockton and Powell.

SPRING VALLEY PRIMARY SCHOOL.

Location—South side Union street, between Franklin and Gough.

- Miss J. M. A. Hurley, N.E. cor. Gough and Pacific streets. Miss Mabel F. Phelps, 1010 Larkin.
 Miss Mary J. E. Kennedy, corner Polk and California. " Marian O. Stokum, 110 Stockton.

HAYES VALLEY PRIMARY.

Location—North side Grove street, between Larkin and Polk.

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 " F. A. Stowell, 656 Folsom. " H. P. Burr, 17 Perry.
 Miss Mary Williams, corner Hayes and Buchanan streets.

BRYANT STREET PRIMARY.

Location—North side Bryant, between Third and Fourth.

- Miss Jennie Smith, 325 Lombard. Miss Julia A. Doran, corner Russ and Natoma streets.
 " Clara G. Dolliver, 439 Fifth. " Ida E. Dickens, 7 Vassar Place.
 Mrs. T. M. Sullivan, Brooklyn Hotel. Miss Isabel Gallagher, 459 Bryant.

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- Miss A. M. Murphy, 127 Kearny. Miss M. J. Brumley, 1619 Sacramento.

POTRERO SCHOOL.

Location—Northeast corner Kentucky and Napa streets.

- Miss A. S. Jewett, 372 Brannan. Miss Kate McColgan, 913 Broadway.

PINE STREET SCHOOL.

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John A. Moore.

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Miss Nellie O'Loughlan.

Location—Fairmount Tract.

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 OUR BOOK TABLE.

A MANUAL OF ELEMENTARY CHEMISTRY, Theoretical and Practical: By GEORGE FOWNES, F.R.S., late Professor of Practical Chemistry in University College, London. From the Tenth Revised and Corrected English Edition. Edited by ROBERT BRIDGES, M.D., Professor of Chemistry in the Philadelphia College of Pharmacy. Philadelphia: Henry C. Lea: 1869.

This work is more extensive than the usual text books on the subject. It is likewise more valuable—giving altogether an adequate, clear, and accurate outline of the present state of chemical science. In weights and measures the French decimal system is used. In nomenclature some changes have been made, which were much needed. For sale by A. Roman & Co.

PRACTICAL COMPOSITION, with Numerous Models and Exercises: By Mrs. MARY J. HARPER, Packer Collegiate Institute, Brooklyn, New York. New York: Charles Scribner & Co.: 1869.

This work is simple and practical. It carries the student through a respectable course of training in the art of composition, gives him incidental information, and does not go beyond his comprehension. It is defective as regards invention, a most important step in acquiring the art of composing. A. Roman & Co., San Francisco.

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ELEMENTS OF ASTRONOMY—Designed for Academies and High Schools. By ELIAS LOOMIS, LL.D., Professor of Natural Philosophy and Astronomy in Yale College, and Author of a "Course of Mathematics." New York: Harper & Brothers, Publishers: 1869.

A good elementary text-book in geometry—lucid in arrangement, and accurate in statements.

OUTLINES OF COMPOSITION—Designed to Simplify and Develop the Principles of the Art, by Means of Exercises in the Preparation of Essays, Debates, Lectures, and Orations. For the use of Schools, Colleges, and Private Students. By H. J. ZANDER and T. E. HOWARD, A.M. Boston: Published by Robert S. Davis & Co.: 1869.

A very intensely practical little book, because it shows precisely *how things must be done*.

RHETORIC—A Text-Book, designed for use in Schools and Colleges, and for Private Study. By Rev. E. O. HAVENS, D.D., LL.D., President of the University of Michigan. New York: Harper & Brothers, Publishers, Franklin Square: 1869.

The subject of rhetoric is here presented under five general divisions: Part I, *Words and the Materials of Expression*; Part II, *Figures of Speech and Thought*; Part III, *Composition and Style*; Part IV, *Invention*; Part V, *Elocution*. The book is suggestive—not exhaustive. Its author says it is the growth of the class-room, rather than the result of a purpose to make a book; and doubtless it was supplemented therein by illustration and application. Valuable as it is to the general reader, it can be made of much service to classes, by the competent and ingenious teacher. A. Roman & Co., San Francisco.

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Normal Training—Russell's.

Geometry—Davies' Legendre—five books.

English Literature—Shaw's.

Book-Keeping—Payson & Dunton's Double Entry.

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REGULATIONS OF THE STATE NORMAL SCHOOL.

Adopted by the Board of Normal School Trustees, March 28, 1868.

1. All pupils, on entering the School, are to sign the following declaration of intention:

' We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State.'

Male candidates for admission must be at least eighteen years of age; and female applicants at least fifteen years of age; and all must possess a good degree of physical health and vigor.

2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

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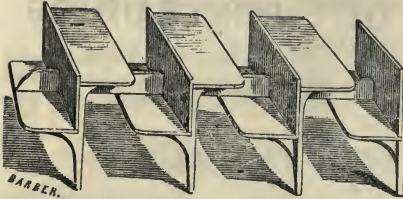
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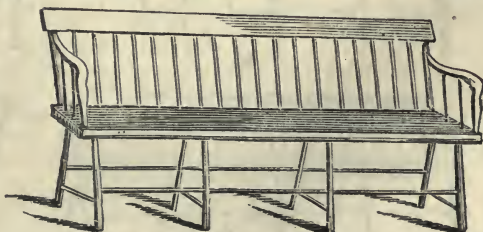
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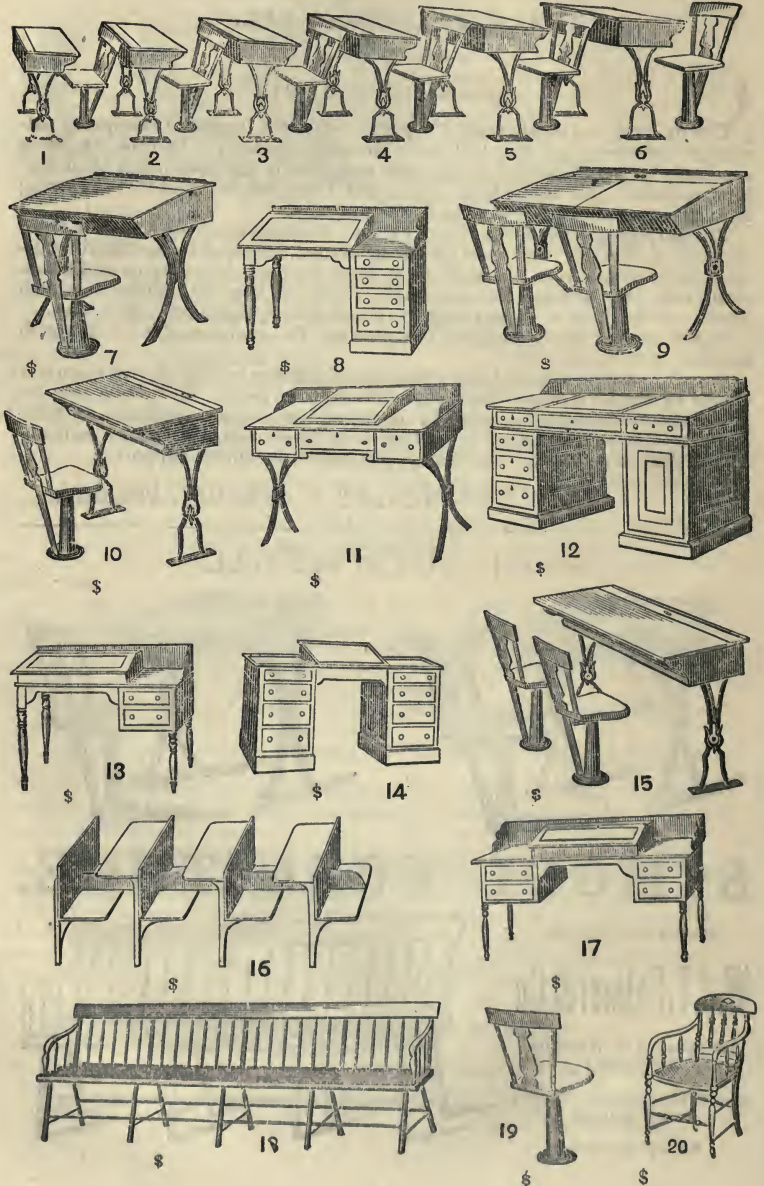
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Vol. VII.]

[No. 4.

THE

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THE

CALIFORNIA TEACHER.

OCTOBER, 1869.

Vol. VII.

SAN FRANCISCO.

No. 4.

SKETCH OF THE LIFE OF THOMAS SHERWIN.

PREPARED BY IRA G. HOITT.

THE telegraph of July 24th, announces the sudden death, from heart disease, of THOMAS SHERWIN, who has been connected with the English High School in Boston, for forty-one consecutive years—ten years as sub-master, and *thirty-one* years as head master. It is seldom that any man fills one public position in America for so many years, with constantly increasing reputation and constantly increasing merit. Mr. Sherwin has been connected with that school ever since its organization, with the exception of the first eight years of its existence; and the greater part of the large number of its graduates, who are now scattered all over the world, have been his personal pupils; and probably there is not one of them who will not be pleased to read a brief sketch of his life, and learn more of his early efforts to achieve a standing among men.

Thomas Sherwin was born in Westmoreland, New Hampshire, March 26th, 1799. At the age of seven years, his mother died, and he was placed in the family of a respectable physician in the town of Temple, where he remained for seven years, receiving only such educational advantages as were furnished by "the district school as it was." At the age of fourteen, he felt that it was time to look around for some permanent occupation. He remained under the immediate charge of his father, and attended the academy in New Ipswich, N. H., for a few months, when the work of the head gave place to the work of the hands, and he was apprenticed to a clothier's trade, in Groton, Mass. The eight hour system had not been heard of then, and it was necessary for him to make long days, so that he had few leisure hours;

but those were well improved. His indenture called for eight weeks' schooling each winter, and he exacted every hour named in the bond.

Three of his teachers saw in the boy the elements of a superior man, and gave him encouragement, and awakened in him a desire for a collegiate education. He learned the Latin grammar at the dressing machine, as Burritt learned the Greek grammar at the forge. He always loved and respected manual labor, but he at length came to feel that the handicraft chosen in his boyhood was not to be his permanent vocation. As soon, therefore, as his apprenticeship was ended, after a service of nearly seven years, he entered upon another work, which was the great work of his life. He was then near his majority, and after spending a year and a half in close application in teaching district schools in Massachusetts, and attending the academies in New Ipswich and Groton, he entered Harvard College in 1821, and graduated among the first scholars of his class, in 1825. He was wholly dependent upon his own exertions, and found it necessary to teach a winter school each year of his college course. This kept him in training for the profession in which he afterwards became distinguished. Having taught the academy at Lexington for a year, he received a gratifying testimonial from the government of his college, in an invitation to take the tutorship in mathematics, which he accepted, and discharged the duties most acceptably for one year, when he resigned, and commenced the business of civil engineering. He undertook the first survey of the Providence Railroad, in connection with James Haywood, and met with success, which gave him promise of rapid advancement to eminence in the profession; but in a few months a severe illness, brought on by exposures and hardships in the business, compelled him to relinquish it.

In the highest and best sense of the word, his life had been a success. He had done well everything which he had undertaken. Fidelity to duty was his guiding principle. He could not be idle, though anticipating but a short life, and he resolved to devote the portion of his life which might be spared to him, to the business of teaching. With this object in view, he opened a private school in Boston, but little did he dream when commencing that school, with only one pupil, that he was entering upon a career in which he was destined to furnish the noblest example of his day. Scarcely a year had passed in this private academy, which soon became remunerative, when he was solicited to take the post of sub-master in the English High School of Boston, which was then under the mastership of Mr. Mills, a teacher of great accomplishments, who had been his teacher in childhood, and subsequently his tutor in college.

He accepted the place, and entered upon his duties in 1828. This was a fortunate apprenticeship for him, as each of the others had been. This place he filled for ten years, with dis-

tinguished ability, and on the resignation of the Principal, in 1838, Mr. Sherwin was elected to that position by a unanimous vote, and he held it up to the time of his death, with constantly increasing reputation, influence and merit. His official title was *master*, and in this case it had a meaning. He *was* a *master*, not in the sense of tyrant or despot, nor merely in that of chief or head of an institution; but he was a master in the sense of one eminently skilled in his profession—a *master* of his business. Let the young and aspiring teacher remember that this true master *served up* to his mastership. The Boston English High School being free to all residents of the city, is emphatically the People's College; and the training imparted there in all the branches taught, is probably quite equal to that afforded by any of our colleges. Mr. Sherwin devoted more than half of his whole life to that institution. His fitness for the place drew him into it, and from the beginning, his influence and his reputation steadily rose together. His extreme modesty claimed no credit. He was content to do his duty, caring not for that fame which is sought, but only for that which follows. Such a man is rarely appreciated in his own day, and his life is a study which will richly repay any one, especially the teacher.

In his discipline he was paternal, yet firm. He placed the development of character above mere scholarship, and yet demanded high scholarship; and in both respects he furnished, in himself, a model worthy of imitation; neglecting no essential branches, he pushed none into undue prominence, and while he imparted knowledge from his own copious storehouse of learning, he so imparted it as to stimulate the desire for more, and lead his pupils into the path of self-culture. He conducted the affairs of his school with such justice, such kindness, and such courtesy, as to win the affection of all his pupils and co-laborers.

These, in brief and general terms, are some of the characteristics by which he at length rose to eminence, and came to merit the title of "The Representative American Public School Teacher."

He was fully convinced of the superior utility of a few branches thoroughly mastered, over an extended course superficially studied, and in his practice he acted in the spirit of the maxim, "*multum non multa.*" He aimed at thoroughness and depth of culture, rather than an extensive show of top dressing. Tillinghast, referring to the thoroughness of teaching in the English High School, said West Point was the *best* in the country to get an education, and the High School in Boston the next.

The results of Mr. Sherwin's system fully justify its wisdom, for the High School pupils who have completed the course are among the brightest ornaments of the city and country, and there are many of them who now "*rise up and call him blessed.*" Mr. Sherwin rendered much valuable service to the cause of education and science, besides his direct labors as a teacher. He

was one of the originators of the American Institute of Instruction in 1830, and for several years an officer of it.

He was one of the foremost in the work or organization of the Massachusetts State Teachers' Association, in 1845, and one of the original editors of the *Massachusetts Teacher*, established in 1847, and the first project of the kind attempted in this country. He wrote two original works on Mathematics—his "Elements of Algebra," and his "Common School Algebra," both excellent works of their class; and in connection with Mr. Mills, he prepared a valuable volume of mathematical tables. He also delivered lectures, and prepared valuable tables on the following and other subjects: "Teaching Mathematics," "Example in Teaching," "Relative Advantages of Scientific and Classical Studies," "Consolations in Teaching," and "How shall the Teacher keep himself Young." Those who knew him, can now see plainly the significance of the last named paper, since its author long since proved that he knew how to keep himself young. His sympathies with the young were fresh to the last. There was nothing antiquated about him. He exhibited the remarkable phenomenon of a teacher at the age of seventy, who combined with the wisdom and experience of age, the buoyancy and vigor of youth,—like the tropical fruit tree, bearing upon its branches at the same time, the ripened fruit and the opening blossoms. Thus he labored manfully, making the most and the best of everything, and in his whole career he served and adorned the cause of the Public School Teacher, of which class, more than any other, at the time of his death, he was justly regarded as the representative head.

The above is nothing more than a sketch of his life as a teacher, but it is but just and proper to say, in conclusion, that in all the other relations which he sustained, as son, husband, brother, father, citizen and friend, his life was equally praiseworthy.

MEDALS AND PRIZES.

ANYTHING is good, I suppose, that will keep people in the right way. Some natures have such a perverse tendency to evil that inducements of some sort are really needed to keep them safe. Without them our whole social and political system would be ruined. Therefore the custom of presenting children with prizes and medals *may be* in itself a good thing; but as the custom is usually carried out in our schools it is an evil instead of a benefit. Children should be rewarded according to their individual effort and improvement; and if it is impracticable to reward so many with special gifts, it is even a more doubtful practice to offer one medal for the many to win, because the test of improvement is then gone. And where there is a question of justice in the matter, there can be no benefit derived. I simply make the statement that I believe it to be impossible for one sin-

gle child to stand out so far above the class in merit, unless he is naturally a model pupil, and rewards should not be offered to such. It is only to the naturally dull, stupid, lazy, or vicious, that they should be offered, and such seldom get "the medal" if they try. It is always one who does not need to make an effort. In this way it becomes a source of envy, hatred and jealousy on the part of pupils and favoritism on the part of teachers.

The medal system has been thoroughly tested in all of our large cities, and is now being abolished. Even the famous "Franklin Medal" of Boston, which has held sway for nearly a century, I think is abolished, as productive of more harm than good. In no place but San Francisco is there allowed a medal fund for a single school. All such medals are provided from a common fund, open alike to all the schools of the city. It is left for this city to sanction an act of partisan favoritism which is being felt by all other schools here.

Again, the injudicious and lavish offering of rewards to pupils is giving rise to a very pernicious condition of mind among children, which thoughtful people must observe. You cannot ask a child to do you a favor, however slight, without hinting that you will reward him for it in some way. You instinctively offer him this return of price, because you feel if you do not you will have thrown in your face a broad "I shan't!" or "I won't!"

Many parents cannot induce their children to go to school in the morning without offering some payment, and at evening no lessons will be learned until the accustomed promise is exacted. Now this may all be in accordance with the spirit of the age; but when we bring down to the level of the dollar and cent all personal politeness, accommodation, generosity and duty, we are striking a level that will yet make this nation but "tinkling brass." Nearly all of the discipline in our public schools and homes is on the principle of barter! My son, *be good*, and I will give you a "new gun;" or, My daughter, *be good*, and you may go to the theater with us. The absolute right to recognize the proper authority of parents is nowhere taught to-day. The idea is antiquated. Parents and teachers are notified by money-making newspapers that they must measure out their line of action by the sharp eyes of the children. What a magnificent mistake all Nature and History have thus far made in placing the parent and teacher above the child! What a humiliation for these two venerable old dames!

The object of our public schools is to reach down and purify the heart-life of our poor masses; to make steady and reliable citizens of the boys and girls growing up among bad influences at home and on the street; but, as I have said, the medal system seldom affects them; it may honestly be supposed to be an evil which ought to be abolished. The plan cannot be carried out without a large outlay of money. This offers a good chance for a

man to get his name before the public, and serves a purpose in thus allowing some foolish vanity to be gratified or some political end gained. The question can be easily solved. Are these medals productive of more good than evil? If so, retain them, and let us have more of them; if *not*, abolish them instantly.

L. T. F.

STATE NORMAL TRAINING SCHOOL.

I HAVE taken occasion several times, during the present term, to visit this school, now under charge of Miss M. Lewis, formerly Principal of the Trenton, N. J., Training Institute, established by herself. A Training School, from the name, is supposed to have a peculiar plan and methods of development for pupils and pupil teachers, and I have been anxious to see what *her* methods were. I have been somewhat familiar with the working of what has been called, some think rather questionably, the MODEL SCHOOL of San Francisco, and must confess to something of disappointment. The purpose of its origin was an honest and a good one. Training Schools are good, but their results depend very much upon their plan and the methods used in them. I think that the plan of the Model School was a deficient one. The methods used in it for training teachers and pupils I think very objectionable ones—at least those used since it has occupied the present building, where I visited it several times in 1865 and '66.

I have met in various parts of the State and held conversations with many of the Normal pupils, whose first experience in teaching was in that school; and the verdict of, I believe, nine-tenths of them is, "it was an unpleasant—a harsh experience; repelling in nearly all respects." It may be said that all public school teaching furnishes a similar experience to the young and sensitive teacher; as Spencer, I think, says that all public school LIFE in England is brutal to sensitive children. But training teachers to take charge of little children by methods that leave such feelings, is unquestionably wholly wrong. True, it did prepare the young teacher to go into a schoolroom and take charge of classes, viz: be master or mistress; it did beget a kind of confidence in the teacher which might grow into the belief that, under any circumstances, he or she could be "master of the situation." But this hardening process—the influences that produce that growth in the lady teacher, as the *best* result, are certainly not to be commended. The refining, moral, ennobling influences that lift the mass of children from their low level, and make them ashamed of falsehood, coarseness and vulgarity—the gentle and winning methods that make them love the school better than the home, oftentimes, and draw them to the teacher as to a dear friend—the influences that cause the young teacher to love the work, to love children—are of a higher order; and, if

the verdict of the representatives of that school be correct, they were not dominant there.

Miss Lewis comes from a school organized upon a somewhat different basis—where methods are used not employed here: where the whole course of training and study is arranged in accordance with what I believe to be a true philosophy of teaching—the Oswego Training School.

I have heard much of her as a remarkably successful teacher of little children, since she arrived here and while East, where she gained an enviable reputation in the State Normal Training School of New Jersey and the Trenton Female Institute before alluded to. I have met her in the school-room, have seen the results of her work, have heard her plans, and am satisfied. When she has the proper assistance, the full sympathy of all the Normal School teachers, the generous support of the State that she deserves, and the school well organized in all respects, I venture to assert, without fear of contradiction, that the change in the State Normal Training School will be something remarkable and refreshing. I wonder if the Normal Board of Trustees are really aware of the peculiar merits of Miss L. for this special position. If so, I venture to suggest, mildly, that, in California parlance, they give her “full swing,”—that they listen to her plans, witness her work, and then grant all her petitions, modifying them if they think them *insane*.

But her letters of introduction; her correspondence with distinguished educators in the East, commending her work; the notices of the press, are sufficient guarantee that she is not *wild*, but that she fully understands her duty and her work, and has a soul full of enthusiasm and a superior ability to carry out all her plans.

I understand that the school has been removed from the supervision of the City Department to that of the State strictly; a step that should have been taken long ago, having been recommended, I believe, several years since by the Principals of the State Normal School.

And now we trust that the Normal Board, or the State Superintendent, or the State Board, or whoever is responsible, will see that this important school is at once reorganized, upon principles similar to those in the Training School in Oswego—an institution that has accomplished more for the profession of teaching than any school of its age in the United States. In the November number of the *TEACHER*, I propose to give some facts in relation to this institution which will support this assertion.

ADVANCE.

THE best lessons are often learned by experience; so are some of the worst. Experience is one of the very oldest of teachers; but its prices are sometimes ruinously high.

SANTA CRUZ AND MONTEREY COUNTY JOINT TEACHERS' INSTITUTE.

TUESDAY—FIRST DAY.

THE Teachers of Santa Cruz and Monterey counties met to hold their joint Institute at the public school-room, Watsonville, on Tuesday, August 17th. The Institute was called to order at 10 o'clock, by Mr. Makinney, Superintendent of Santa Cruz county.

The proceedings were opened with prayer, by the Rev. Mr. Fish. Mr. Hayes was elected Secretary. Singing by volunteer members.

The following ladies and gentlemen were appointed on Committees:

On Introductions—Miss Poole, Miss Wright, Prof. Johns and Prof. Allsop.

On Music—Miss Crittenden, Miss Rothrief, and Mr. Wagor.

On Resolutions—Miss Bailey, Messrs. Brophy, Hayes, Johns, and Magoon.

Owing to the paucity of attendance, the Institute adjourned until 1½ o'clock.

AFTERNOON SESSION.

The Institute was called to order by Mr. Makinney. Singing by the Choir. Prayer by the Rev. Mr. Fish.

The names of forty-five Teachers were registered.

The Rev. Mr. Fish delivered an address, which was listened to with well merited attention.

"The Best Method of Securing Perfect Recitations," was discussed at some length by Messrs. Baum, Brophy, Johns, Fish, Martin and Makinney; after which the Institute adjourned for ten minutes.

On resuming business, the subject of "Text-Books" was discussed by Messrs. Johns, Makinney, Baum, and others. Clarke's Geography met with emphatic and unanimous disapproval.

Music, by Choir.

Adjourned until 8 o'clock P.M.

EVENING SESSION.

(In Presbyterian Church.)

Singing, by the Choir.

Prayer, by the Rev. Mr. Compton.

The Rev. Mr. Ames delivered an able address, setting forth the necessity of moral training, which was well received by a large and attentive audience.

WEDNESDAY.

MORNING SESSION.

The Institute was called to order by Mr. Makinney, at 9 o'clock. Singing, by the Choir. Prayer, by the Rev. Mr. Roberts.

The minutes of Tuesday's session were read and approved.

Miss Doxcey and Mr. Brophy were appointed critics.

The subject of "Text-Books" was resumed, Messrs. Johns, Allsop, Moorehouse, Magoon and Martin taking part in the discussion.

Miss Fallon read an interesting essay on "Obedience."

Music, by the Choir.

Select reading, by Miss Bailey.

Singing, by the Choir.

"The Best Method of Teaching Reading," was discussed by the Rev. Mr. Fish, the Rev. Mr. Ames, Messrs. Johns, Brophy, Warren, Lincott, Miss Ames, and others.

Miss Ames read a very humorous paper from the "Bigelow Papers."

Adjourned from 10:40 to 11 o'clock.

Business was resumed at 11 o'clock. Music by the Choir.

Mr. Wagor read an essay on "Singleness of Aim."

The following resolution was proposed by Mr. Johns, and seconded by Mr. Allsop:

That it is to our interest as Teachers, that no more special examinations be held.

After some discussion, the subject was deferred.

Music, by the Choir.

Adjourned to 1½ o'clock.

AFTERNOON SESSION.

The Institute was called to order by Mr. Clay, Superintendent of Monterey county, at 1½ o'clock.

Music, by the Choir.

Prayer, by the Rev. Mr. Fish.

Song, by the Choir and members of the Institute.

Mr. Hobbs read an essay on "The Study of Words."

Miss Hill, of Watsonville, examined one of her classes on the Geography of the United States and South America. The pupils showed a degree of proficiency which speaks well for Miss Hill's system of teaching.

Mr. Millette explained his system of teaching Arithmetic. The subject of Arithmetic was still further discussed by Messrs. Brophy, Martin, Johns, Warren, Makinney, and others.

A song, "Captain Jenks, of the Horse Marines," was sung by Master Walsh, of Watsonville, and loudly applauded.

Adjourned for ten minutes.

The Institute was called to order by Mr. Makinney.

Music, by the Choir.

Mrs. A. E. Thompson read an essay, "Let in the Light," which was well received by the audience.

"The Best Method of Teaching Spelling," was discussed by Messrs. Warren, Johns, Wagor, Miss Bailey and Miss Doxcey.

Mr. Brophy read the Critics' Report, which created a good deal of laughter.

The Institute adjourned to 8 o'clock.

EVENING SESSION.

Called to order by Mr. Clay. Music by the Choir.

Prayer, by the Rev. Mr. Fish.

The Rev. Mr. Roberts delivered an interesting address, entitled, "Intelligence and Energy necessary to Success."

The Institute adjourned.

THURSDAY.

MORNING SESSION.

The Institute was called to order at 9 o'clock, by Mr. Makinney. Singing, by the Choir. Prayer, by the Rev. Mr. Fish. Singing, by the Choir.

The minutes of the preceding day's session were read and approved.

The subject of Penmanship was next discussed, and many suggestions of importance were made with regard to the mode of conducting writing exercises, by Messrs. Fish, Warren, Johns, Wagor, and others.

Miss Tyus read an interesting essay.

The School Law was next discussed, but, at the suggestion of Mr. Clay, the subject was deferred.

Music, by the Choir.

Adjourned for ten minutes.

The Institute was called to order by Mr. Clay.

Singing, by the Choir, and Master Walsh.

Methods of Teaching Grammar were discussed by Messrs. Moorehouse, Millette, Hayes, Johns, Fish, Warren, Linscott, and Magoon.

Adjourned to 1½ o'clock.

AFTERNOON SESSION.

Present—54 teachers, viz: 32 from Santa Cruz, and 22 from Monterey.

Singing, by the Choir. Prayer, by the Rev. Mr. Compton. Singing, by the Choir.

Mr. Bailey read an essay on the "Characteristics of the American Mind."

Critic's Report, by Mr. Linscott.

Song, by Master Walsh.

Exercises in Calisthenics were conducted by Miss Bailey.

Discussion on the School Law was resumed.

Mr. Beasley gave some readings from Tennyson

Messrs. Warren and Millette illustrated their method of extracting the cube root.

Adjourned for ten minutes.

Singing, by the Choir.

Miss Bailey read Poe's "Raven" to an attentive audience.

Miss Della Pierce read an essay on Object Teaching.

Miss Mary Trust sang a German song.

The State Superintendent arrived at this time, and made a short address to the Institute.

The following resolutions were adopted:

That in our opinion, the maximum per cent. of school tax fixed by the law should be raised.

That in our opinion, all County Boards of Examination, and the State Board should hold their sessions at the same time.

That in our opinion, the School Law should be so amended as to authorize the collection of all school taxes at the same time, by the County Collector.

That in our opinion, the practice of granting special examinations should be discontinued.

That this Institute fully approves of the action of the State Board of Education, in superseding Quackenbos's Grammar with that of Brown.

That we recognize the necessity existing in our schools, of having a better text-book on History than the one now in use; and that it is our opinion such a work should contain, not only a history of our own country, but also an account of the more important events of ancient and modern times.

That the thanks of the Institute are tendered to the people of Watsonville, for the encouragement they have given us, and for the interest they have shown in the cause of education, by their presence at our deliberations.

That we also return our thanks to Rev. Mr. Compton and the Trustees of his Church, for their generosity and kindness in granting to the Institute the use of their building.

And finally, that our thanks are due to the Secretary of the Institute, and the members of the Choir, for the cheerfulness and zeal with which they have labored to promote the ends of the Institute, and render its sessions a source of pleasure, as well as instruction.

The minutes of to-day's session were read and approved.

Critic's Report, by Mr. Johns.

Singing, by the Choir; after which the Institute adjourned to 8 o'clock.

EVENING SESSION.

Singing, by the Choir. Prayer, by the Rev. Mr. Compton.

Mr. Makinney introduced State Superintendent Fitzgerald, who delivered an address, pointing out the necessary qualifications for the model Trustee, the model Teacher, and the model Superintendent.

The following resolution was adopted:

That the Joint Institute of Santa Cruz and Monterey counties extends its thanks to the Superintendent of Public Instruction, O. P. Fitzgerald, for his instructive lecture.

The Institute adjourned *sine die*.

JOHN HAYES,
Secretary of Joint Teachers' Institute.

A GRADUATE of the Imperial College at Peking recently received his diploma at the age of forty-seven, after having attended competitive examinations for twenty-six years.

A THERMOMETER which has been kept for seventy-five years in the vaults of the Paris Observatory, at a depth of ninety-one feet below the surface, has not varied more than half a degree during the interview.

BENEVOLENT FUND, FOR TEACHERS.

I HAVE been told that there is in this city a worthy member of our profession in distress—a lady of several years' experience in the work—one who speaks and teaches several languages—who is now incapacitated, from a prostrating disease—in debt, and with no relatives or near friends to comfort her.

This case forcibly brings to mind a suggestion and a promise of mine, made to an acquaintance in the cars, upon our last vacation excursion to Lake Tahoe. The suggestion was in substance, this: that a Benevolent Fund should be created in this State, for the relief of teachers in just such cases as the above. That a society should be formed, or the State Educational Society take it in hand, and appoint a committee to supervise the business—that a treasurer and other officers be appointed, and money collected and deposited in a saving's bank, and invested, if thought best. That an assessment of not less than twenty-five cents per month be levied on each member of the profession in the State, (there are, I think, about 1,200,) and the collection be made through county superintendents, or other appointed agents, and such other business transacted as may naturally come before such an association. In this way, and by volunteer subscriptions, probably at least \$250 could be collected monthly, or say \$3,000 annually.

Either myself or my acquaintance originated the above suggestion, and I then promised him I would, on my return, write an item for the press on the subject, if he would do the same. I have seen nothing from him, but here is the fulfillment of my promise, offered for what it may be worth. If I was an influential individual, the idea might be popular; but as I am not, unfortunately, it may fall and die, as other efforts have done. If so, twenty minutes of valuable time will be lost. C.

OUR readers may wish to be informed of a part of the alphabet of spectroscopic observations of light. It should be remembered that a continuous spectrum with no bright or dark lines shows that the light comes from a bright substance, which is either liquid or solid. If the bright substance be gaseous, there will be bright lines or bands of various colors distributed in various colors of the spectrum. If the lines are black, it proves that the light has passed through vapors of a lower temperature than the source of light. Each element in the source of light will produce its characteristic colored lines, and, if in the cooler vapor, will also turn these lines black.

THE first newspaper printed in America was issued in Boston, April 4th, 1704. Only one complete copy is in existence.

MISCELLANEA.

NATURAL OPPOSITION TO THE PROGRESS OF MAN.—The following passage from Mr. Buckle's *History of Civilization* indicates, in glowing colors, the obstacles which the prodigality of Nature may oppose to the progress of man:

Brazil, which is nearly as large as the whole of Europe, is covered with a vegetation of incredible profusion. Indeed, so rank and luxuriant is the growth, that Nature seems to riot in the very wantonness of power. A great part of this immense country is filled with dense and tangled forests, whose noble trees, blossoming in unrivalled beauty, and exquisite with a thousand hues, throw out their produce in endless prodigality. On their summit are perched birds of gorgeous plumage, which nestle in their dark and lofty recesses. Below, their base and trunks are crowned with brushwood, creeping plants, innumerable parasites, all swarming with life. There, too, are myriads of insects of every variety; reptiles of strange and singular form; serpents and lizards spotted with deadly beauty; all of which find means of existence in this vast workshop and repository of Nature. And, that nothing may be wanting to this land of marvels, the forests are skirted by enormous meadows, which, reeking with heat and moisture, supply nourishment to countless herds of wild cattle, that browse and fatten on the herbage; while the adjoining plains, rich in another form of life, are the chosen abode of the subtlest and most ferocious animals, which prey on each other, but which it might almost seem no human power can hope to extricate.

But amid this pomp and splendor of Nature no place is left for man. He is reduced to insignificance by the majesty with which he is surrounded. The forces that oppose him are so formidable that he has never been able to make head against them, never able to rally against their accumulated pressure. The whole of Brazil, notwithstanding its immense apparent advantages, has always remained entirely uncivilized; its inhabitants wandering savages, incompetent to resist those obstacles which the very bounty of Nature had put in their way. In their country the physical causes are so active, and do their work on a scale of such unrivalled magnitude, that it has hitherto been found impossible to escape from the effects of their united action. The progress of agriculture is stopped by impassable forests, and the harvests are destroyed by innumerable insects. The mountains are too high to scale, the rivers too wide to bridge; everything is contrived to repress the human mind, and keep back its rising ambition. It is thus that the energies of Nature have hampered the spirit of man. And the mind, cowed by the unequal struggle, has not only been unable to advance, but, without foreign aid, it would undoubtedly have receded.

Brazil, the country where, of all others, physical resources are most powerful, where both vegetables and animals are most abundant, where the soil is watered by the noblest rivers, and the coast studded by the finest harbors—this immense territory, which is more than twelve times the size of France, contains a population not exceeding six millions of people. Professor Ansted adds to this his testimony, to the effect that the native Indians seem irredeemable, and sunk in the most wretched barbarism; and that there appears no prospect whatever of any improvement in the district, since man can find no spot on which to commence his operations.

MAGNETISM.—The French Academy of Sciences has received a paper from M. J. Jamin, in which he shows that magnetism may be condensed, just like electricity. Having, for some special purpose, had a large horse-shoe magnet made, consisting of ten laminæ of perfectly homogeneous steel, each weighing 10 kilogrammes, he suspended it to a hook attached to a strong beam, and, having wound copper wire around each of the legs, which were turned downwards, he put the latter into communication with a battery of fifty of Bunsen's elements, by which means the horse-shoe might be magnetized, either positively or negatively, at pleasure. The variations were indicated by a small horizontal needle, situated in the plane of the poles. There was, further, a series of iron plates, which could be separately applied to each of the laminæ. Before attaching any of the latter, the electric current was driven through the apparatus for a few minutes, and then interrupted, whereby the magnet acquired its first degree of saturation, marked by a certain deviation of the needle. One of the iron plates (usually called "contacts") was then put on, and it supported a weight of 140 kilogrammes. A second trial was now made, and the current having passed through again for a few seconds, it was found that the horse-shoe would support 300 kilogrammes, instead of 140. The number of contacts being now increased to five, which together, in the natural state, supported 120 kilogrammes, it was found after the passage of the current that they could support the enormous weight of 680 kilogrammes, which they did for the space of a full week. No sooner, however, were the contacts taken off than the horse-shoe returned to its usual strength of 140 kilogrammes. This leads to show that magnetism may be condensed like electricity for a short period.

GOOD AND BAD HANDWRITING.—I have heard illegible writing justified as a mark of genius. That, of course, is a very flattering theory. I wish I could think it true. But, like most of these flattering theories about disagreeable eccentricities, it has one fatal fault—it is inconsistent with notorious facts. Men of genius do not, I believe, as a rule, scribble. They write legibly.

Thackeray, we all know, was a beautiful pensman. He prided himself on his writing. He could write the Lord's Prayer, in a legible hand, on a bit of paper not bigger than a sixpence. I never heard that Charles Dickens had a contribution returned to him because it was illegible. "Douglas Jerrold's copy was almost as good as copperplate;" and my friend, who, in his own graphic style, is sketching the career of "Christopher Kenrick," in these pages, in a masculine, clear and flexible hand, tells me that one of Jerrold's friends, "Shirley Brooks, writes plainly, and with very little revision." Lord Lytton's manuscript is written in a careless scrawl; but is not illegible, though, from interlineations and corrections, perhaps now and then puzzling to printers; and Mr. Disraeli writes in a large and angular running hand, legible enough, if not particularly elegant. And most of our leading politicians are excellent penmen. Mr. Gladstone seems to write, as he generally speaks, in a hasty, impetuous manner; but, with all his haste and impetuosity, his writing is perfectly legible. It is an Oxford hand. Lord Derby writes what I may, perhaps, call an aristocratic hand, at once elegant and legible. Lord Russell writes a lady-like hand. It is like everything else about the Earl—small, and occasionally puzzling, but not inelegant. Mr. Bright's letters are as distinctly and regularly formed as this print. Lord Stanley's despatches are as legible as large pica. You may run and read them. Every character is fully formed; every *i* is dotted, every *t* is crossed. You will find no sign of haste or slovenliness in his MS. I might go on in this style through a dozen more names; but it is not necessary. I have cited enough to prove my point—that illegible handwriting is not a mark of genius, or even of superior intelligence. I know, on the other hand, that there are many men of genius who write and have written execrably. Sir John Bowring is one of these. It is said that Lord Palmerston once sent back an important despatch of Sir John's to China, with a request that it might be copied in a readable handwriting; and Lord Cowley, our late ambassador to the Court of France, wrote so hastily and illegibly, that Lord Granville, I believe, once asked his Lordship to keep the originals of his dispatches for his own information and send copies to the Foreign Office. "Lord Lytton, who moved a clause to the Reform Bill that nobody should have a vote who could not write a legible hand, writes so illegibly that the clerks at the table could not read the resolution which he handed in." And Christopher Kenrick adds that "Tom Taylor writes as if he had wool at the head of his pen." And these men are the types, I fear, of a far larger class than the first set of politicians and authors whom I have enumerated.—*Gentleman's Magazine*.

THERE is every prospect of the British Government acceding to the proposed halfpenny postage for newspapers.

A REMARKABLE instance of the effect of pine trees on the soil in which they grow, has been published in the Woods and Waters Reports of the north of France. A forest near Valenciennes, comprising about eighteen hundred acres of scrub and stunted oak and birch, was grubbed up in 1843, and replaced by Scotch firs (*Pinus sylvestris*). The soil, composed of silicious sands mingled with a small quantity of clay, was in some places very wet; it contained two or three springs, from one of which flowed a small stream. The firs succeeded beyond expectation, and large handsome stems now grow vigorously over the whole ground. It was in the early stages of their growth that the remarkable effect above referred to was noticed. The soil began to dry; the snipes that once frequented the place migrated to a more congenial locality; the ground became drier and drier, until at last the springs and the stream ceased to flow. Deep trenches were dug to lay open the sources of the springs, and discover the cause of the drying up; but nothing was found except that the roots of the firs had penetrated the earth to a depth of five or six feet. Borings were then made; and six feet below the source of the spring, a bed of water was met with of considerable depth, from which, it was inferred, the spring had formerly been fed. But in what way its level had been lowered by the action of the firs could not be determined, and is still a matter of speculation. But the fact remains, and may be utilized by any one interested in tree-culture. For years it has been turned to account in Gascony, where the lagoons that intersect the sandy dunes have been dried up by planting the *Pinus maritimus* along their margin. Hence we may arrive at the conclusion that while leafy trees feed springs, and maintain the moisture of the soil, the contrary function is reserved for spine or needle-bearing trees, which dry the soil, and improve its quality. Our War Office might perhaps do well to take note thereof, seeing that the forts now building at the mouth of Medway show a tendency to sink into the soft marshy soil. If the ground can be consolidated by plantations of the maritime pine, it would be good economy to have them planted.—*Chambers' Journal*.

A NEW OCEAN.—The success of the great French engineer, M. Ferdinand de Lesseps, in the work of uniting two oceans, has already been chronicled. Magnificent as that achievement is, another and a greater one, by the same mind, is to be entered upon at an early day. If we may credit the Alexandria correspondent of the *Italie*, of Florence, M. de Lesseps has determined to transform the "Great Sahara" of Africa into an ocean. That paper states that some time ago he sent engineers to survey the arid waste, at the suggestion of some African explorers, who had a theory that it was originally a great inland sea that had been displaced by a convulsion of nature. The result is that the Sahara has been found to lie below the level of the Red Sea at its nearest point of approach, more than thirty feet, with a con-

stantly increasing depression as it recedes toward the interior. Obviously, in this case, all that remains to be done for the conversion of the desert into a new Mediterranean is to turn the waters of the Red Sea into the basin. A canal seventy-five miles in length will, it is asserted, accomplish this purpose.

The ocean of Sahara! Should this latest project of M. de Lesseps prove a success, what changes would immediately follow in the physical, social, and moral condition of central Africa!

SIZE OF THE STARS.—How large are the stars, and are they alike, or do they differ in size? It used to be conjectured that they are of somewhat similar magnitude, presumably as great as our sun, and that the differences of apparent size are due to differences of distances; but when astronomers came to discover that some of the smaller stars are the nearest to our system, this idea fell to the ground. A German computer has now, however, calculated the actual dimensions of one particular star, and finds its mass is rather more than three times that of the sun. The star in question is less than the fourth magnitude—a comparatively small one. What, then, must be the size of the Sirius and Aldebaran class? The reason of its selection for this determination was that one of the components of what is called a binary system—two stars revolving about each other, like the sun and planet—and the motions of the members of such a system afford data for the computation. The star's distance from us is a million and a quarter of times that of the earth from the sun, so that light takes twenty years to travel hither from it.

THE NON-BEEF-EATING NATIONS.—The rice-eating Hindoos at one time took a better position among the nations than they do now, but neither in war nor in peace did they ever attain to anything of the standard of Europe or America. The Japanese have for ages been a fish rather than a flesh-eating race, and all travellers agree that they have receded rather than advanced from the low standard of civilization to which they had attained a thousand years ago. The Chinese are as peaceful and inoffensive as we would suppose a nation of rice-eaters might necessarily be. They have developed, it is true, a genius for certain mechanical arts, and a quiet skill in unique handicraft; but of those broad purposes of action, that made Rome mistress of the world, that now compel the eyes of the planet to turn to France, England and America, China has known nothing for the long centuries of her history. And here I may say that, in estimating the relative position of any nation in history, we do not consider alone its literature, nor its commerce, nor its mechanical genius, nor its religion, nor its system of education, nor its success in war and legislation, nor its specimens of individual greatness, but of all these combined. Careless observers and thinkers, on visiting for the first time the coasts of China and Japan, are sometimes so powerfully impressed with the originality and

patience and mechanical genius of the people, that they at once accord to these nations a higher relative position than they really deserve or have ever been awarded by the common voice of mankind.

The diet of the nations of Africa, and of most of the islands of the sea, is usually quite meagre, and has too little of variety to afford the best kind of nutrition. The inhabitants of some districts of South America eat clay; certain negro tribes feed on ants; the savages of a large portion of the tropical regions subsist almost exclusively on fruit; the Greenlanders gorge themselves on train oil and blubber; and the peasant of the Apennines oftentimes makes his entire meal of roasted chestnuts; the lower classes of Europe everywhere regard meat as a luxury and not as a daily necessity, and the potatoes and sour milk of the Irish have become proverbial. But what have the natives of South America, the savages of Africa, the stupid Greenlander, the peasantry of Europe, all combined, done for civilization, in comparison with any single beef-eating class of Europe?—*Dr. Beard, in Hours at Home for September.*

ICEBERGS.—The iceberg is the largest independent floating body in the universe, except the heavenly orbs. There is nothing approaching it, within the range of our knowledge, on this globe of ours; and yet it is, as we have seen, a fragment of the ice stream, which is, in its turn, but an arm of the ice sea. And yet the iceberg is to the great quantity of Greenland ice as the paring of a finger nail to the human body; as a small chip to a large tree; as a shovelful of earth to Manhattan Island. Yet magnify the bit of ice in your tumbler until it becomes, to your imagination, a half a mile in diameter each way, and you have a mass that is far from unusual. Add to this a mile. two miles of length, and you have what may be sometimes seen. I have sailed alongside of an iceberg two miles and a half, measured with a log line, before coming to the end of it.

The name signifies, as we have seen before, ice mountain, and it is truly mountainous in size. Lift it out of the water, and it becomes a mountain one thousand, two thousand, three thousand feet high. In dimensions it is as if New York City were turned adrift in the Atlantic, or the Central Park were cut out and launched in the same place. An iceberg of the dimensions of the Central Park is far from unusual. And its surface is not in form unlike it either. It is undulating like the Park, and craggy, and crossed by ravines, and dotted with lakes—the water of the lakes being formed from the melting snows of the late winter, and also of the ice itself after the snows have disappeared before the influence of the summer's sun. I have even bathed in such a lake, although I am glad to say but once, and that was in "those days of other years," when the youthful insanity is strong to say, "I have done it,"—a disease which I be-

lieve to be amenable only to that treatment popularly known as "sad experience." Skating on an iceberg lake is far more satisfactory and sensible. Such are the general features of the iceberg as they are to be seen every day in the Arctic waters.—*Appleton's Journal*.

NORMAL SCHOOLS.—It is the province of the Normal School to give this special culture; to place before its students the results of the experience of the past; to furnish them, at the commencement of their career, with the rich stores of practical knowledge that others have acquired only by years of painful toil and experiment; to open the door and explain how the noisy boisterous group of children, brimful of fun and vitality, shall be organized, classified, and converted into a quiet, orderly, hard-working school; to investigate the laws of mental development, and thereby deduce a natural order and system of education; to teach how to observe, how to think, how to study; to go beneath the rules and formulas of the text-books, to the principles from which they spring; to examine by theory and practice methods of instruction,—criticising those that are faulty and recommending those that are correct, showing what is wrong, and why, and what is right and why. It is the province of the Normal School to push aside the veil, and, as far as possible, examine the hidden springs of human actions, for it is the knowledge of these that furnishes the chart of school government; to analyze the motives that prompt to good or bad deeds; to lay bare the key-board of the passions, upon which the fingers of the teacher, playing like a skillful musician, may evolve peace, order, harmony, or noise, discord, and confusion.

There can be no doubt as to the effect of such a course of instruction. There are, and will be, good teachers who have never attended a Normal School; just as there are self-made men who have become great, not in consequence but in spite of surrounding circumstances. But these exceptions furnish no argument. Native talent, however bright, will gain additional lustre by cultivation. The best teachers in the world might have been better by the advice, knowledge and experience of their brethren.—*Illionis Teacher*.

UNIVERSITY OF CAMBRIDGE LOCAL EXAMINATIONS.—Lord Lyttleton presided at a public meeting held, May 14th, at the London University Buildings, Burlington Gardens, for the distribution of the certificates and prizes obtained at the last examination of students in the London centre, not members of the University. The Report of the Syndicate appointed to conduct the local examinations held in December last at 30 centres, states that 1,783 students entered, of whom 401 were girls, against 1,704 in the previous year, of whom 252 were girls. In the number of junior boys there is a decrease of about 3 per cent, and in the seniors

about 20 per cent.; while in the number of junior girls there is an increase of about 71, and of seniors of about 77 per cent. The per centure of failures among the senior boys and junior girls is considerably beneath that of the previous year. About 16 per cent. of the junior boys and 10 per cent. of the junior girls were under 14 years of age; three of the senior boys and two girls had not completed 15 years. The subjects are English generally, religious knowledge, Latin and Greek, French, German, mathematics, chemistry, zoology and drawing. The noble Chairman, in opening the business, remarked that the Oxford and Cambridge local examinations were important features in the movement in favor of what was popularly called middle-class education. Glancing at the efforts made of late years to promote education, the institution of the system of public examinations and its advantages, he turned to the Report of the Royal Inquiry Commissioners, which he said had placed the whole subject of national education upon a footing altogether different from that on which it formerly stood, and added that if their recommendation should receive effect it would render it impossible that the important question of the education of the people should depend any longer upon mere voluntary effort, one of the proposals being that the whole of the endowed and the private schools of the country should be placed under some general management, which should embrace the whole country. He hoped that the local examinations would receive permanent establishment in any general measure that might be adopted, because nothing could compete with the *prestige* which the high character, the antiquity, the acknowledged authority of the two great Universities of Oxford and Cambridge necessarily conferred in their certificates and honors. He recommended in order to test the efficiency of the instruction, that in future whole classes should be sent up for examination, instead of a few prominent boys from each school. He claimed credit for the University of Cambridge in having been the first to introduce an examination for girls, whose capacity for dealing with almost all educational subjects was, he believed, quite equal to that of boys. He deprecated the system of cramming, and quoted from the report of the Syndicate, to show that in too many instances the pupils sent up from some of the private schools were little better than parrot-taught, knowing nothing really of the subjects in which they were examined, while in respect to some of the girls, it was astonishing how ingenious they proved themselves in filling whole sheets of paper with well and grammatically written sentences having no meaning whatever.—*Papers for the Schoolmaster.*

WHAT SLEEP WILL CURE—The cry for rest has always been louder than the cry for food. Not that it is more important, but it is harder to get. Of two men or women, otherwise equal,

the one who sleeps the best will be the most moral, healthy and efficient.

Sleep will do much to cure irritability of temper, peevishness, uneasiness. It will cure insanity. It will restore to vigor an over-worked brain. It will build up and make strong a weary body. It will do much to cure dyspepsia, particularly that variety known as nervous dyspepsia. It will relieve the languor and prostration felt by consumptives. It will cure hypochondria. It will cure the blues. It will cure the headache. It will cure the heart-ache. It will cure neuralgia. It will cure a broken spirit. It will cure sorrow. Indeed, we might make a long list of nervous maladies that sleep will cure.

The cure of sleeplessness, however, is not so easy, particularly in those who carry grave responsibilities. The habit of sleeping well is one which, if broken up for any length of time, is not easily regained. Often a severe illness, treated by powerful drugs, so deranges the nervous system that sleep is never sweet after it. Or, perhaps, long continued watchfulness produces the same effect; or hard study; or too little exercise of the muscular system, or tea and whisky drinking, and tobacco using. To break up the habit are required:

1. A clean, good bed.
2. Sufficient exercise to produce weariness, and pleasant occupation.
3. Good air, and not too warm a room.
4. Freedom from too much care.
5. A clean stomach.
6. A clear conscience.
7. Avoidance of stimulants and narcotics.

For those who are overworked, haggard, nervous, who pass sleepless nights, we commend the adoption of such habits as shall secure sleep, otherwise life will be short, and what there is of it sadly imperfect.—*Herald of Health*.

WARMTH FROM THE STARS.—It would scarcely be thought by most persons that the stars supply the earth with an appreciable amount of heat.

Even on the darkest and clearest night, when the whole heavens seem lit up by a multitude of sparkling orbs, the idea of heat is not suggested by their splendour. It will, therefore, seem surprising to many that men of science should assign no inconsiderable portion of our terrestrial heat-supply to those distant twinkling lamps. It is not many years since Professor Hopkins, of Cambridge, went even farther, and expressed his belief that if the earth's atmosphere were but increased some 13,000 yards in height, so as to have an increased power of retaining the warmth poured upon it from outer space, we might do without the sun altogether, so far as our heat-supply is concerned. As a glass house collects the sun's heat and renders it

available during the time that the sun is below the horizon, so he held that the additional layer of air would serve to garner the warmth of the stars in quantities sufficient for all our requirements.

But until lately all these views, however plausible they might have seemed, had not been founded upon facts actually observed. It has been reserved for these days in which discoveries of the most unexpected kind are daily rewarding the labors of our physicists, to see that established as a certainty which had before been founded merely upon considerations of probability. Mr. Huggins, the physicist and astronomer, has just published the results of a series of inquiries addressed to the actual measurement of the heat which we receive from the leading brilliants of the nocturnal sky. The instrument called the galvanometer, which has been made more or less familiar to many of us by the researches and lectures of Mr. Tyndal, was made use of by Mr. Huggins in these investigations.

OBJECT-LESSONS FOR SMALL CHILDREN.

PARCHMENT—SIXTH GRADE.

Do you know what this is? It is paper.

No; it looks very much like paper, but it is not that; it is *parchment*.

Of what is paper made? Of rags.

Yes, and this is made from the skin of sheep. Then is it vegetable, animal, or mineral substance? Animal. Certainly.

Do you think this looks much like the skin of a sheep? No; the skin of a sheep is woolly.

So was this once, but the wool has been taken off, the skin scraped with some sharp instrument, and then rubbed with pumice stone.

Is parchment natural or artificial? Artificial.

Why? Because it is made by man.

Tell me some more of its qualities. It is opaque.

Can you not see light through it? Yes; it is translucent.

What is its color? White.

Pure white, like this paper? No; *yellowish* white.

Why does it rustle so when I bend it? It is stiff.

Is it smooth too? Yes; rubbing it with pumice stone has made it smooth. Let us see if we can tear this parchment. Do you think you can? Well, you may try. No, you see you cannot tear it, try as hard as you may.

What is the reason? It is tough.

See how easily this paper may be torn! Which, then, do you think would last the longer, paper or parchment? Parchment.

Then we will say that parchment is *durable*, for that word means *lasting*.

Now, what do you suppose parchment is used for? Well, it is used to write upon.

When people want their writing to last for many, many years—for centuries—they write upon parchment. The laws of the land are written upon this substance.

Now, repeat in concert the qualities and use of parchment, and then I will tell you a little story about it.

Qualities.—Animal substance; yellowish white; translucent; stiff; tough; artificial; durable.

Use.—To write upon, when it is necessary to preserve the writing for a long time.

STARCH—SEVENTH GRADE.

What is this that I hold in my hand? It looks something like flour, but it is not; it is starch. I suppose you have all seen it before, and know what it is used for; but can any of you tell me where it comes from? It comes from plants.

Yes, it is found in different parts of many plants—in seeds—as in wheat and rice; in stems, and in roots.

Of what use is it to the plants; do you know? Well, it is stored away for their food.

Do you use it for food? No; for starching clothes.

Well, in this form, we use it to stiffen clothes; but when we eat potatoes or rice, we are eating starch; and have you never eaten any corn-starch puddings?

Do you know how this kind of starch is made? Well, I will tell you how you can make it in a small way. Take some flour, and tie it up in a piece of muslin. Then dip it in water and press it with your fingers, squeeze it, as it were. Then the starch will settle in the bottom of the water.

Tell me some of the properties of starch. It is white, opaque, bitter, crumbling.

Very well. Now can you tell me whether it is soluble or not? It is soluble in hot water, but not in cold.

Repeat in concert its qualities and uses.

Qualities.—White; bitter; opaque; crumbling; soluble in hot water.

Uses.—For food; to stiffen clothes.

BACK NUMBERS.—EDS. CAL. TEACHER:—I desire to say to the teachers who may wish to send to me for back numbers of the TEACHERS, that I have now only the following numbers, and of some of these only one copy. As before, I shall take pleasure in sending them to any address free of charge.

Vol. 1, Nos. 5 and 7.

“ 2, “ 1, 4, 5, 6, 8, 9 and 10.

“ 3, “ 2, 3, 4, 5, 7, 8, 9, 11 and 12.

“ 4, “ All.

“ 5, “ 1, 2, 6, 10, 11.

“ 6, “ 1, 3, 10.

BERNHARD MARKS.

DEPARTMENT OF PUBLIC INSTRUCTION.

UNIVERSITY OF CALIFORNIA.

Now that the Exercises of the University of California have been fairly initiated, we deem it appropriate to call the attention of the friends of education to certain important auxiliaries to the success as well as the usefulness of this institution:

1—ENDOWMENT OF PROFESSORSHIPS.

It is needless to urge upon our men of capital the great boon which they would confer on the cause of education by the endowment of *Special Professorships* in any of the Colleges which have been organized in the University. Are there not many wealthy citizens of California, who are both able and willing to invest, say \$40,000 *each*, in endowments of this kind? We venture to say that it is impossible to find an investment more remunerative or more honorable to the donor.

2—ENDOWMENT OF SCHOLARSHIPS.

To men of more moderate means, the endowment of *Special Scholarships* in the several Colleges of the University, offers a means of advancing the cause of high education, whose importance cannot be overestimated. Scholarships, yielding from \$250 to \$350 a year, (requiring an investment of not more than from \$2,500 to \$3,500,) would enable young men of *merit* and *restricted means* to secure a thorough University education. Such scholarships should be awarded to *meritorious* and *needy* students. To secure these two conditions with the requisite *impartiality*, it is almost needless to add that the Faculty of the University should constitute the Awarding Board.

In the long established Universities of the East, such scholarships have been found to be the most important and powerful auxiliaries. The students to whom they are awarded are usually the most deserving and talented young men who present themselves for admission. They are fully impressed with the necessity of *studious habits* and *hard work*. They infuse a high *intellectual and moral tone* into the institution. Some of the Eastern Colleges and Universities have more than twenty such scholarships, yielding from \$100 to \$300 a year, which are given to deserving students of small means.

3—PREMIUMS, OR PRIZES.

The endowment of *Premiums*, or *Prizes*, awarded for *special proficiency* in any department designated by the donor, constitutes another important auxiliary to educational progress. Such *Premiums*, *Prizes*, or *Prize Medals*, usually vary in value from \$20 to \$100 each. Many a deserving young man, of restricted means, would struggle to secure such prizes. The Cornell University has no less than forty-six such prizes, varying in value from \$10 to \$100.

4—BENEFICIARY FUNDS.

In order to aid meritorious students of small means, *Beneficiary Funds* may be placed in the hands of the Regents of the University. In Yale College, about \$3,000 is annually applied in this manner for the relief of students who need pecuniary aid; about seventy have thus their tuition either wholly or in part remitted. Who will make the first contribution to such a fund for our new University? We understand that among the students recently admitted, more than one stands in need of such assistance.

We have every assurance that the Board of Regents are prepared to begin a truly great work, and to make the University of California parallel to the best European University—not simply to follow the common model of American Colleges. *Freedom of study*, of thought, and of life, should be the first principle. The highest possible opportunities of learning should be joined to it. Let the University be a great center of intellectual activity; and let it educate by *stimulating* and then *teaching*—not by imposing *tasks*. The idea of founding such an institution amidst the magnificent nature of California, on the edge of the mysterious Pacific, and out of reach of the old and obstinate conservatism of the East, is, in itself, inspiring.

But, on the other hand, we must not forget that, from its very nature, the growth of the University must be *slow*; it must, to a great extent, first *create* the very want which it is intended to meet. Our people are not accustomed to the large and generous culture which the older University towns possess, and many have mistaken the objects of this noble endowment. It will require time and culture—and that culture the University must *itself* mainly supply—to enable them to appreciate the broad views and lofty aims of its wise founders, in providing an

institution which is to furnish, not *amusement* to the masses, but, within its prescribed sphere, the *best nutriment* to the *best minds* in the community.

In perfecting and carrying out these noble objects, the Regents need the assistance and co-operation of every advocate of high and thorough education. We trust the Faculty of the University will not be found wanting; and we hope those who are blessed with abundant means will not be backward in assisting meritorious young men in restricted circumstances, who are anxious to secure the highest and best education.

We have not mentioned other auxiliaries to the University—such as the establishment and equipment of a *first-class Astronomical Observatory*—for such things are not so *pressingly* demanded. There are “merchant princes” in California who will, doubtless, erect for themselves enduring monuments in the shape of a great *Observatory*, or of a magnificent *Museum*.

OFFICIAL JOURNEYINGS.

SANTA CRUZ AND MONTEREY.

THE Joint Institute for Santa Cruz and Monterey counties was again held at Watsonville this year, beginning August 17th. We were present on the last day of the session. There is a peculiar satisfaction enjoyed in attending an educational gathering at Watsonville. We know of no place in California where a livelier interest is manifested in behalf of education. The daily sessions of the Institute were crowded with an intelligent and interested auditory. The evening exercises drew full houses. We congratulate Superintendents Makinney and Clay and the Teachers of the two counties upon the success of their late Institute, and beg leave to express our acknowledgments for the courtesies extended to us on the occasion of our visit.

STATE SUPERINTENDENT.

REPORT OF STATE NORMAL SCHOOL.

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AUGUST.

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“ left.....	4	“ left.....	4
“ in attendance.....	87	“ in attendance.....	60
Training School.....			165

STATE NORMAL SCHOOL.

THE next term of the State Normal School will begin on the 8th day of November, 1869. Parties interested will remember that changes have been made in the beginning and ending of the terms, and that the Second Session of the current year will begin on the 8th day of November, instead of the 1st of January as formerly.

Applicants for admission should be present at the beginning of the term.

STATE EDUCATIONAL DIPLOMAS.

STATE EDUCATIONAL DIPLOMAS have been granted, by the State Board of Examination, to the following teachers:

Miss Jean Parker,	Miss M'y A.H. Estabrook,	Wm. J. Gorman,
Mrs. C. K. Waters,	Miss M. E. D'Arcy,	Charles Johns,
Miss Nettie Doud,	A. W. Peck,	A. G. Drake,
Miss Minna Graf,	J. W. Mackall,	Geo. Lighthall.
	Joseph O'Connor,	

STATE CERTIFICATES.

State Certificates have been issued to the following teachers:

FIRST GRADE.

Miss Jennie Yates,	Miss Mary J. Little,	James S. White,
Miss Clara Germain,	Mrs. C. A. Menefee,	A. B. Hughes,
Miss Amynda Ryan,	Thos. J. Witt,	C. B. Towle,
Miss M. V. Glasgow,	D. K. Zumwalt,	Thos. K. Howell,
Miss H. J. Allison,	John F. Jordan,	Nehemiah Smith,
Miss Fannie Mitchell,	A. C. McMeans,	Wm. H. Magoon,
Miss Mary A. Castelhun,	Charles E. King,	Benj. F. Bagley.
Miss E. Overend,	Delos J. Van Slyke,	

SECOND GRADE.

Miss Anne E. Benson,	Miss Jennie E. Dowling,	A. W. Butler,
Miss Lizzie B. Crowell,	Miss L. H. Crocker,	A. H. Pratt,
Miss Julia O'Brien,	Mrs. Emma Hunt,	Edwin B. Hagans.
Mrs. Clifford,	J. L. Parker,	

THIRD GRADE.

Miss Mary Sailor,	Miss Susie E. Skidmore,	Miss Annette Miller,
Miss Addie Cherry,	Miss Hattie M. Barton,	Miss Mary J. O'Neil,
Miss Mary P. Carpenter,	Miss Hattie Jackson,	Miss Ida A. Tucker,
Miss E. S. Wiley,	Miss Nina E. Patton,	Miss D. A. Forsman,
Miss Lizzie Burnett,	Mrs. Frances Peck,	

REPORT OF PUBLIC SCHOOLS.

ROLL OF HONOR.

"GRANT DISTRICT SCHOOL," *Stanislaus County*: THOS. J. BLAKE, Teacher.—For the the term ending September 17th, 1869. Katie Donnelly, Alice Salter, Nancy M. Browder, Mary Ragsdale,

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BOOK TABLE.

PARSER AND ANALYZER. For Beginners, with Diagrams and Suggestive Pictures. By FRANCIS A. MARCH, Professor of the English Language and Comparative Philology in Lafayette College. Author of "Methods of Philological Study of the English Language," "Comparative Grammar of the Anglo-Saxon Language," etc. New York: Harper & Brothers, Publishers. 1869.

This is one of the smallest of books in size; yet it contains more grammar and a far better method of presenting the subject than is found in many larger and more expensive works. The black-board exercises—presenting to the eye the methods of parsing and analysis—are the very things for the school-room. Indeed it is a little gem, the only flaws it has being such as were fastened on the English language by Lindley Murray, and have been perpetuated by the vast herd of authors who tread in his foot-steps. A. Roman & Co., San Francisco.

THE PHILOSOPHY OF TEACHING. The Teacher, The Pupil, The School. By NATHANIEL SANDS. New York: Harper & Brothers, Publishers. 1869.

Here is an octavo of forty pages on "The Philosophy of Teaching." It has much that is sensible and true; some things that are questionable; and many which teachers would do well to read and digest. It would afford the earnest, enquiring teacher an evening of very suggestive reading. A. Roman & Co., San Francisco.

SEX IN NATURE: An Essay proposing to show that Sex and the Marriage Union are universal principles, fundamental alike in Physics, Physiology and Psychology. By LEOPOLD HARTLEY GRINDON, Author of "Life, Its Nature and Varieties," "Little Things of Nature," "The Phenomena of Plant Life," etc. Boston: Nichols and Noyes. 1869.

A book that reminds one of Dr. Holcombe's "Sexes In Heaven." That "dualism" that "bisepts nature" is traced through the vegetable, animal, and mineral kingdoms—it is clearly, elegantly, learnedly and (almost) convincingly set forth. A suggestive and entertaining volume; full of curious and pleasing thoughts. A. Roman & Co.

WEDLOCK: Or the Right Relations of the Sexes; disclosing the Laws of Conjugal Selections and showing who may, and who may not marry. By S. R. WELLS, author of "New Physiognomy," "How to Read Character," and editor of the Phrenological Journal. New York: Samuel R. Wells, Publisher. 1869.

A book that many people would be benefitted by reading. A. Roman & Co., San Francisco.

THE WORKS OF HORACE. Edited with Explanatory Notes. By THOMAS CHASE, A.M., Professor in Haverford College. Philadelphia: Eldridge & Brothers. 1870.

Horace is a favorite. His works have been often edited. The present edition is an improvement in many respects. It is the original work of American scholarship, and it has the merit to entitle it to the patronage of the American people.

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The Second Term of the current year will commence on the 8th day of November, 1869. All candidates for admission must be present at that time.

COURSE OF STUDY.

REQUISITES FOR ADMISSION.

To secure admission to the Junior Class, Second Division, applicants must pass a written examination on the following subjects, viz.:

Eaton's Common School Arithmetic—to percentage.

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Willson's Fourth Reader.

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JUNIOR CLASS—*First Session.*

Arithmetic—Eaton's Common School—complete.

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Reading—Willson's Fifth Reader.

Moral Lessons—Cowdery's.

Spelling—Willson's Larger Speller.

JUNIOR CLASS—*Second Session.*

Arithmetic—Eaton's Higher.

Grammar—Quackenbos'—complete.

Rhetoric—Boyd's.

Physiology—Cutter's Elementary.

History—Quackenbos'.

Vocal Culture—Russell's.

Book-Keeping—Payson & Dutton's Single Entry.

General Exercises throughout the Junior Year—Penmanship; Object-Lessons; Callisthenics; Methods of Teaching; School Law; Composition and Declamation.

SENIOR CLASS—*First Session.*

Arithmetic—Eaton's Higher—reviewed.

Algebra—Robinson's Elementary.

Grammar—Greene's Analysis.

Natural Philosophy—Quackenbos'.

Physiology—Cutter's Larger.

Rhetoric—Boyd's.

Natural History—Tenney's.

SENIOR CLASS—*Second Session.*

Botany—Gray's.

Physical Geography—Warren's, with Guyot's Wall Maps.

Normal Training—Russell's.

Geometry—Davies' Legendre—five books.

English Literature—Shaw's.

Book-Keeping—Payson & Dunton's Double Entry.

General Exercises—Same as in Junior Year.

REGULATIONS OF THE STATE NORMAL SCHOOL.

Adopted by the Board of Normal School Trustees, March 28, 1868.

1. All pupils, on entering the School, are to sign the following declaration of intention:

'We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State.'

Male candidates for admission must be at least eighteen years of age; and female applicants at least fifteen years of age; and all must possess a good degree of physical health and vigor.

2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

GENERAL INFORMATION.

The time for completing the Normal School course is two years, each divided into two terms of five months.

There will be Written Examinations and Public Exercises at the close of each term. The Graduating Exercise will be in May.

Pupils will be required to furnish their Text Books. Books for reference will be furnished by the State. Good boarding can be procured at about twenty-five to thirty dollars per month.

Applicants will please read attentively the "Regulations" as given above, particularly the Fourth and Fifth.

All graduates will be required to pass an examination on the entire course. Those who complete the studies of the Junior Class will be entitled to certificates of qualification, for teaching schools of Second and Third Grade.

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Adopted by the California State Board of Education, July, 1869.

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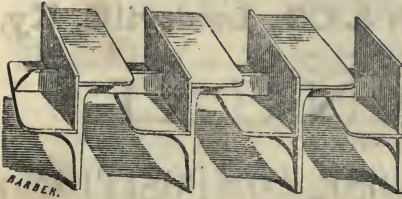
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
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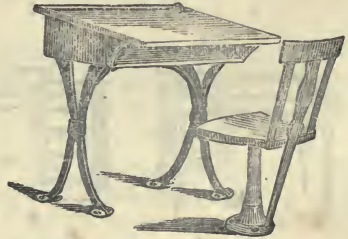
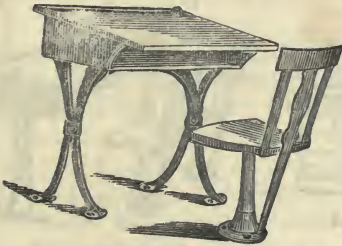
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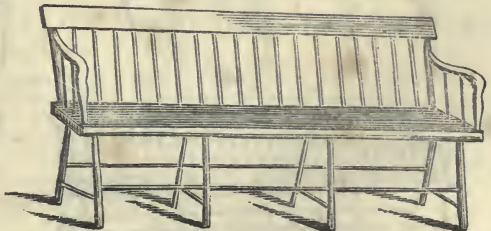
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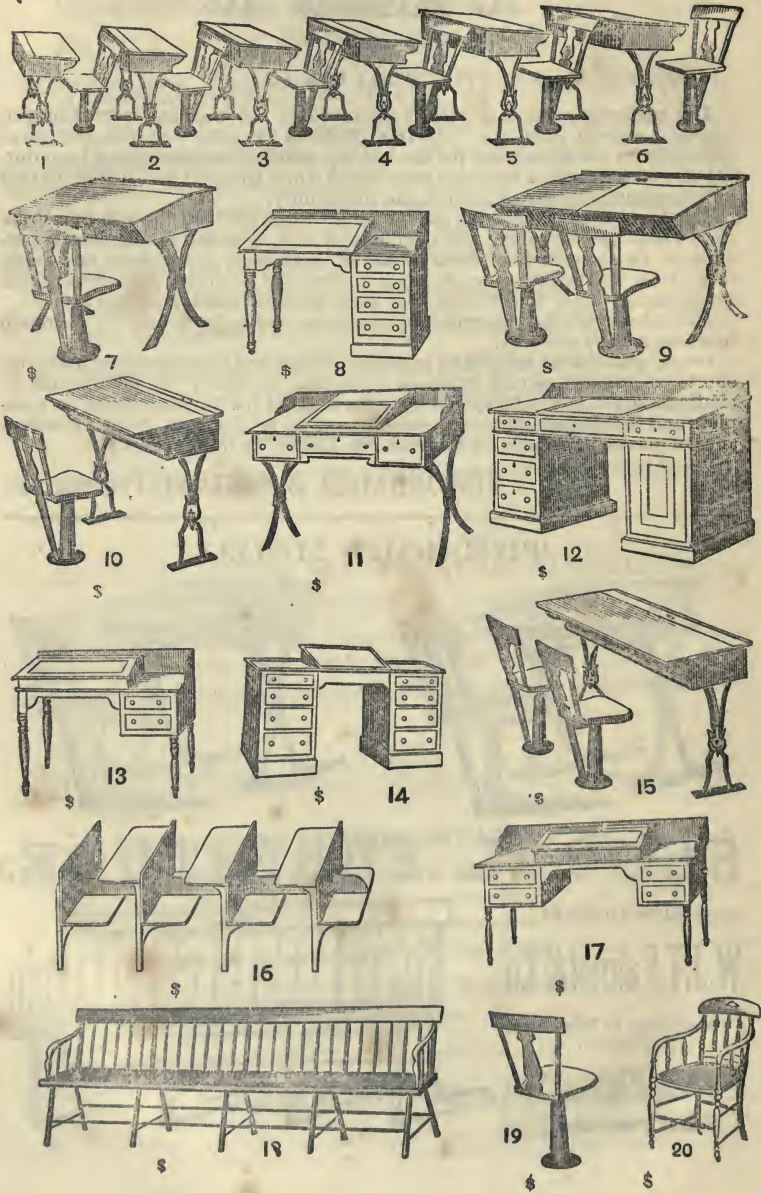
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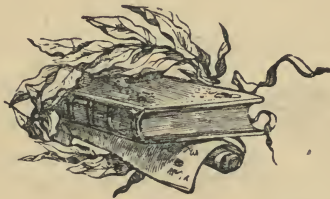
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COMMON ERRORS IN ORTHOEPY, ORTHOGRAPHY AND SYNTAX.

BY A. F. HILL.

I—ORTHOEPY.

If we wish to preserve the English language, we ought to speak it correctly at all times. It is especially the duty of learned men, to whom others naturally look for instruction, to frame their sentences and pronounce their words with scrupulous care. A mongrel language, like ours, is difficult to learn; there are so few rules to guide the pupil, and so many exceptions to the rules we have. The only way to acquire a proper knowledge of the language is to study it with great care, and endeavor to become familiar with it, word by word. We have several able authorities to guide us in our pronunciation, and he that follows either—whether Webster or Worcester—can not go far wrong. Webster's is the generally-recognized standard dictionary in the public schools of this country, and I think, for that reason, should be consulted by all. Men of learning, however, differ on this subject—some following one author, some another, and some divide their patronage among all; while others still, men of deep research, criticise the dictionaries themselves, and adopt a style of their own—all of which causes some confusion in printing offices in the matter of orthography.

Our ablest and most learned men are too lax. They are too ready to give way to *custom*; and thus, after spending their whole lives in seeking out the truth, give way to blind, ignorant, illiterate *custom*, and accept it as a law-giver. If we allow *custom* to have its way, why canvass the whole history of letters and rake up the dead languages, with many weary hours of toil, in

order to arrive at the true orthography and orthoepy of words? Better take things easy, and accept *custom* as our grammar book and dictionary at once.

But my present object is only to give a few examples in each division of the subject, for the purpose of awakening the reader's interest in the matter, and inducing him to seek knowledge for himself. One is not so apt to forget instruction which he has acquired by means of deep application and careful research.

Startling as it may seem, scarcely three-fourths of the words used in ordinary conversation are correctly uttered by the majority of persons. This may look like an exaggeration, but when I have mentioned a few classes of words—and there are hundreds in each class—that are habitually mispronounced, all doubt as to the truth of the statement will be removed.

Let us begin with the vowel A: There is a class of words ending in *ance, asp, aff, ask, ast, ass* and *and*, such as *lance, grasp, staff, cask, draft, last, glass* and *command*, that are never pronounced correctly by the masses. Authorities differ as to the proper sound that should be given these words, but they are usually pronounced in a manner defying *all* authority. In such words Walker gives the *a* its short sound, as heard in *cat*; but Webster gives it a sound about half way between that heard in *cat* and that in *arm*. The learned of New England always give these words the correct sound, according to Webster; but the masses, in attempting to imitate them, give the *a* too broad a sound, and, in fact, allow it to merge into the sound heard in *arm*. On the other hand, nearly all the inhabitants of New York, New Jersey, Pennsylvania and the Western States, and portions of the border Southern States, in carelessly attempting to give the *a* the short sound, according to Webster, give it a kind of drawling, nasal sound, which is nearly, if not exactly, that heard in such words as *care, bear, fair*, etc. They also give this same unauthorized sound to a few words which should take the full Italian sound of *a* as in *arm*, such as *calm, balm, half, path, laugh*, etc.

We also find, in the rural portions of the Middle and Western States, a disposition to pronounce such words as *charity, carry, marry*, etc., with the sound heard in *arm*; whereas all such words, the *r* being followed by a vowel, should take the short sound of *a*, as in *cat*. Such words as *cart, harmful*, etc., of course, have the Italian sound, as heard in *arm*, because the *r* is followed by a consonant. In the same regions, one's ears are shocked by hearing them pronounce such words as *merry, berry, cherry*, etc., *murry, burry, churry*, etc.

We now arrive at the vowel O: Perhaps this round, good-natured, cheerful letter is more abused than any other of the alphabet. It seldom gets justice, either in the city or country, except among the most erudite persons. Such words as *horrible, majority, sorry, cost, lost, on, gone, hospital, hostility, conquer, con-*

gress, coffee, coffin, and a host of others of these several classes, every one of which should be pronounced with the short sound of *o*, precisely as heard in *hot, cot*, etc., are almost universally pronounced with a broad-mouthed, uncouth sound, as though they were spelled with *au* instead of *o*, thus: *haurrible, caust, hauspital, caunquer, caungress, cauffee*, etc., etc., etc. These mispronounced words are so multifarious that it is impossible, in my limited space, to mention even all the classes of them, much more the words themselves. Look at your dictionary, if you have one; if you have not, get one. Webster's Unabridged is an inexhaustible mine of knowledge. However, take your choice.

I will now call your attention to a few words in which the letter *u* seldom gets the correct sound. Such words as *duty, tune, latitude*, are nearly always incorrectly pronounced. The generality of persons—in fact, almost all, except the learned—pronounce these words as though spelled *dooty, toon, latitood*. Now, how would it sound to say *virtoo*, instead of *virtue*; *rebook*, instead of *rebuke*; *fortoon*, instead of *fortune*; *natoor*, instead of *nature*; *refoose*, instead of *refuse*; *poor*, instead of *pure*; and *ooseful*, instead of *useful*? Yet there would be just as much propriety in it. In all such words as *duty, due, tune, latitude* and *undue*, the *u* should have precisely the same sound as in *virtue, useful, rebuke*, etc. Don't forget it.

It is indeed important that you should examine your dictionary, and learn the origin and derivation of words. Words introduced into our language from the French, and spelled with *ou*, should always be pronounced as *oo* in *root, school*, etc. Thus, *route*, a way, being a French word, should be pronounced the same as *root*. Yet, except among the learned, it is always pronounced the same as *rout*, to scatter—that is, in this country. Charles Dickens alludes to this in his "American Notes." In England it is pronounced correctly, and it must have grated harshly on his ears to hear it pronounced *rout* here. I do not pretend to say that, in the abstract, the English are more correct in their orthoepy than we—their very haitches cry out against such an assertion. But so far as the word *route* is concerned, they are correct and we are not.

In Anglo-Saxon words, however, the *ou* properly has the same sound as *ow* in *plow*. For instance: *rout*, to disperse or scatter, *ground, found, mound, wound*.

Apropos of the word *wound*—a genuine Anglo-Saxon word—how inconsistent it is that many of the people of this country, while they pronounce *route*—a French word—*rout*, give it the French sound and pronounce it *woond*! A year or two since, I thought *custom* was about to settle on the latter as the only lawful pronunciation; but I am happy to observe that the majority of learned and intelligent men have stood out pretty boldly against this innovation, and I think the word will yet be uni-

versally pronounced *wound*, as it should be. If we pronounce *wound woond*, we may, with equal propriety, say *groond* for *ground*, *soond* for *sound*, and *foond* for *found*. How would it *soond*?

II—ORTHOGRAPHY.

There is no clearer mark of very limited knowledge—not to say of *ignorance*—than bad spelling. This may be regarded as a *rule* with few exceptions. If you receive a letter which begins “*Mi deer sur*,” you are not likely to deem the writer an intelligent man, I care not how excellent the handwriting, or what the correspondent’s reputation for business tact. By all means learn to *spell* correctly. Orthography is more important than orthoepy, for words merely uttered disperse themselves in the air and are heard no more, while what is *written* may remain to testify of the writer’s learning or ignorance a hundred years hence.

Our alphabet contains twenty-six letters, which are more than sufficient to spell all the words we are able to articulate. The word “alphabet” is derived from the first two letters of the Greek, Alpha and Beta, answering to our A and B, which is all I will say on that point, as quite an essay—a book, in fact—might be written of the English alphabet and its history.

The present essay—if it rises to the dignity of the title—is, from its limited space, necessarily incomplete. To be complete, it should be quite voluminous. As stated in my remarks on orthoepy, I can here give but a few examples, leaving to the reader and his dictionary many hundreds of words I should like to notice.

A gentleman of some learning recently remarked to me that he was still occasionally puzzled to know how to spell words ending in *eive* and *ieve*. Until within a few years, I was subject to the same little vexation. On one occasion I took up the dictionary, carefully examined all the words of that class I could think of, and had the happiness to discover what I believe to be an infallible rule for the spelling of such words—a rule to which I have never remarked any exceptions. It is this:

“When the syllable containing the diphthong begins with the single consonant *c*, as in *receive*, the *e* precedes the *i*, thus following the *c*; but in all other cases, such as *grieve*, *believe*, etc., the *i* precedes the *e*.”

The rule is, of course, equally applicable to the derivatives of such words; for example: *receipt*, *conceit*, *belief*, *grievous*, *mischievous*, etc. Surely it will not be difficult to remember this. Do not forget that the *e* follows the *c*. [True, generally—but we have not the *leisure* to find many exceptions.—ED. TEACHER.]

There are few persons, who can spell at all, that do not know how to spell such simple words as *travel*, *shovel*, *bias* and *worship*; but many are at a loss as to the proper orthography of their derivatives—*traveler*, *shoveling*, *biased*, *worshiper*, or *unshipped*—

whether two or only one *l*, *s* or *p* should be used. Webster gives a most excellent rule in this relation, and it has but few exceptions. His rule is, in substance:

“When another syllable is added to a word, the final consonant must not be doubled, unless the accent is on the last syllable.” Thus, *cavil*, *caviling*; *parallel*, *paralleled*, are examples of words in which the final consonant—in these cases *l*—is not doubled; but in such words as *remit*, *expel*, etc., the accent being on the last syllable, the final consonant must be doubled when another syllable is added, as *remitted*, *remitting*. *expelled*, *expelling*; otherwise, they might be pronounced *re-might-ed*, *re-might-ing*, *ex-peeld*, *ex-peel-ing*, etc.

There are a few exceptions to the rule, as I remarked, and there are excellent reasons for such exceptions. *Grav-el-ly* is one of the exceptions. If it were not, it would be spelled exactly like the adverb *grave-ly*, and the two words would become confounded.

Whenever you refer to a word in the dictionary, look at its derivative; it will materially assist you in remembering how to spell it. For example, the word *extravagant* is derived from the two Latin words *extra* and *vagans*. If you remember this you are not apt to forget and spell the word *ex-trav-e-gant*, as I have seen it spelled.

The word *deleble* is derived from the Latin word *dele*, to erase or expunge, and hence its orthography; but on the word *in-deleble* I must beg the privilege of falling out with Webster. He, without assigning any reason in the world for such an incongruity, spells the word *in-del-i-ble*. So far from giving any reason why this should be, he remarks, in a note under the word, that it was formerly written *indeleble*, and that such spelling accords with the etymology of the word. He gives no reason for the change, as I remarked; but here I fancy I see a trace of the broad, awkward foot of *custom*—which simply means that ignorant persons who did not know how to spell the word, and were too indolent or careless to look in the dictionary and find out, got into the habit of writing it *in-del-i-ble*—probably manufacturers of “*indeleble ink*,” in their advertisements, etc.,—and learned men, who knew it was wrong, meekly and supinely followed.

I recently heard an anecdote of a very wealthy merchant of New York, who had locked his safe with one of those ingenious “combination” locks which contains the letters of the alphabet, on different attached and moveable pieces, and which, when being “set” to any particular word, and then locked, cannot be again opened unless re-set to the same word. It is susceptible of so many changes, too, that one might spend a life-time guessing at it without ever being able to open it. Having thus locked the safe, he was next day taken seriously ill, so as not to be able to go to his store. His chief clerk called on him, and asked him

what was the magic word that would enable him to open the safe. The merchant informed him that it was "Boots." The clerk tried it, but it would not open. He then tried several other ways of spelling "boots," such as "boutes," "bootts," "butes," etc., but without success. Returning to the merchant, he told him he could not open the safe, and asked him how he had spelled "boots." Much to his enlightenment, the gentleman replied: "Why, *b-u-t-s*, to be sure!" Here, then, is *custom's* first raid on "boots." Let but a few other merchants spell it *buts*, then a few others, who think rich merchants pretty good authority, then a newspaper reporter, who feels it his duty to follow *custom*, then we will all respectfully fall in line, with *custom* at our head, and the orthography of "boots" will undergo an entire revolution.

I will now briefly mention a few words that are spelled wrong every day—words which it is just as easy to spell right as wrong, if persons would only take the trouble to ascertain which is right. *Practice*, whether as a noun or verb, should always be spelled the one way, *practice*, and never *practise*. It is just as easy to make a *c* as an *s*, and it is just as easy for the compositor to set up a *c* in type as an *s*. *Criticise*, *advertise*, *apprise*, and many other words of similar ending, should never be spelled with a *z*, although they frequently are by persons who do not know any better. Here, again, it will require some research to enable you to know when to use the *z* and when the *s*. *Stigmatize*, *dramatize* and *authorize*, for instance, are properly spelled with a *z*. Again let me say, consult your dictionary. *Ax* should never be spelled *axe*; *adz* should not be spelled *adze*; *wintery* should never be spelled *wintry* (except by poetic license); *offense*, *defense*, etc., should not be spelled *offence*, *defence*, etc. *Specter*, *saber*, *theater*, *maneuver*, *meager*, *scepter*, *center*, *miter*, *accouter*, and a host of similar words, should end in *er*, as spelled here, and not in *re*, which termination has been repudiated by Webster, and is fast going out of use. Please remember.

III—SYNTAX.

The four branches of grammar are orthography, etymology, syntax and prosody. Orthography treats of the spelling of words; etymology, of their history and derivation; prosody, of their measure and accent; while syntax, the branch about to be considered briefly, treats of arranging words in sentences.

I have already alluded to the sad defects that exist in the orthoepy and orthography of many who speak the English language; and I regret to say that the number of persons who speak without any regard to syntax—who habitually speak incorrectly and ungrammatically—is truly astounding, as well as alarming, to one who has any love for literary law and order. There is not one person of every hundred in our whole broad land who will converse one minute without using an ungrammatical ex-

pression. When we remember that we have a language which we should like to preserve, so that future generations can read and understand what we may write, this is a shocking condition of things. I have noticed a deplorable lack of correct language among merchants and other business men, who take no time to learn anything not allied to dollars and cents, and who attempt to speak as they hear others speak.

How frequently we hear the expression, "It doesn't concern you or I." Here the personal pronoun "I" is put in the objective case after the verb "concern." How would it sound to leave out the words "you or," and say, "It doesn't concern I?" Yet it would be just as correct. "It doesn't concern you or me," is the proper form. Without some knowledge of grammar, it is impossible for any one to speak correctly. No one can even do so by imitating the speech of others whom they suppose to be learned. To know where to use the pronoun *me*, and when the pronoun *I*, one *must* understand the rudiments of grammar.

We often hear this expression: "You and me will go." Here the *you* and *me* are in the nominative case, while *me* is a pronoun that should only be used in the objective case. Leave off the words "you and," and try how it will sound—"Me will go." Does it not remind you of the imperfect English of a North American Indian?—"Me big Injun, ugh!" "You and I will go" is proper. If a man ever looks ridiculous, however, it is when, in affecting to speak correctly by imitating the style of learned men, he speaks *in-correctly*, as in the former instance. If you cannot with some certainty speak properly, don't try.

"One of us *are* going" is another example. We frequently hear this and similar expressions. Persons either with a very limited knowledge of syntax, or with none at all, here attempt to introduce a very elegant plural verb, *are*, simply because it follows a plural pronoun; but they are not aware that the pronoun *us* has nothing to do with it. "The nominative case governs the verb," is a very important rule in syntax. In this sentence the singular verb *is* should be used, because it is governed by the singular noun "person" (understood). "One person of us *is* going," will make it a little plainer. Leave out the words "of us," and how would it sound to say, "One person *are* going?" "Two of us *are* going" would be correct, because the governing noun would no longer be singular. "All of us *are* going" would be correct. "One of the horses *are* loose" is *not* correct. "One of the horses *is* loose" is proper. "Two of the horses (or all of the horses) *are* loose" is correct.

"Who did you vote for?" "Who have we here?" "Who did you get that from?" "Who does that belong to?" and "Who did the bullet strike?" are all execrably incorrect. In all these cases the relative pronoun beginning the sentence is in the objective case, and should be *whom*. "Whom did you vote for?" Here it is in the objective case after the preposition *for*. "Whom

did the bullet strike?" Here it is in the objective case, because it is the object of an action. The action is expressed by the verb "*strike*." The other examples are equally clear.

"I don't like *those* kind of shoes." How often we hear this expression, and yet how frightfully incorrect it is! *Those* is plural, and yet here refers to the singular noun *kind*. "I don't like *that* kind of shoes" is proper. How would it sound to say, "I don't like *those* hat;" or, "I don't like *those* horse?" Yet it would be just as proper.

"Where *be* you?" I have often heard this inelegant phrase in the several New England States. Quaint and uncouth as it sounds, it is not strictly incorrect. Still I do not sanction its use. "Where *are* you?" is so superior, is just as easily said, and costs no more breath. New England, I beseech you, repudiate this vulgar and ludicrous expression! You may say that, because it is not strictly ungrammatical, I should not make this request. Well, to *be* means to exist; how would this sound?—"Where *exist* you?" "How old *exist* you?" "Where *exist* my gloves?" Perfectly grammatical, but astonishingly eccentric!

Another great defect in the dialect of the New Englanders is their cold and shameful neglect of the letter *g* in the termination *ing*. "Where *be* you goin'?" "I'm writin';" "Be it rainin'?" are examples. To make the matter worse, they pronounce the *in* as though it were spelled *een*; thus: *go-een*, *writ-een*, *rain-een*, etc.

I do not intend this for *badinage*, and I hope it will not be so received. Consider him your true friend who tells you of your faults, in order that you may eradicate them.

◆◆◆

THAT "OBJECT SYSTEM" AGAIN.

"The object system," says the doubter, "has been run into the ground long since." So it has, by himself and family, *perhaps*, if they have never taken the time to investigate its principles, and have had neither the energy, moral courage nor patience to apply them; and may possibly not know exactly what they are doing while so jubilant over the burial. If it has been often trampled under foot, and crowded below the sod, it seems to possess the immortal spirit of the Phoenix, and as often rises from the dust; and we trust it to rise yet in this State, if it has suffered any ignominious burial here.

I do not propose to relate the history of the origin and progress of this system in Switzerland, its general adoption in Germany and Prussia, its introduction in England, and its patronage there by the Government; or to state the principles as embodied in the thirty volumes of its founder, Pestalozzi. All this has been done many times over by Mr. Barnard and other journalists. I only intend to give some facts regarding its advent and

advance in our country, and let these facts tell the story, if it has failed, sadly or not.

About ten or twelve years ago, Mr. E. A. Sheldon, now Superintendent of the Oswego Public Schools, struck by some remarkable results of Pestalozzi's teaching, as given in Barnard's journal—the most complete educational journal in the United States—determined to introduce the methods, by which these results were obtained, into his own school. He accordingly began by giving object-lessons on animals, and other objects, using the sketches and criticisms and suggestions in Barnard's volumes, taken from the various European schools, where this system was in use. He worked in this way for several years, depending on the *book* alone to work out the system, not a step of which had he ever seen in practice. Then, in connection with Messrs. Wilson & Calkin, we think, he tried to develop the system by their charts and books. He found that neither of these plans satisfied him, or gave any such results as he had expected and desired. The teachers would soon lose interest, if, in fact, they ever had any awakened, and the lessons became monotonous, and in many cases failed utterly. It was evident that "the breath of life" was not in these methods.

In the dark and in doubt, Mr. Sheldon wrote to London for light. The Director of the Home and Colonial Training School wrote him that he could never succeed by *books*, simply, in introducing the object system into any school—what, in fact, his five years' experience had already taught him. He must have the living teacher before the pupils and the teachers—the voice, action, soul of one who had been completely trained in the system. Mr. Sheldon imported from that institution one with an experience of fifteen years. She spent a year and a half in Oswego, training teachers, systematically and thoroughly in the methods as used in London. Mr. Sheldon himself, putting off the dignity of Superintendent, and like the great Peter becoming a pupil in public, that he might the more effectually carry out in future what he had so long been trying to do alone and in the fog. Under his influence, a few of the teachers in Oswego made up a class, joined by a few from other places, New Jersey sending a candidate through the influence of Professor Phelps.

So, while all that class of teachers who had run this system into the ground, and proved it false—a humbug, and innovation not to be tolerated—were rubbing along in deep and venerable grooves, doing all things in accordance with an "apostolic succession," and the communities who had hooted at it were drifting conceitedly over quiet surfaces smoothed with a patriarchal oil, the leaven in the meal was working. Three or four self-sacrificing souls, with brave hearts, full of hope, because full of truth, fired with enthusiasm in a good cause, and certain they were on the right track, devoted, patient and persevering, were

working nobly in a little school-room in Oswego. And they worked to some purpose, as single souls have often done before. They were working out the Object System for the United States, taking it from a living representative; from her voice, from her whole action, from advice and counsel in the class, and advice and counsel in private, from lectures and from exercises, subjected to an ordeal of the severest criticism. And they worked it out.

It was a success, and the day came for a trial. A class had been well trained, and were to show what children could do in six months when trained, not according to the law of the Medes and Persians, but after Nature's models. And they showed it in all that kind of knowledge that comes directly from developing the perceptive powers, in ways too numerous to catalogue here. It was a quiet exhibition, but a very effective one—like the results from a law of nature. There had been no parade, no cards, no trumpeting, no packing. The few intelligent friends there, familiar with ordinary examinations of primary classes—and capable of judging, were delighted—astonished—radiant with admiration. It was settled that day in Oswego that the Object System was all it claimed to be, and a success. It was soon whispered that there was a wonderful primary school in that village. "Some believed, others believed not," Pharisee like. But presently in other places it was known that out of Nazareth had come a good thing; and pilgrimages began toward the humble village—toward that Primary "School of the Prophets." And so it came to pass that while the rather slow coaches, blazoned with the great-grandfather's coats-of-arms, were rumbling in their accustomed ruts, good tidings were carried from this little Bethlehem Judea to one town and another, and to far places.

When Mr. Sheldon began this work, he had to resist the same opposition that had existed on the continent and in England; opposition from teachers, from parents, from trustees, from grammar masters, from committees, from county superintendents and State superintendents—opposition that will always exist where the TRAINED TEACHER does not *first* go. He had to sustain the effort by personal example, and mainly alone—sustain it not only morally, but to a certain extent financially. Now, how is it? The tables are turned. Soon after the first successful trials, the tide set the other way. The system was put into every school under Mr. Sheldon's control, and they are now holding the front rank. This year, the State gives \$20,000 to sustain his pet school in Oswego. *Then*, the State Normal School of his own State opposed him. *Now*, it is a convert, and he has been invited to reorganize it on his own principles, and at a very liberal salary. *Then*, New Jersey opposed the system, Mr. Phelps only, of the State Normal School, fighting for it. *Now*, the conservative Principal of that school is a convert, in

spite of himself, and the State is an ardent supporter. Then Massachusetts opposed him. Now "Athens," the most conservative spot on the globe, out of Japan, has sent to "Nazareth" for a teacher. Worcester and Northampton have followed suit. Ohio has drawn "at sight" on Oswego, and has been "honored;" Indiana has followed in the wake; Maine, ditto; Minnesota, ditto; and distant Kansas has lifted up her voice, saying, "come over and help us." One hundred and fifty thousand dollars has been spent upon a building for a State Training School in Indiana, to be organized upon the Oswego plan. One half a million of dollars has been expended on schools in New York State, to advance this system, and two hundred thousand dollars more is soon to be expended for the same purpose. The Oswego Training School is now the largest in the State, or United States, and gaining in popularity daily. "There is now," writes Mr. Sheldon, "no opposition from any quarter, and the demand for teachers from our school is very pressing; we cannot meet it."

And *this* is the system that was run into the ground, long ago. Verily, it has sprouted freely, and needs pruning by some husbandman of the established vineyard.

The Object System is a bore—a humbug—a nuisance—says my Lord Conservative. Well, a committee was appointed some years since to examine into its merits and report. The committee was composed of men highly educated, liberal in sentiment, and not at all committed. They *did* examine into it thoroughly, in loco, and tested it by all means in their power, spending several weeks in the duty; and they did not report it a humbug. On the contrary, if we remember rightly, they reported it to be one of the most sensible, natural, and rational systems known. We shall believe the committee.

And now I desire to press a point. Shall we have a true object system in California, or not? With our well-earned reputation, shall our State Department drag any longer on this point? Have we not tried teaching a system by books, about long enough? Did not Mr. Sheldon spend five or six years in that kind of experiment, and fail? Have not we spent more time than that, and failed, signally? Shall we go on in the dull routine eight or ten years longer, disgusting ourselves and pupils by trying, desperately, to teach something we do not know *how* to teach? After an Eastern public has been magnetized into a consciousness of TRUTH, so as to marvel greatly how they could ever, in their senses, oppose it—had we not better start anew with the simple truth? With a plan worked out—with a living embodiment of that plan, incarnated before a class of receptive minds, ready to absorb it, to give out again in the same form? Seven years ago we—occupying a subordinate position—wrote to Mr. Sheldon our admiration of his work, and our faith in the system. We wrote an essay on the system which we were al-

lowed to read before a State Convention. It did not make much of an impression, we think—probably from the weakness of the logic, or some other weakness. We also wrote to London, and obtained the works used there, (which we paid for). We have used them as others have done, with like results, viz: the system in a nebulous state—all the while—no resolution into star points. The Directors of the London Training School offered to send to San Francisco an experienced teacher to teach a true system, at much less expense than the State and city were then paying to teach a wrong one. We laid the matter before the State Superintendent, and urged that the teacher be engaged. Our effort was fruitless—none was sent, of course. The system has never been taught properly in this State—and never will be, until a trained teacher is employed.

We have never had a Training School or a Model School in this State, worthy the name, taking such a school as the Oswego school or several of the English schools, as a type. The reason is, we have not had the teachers to organize one. We could have had one, a first-class, as I have said, seven years ago; but did not. We could have had suitable ones almost any time since, but there have been reasons why we have not, just as there are reasons now, why, every day, we see teachers placed in good positions who are totally unfit to fill them, and good teachers rejected. Certain persons, proposing anything to the powers that be, obtain what they ask—others do not; and there is the difference. Certain persons, proposing to put a first-class teacher into the field to organize a first-class Training School at less expense than was being paid for a very bad one, would have obtained what they desired. We did not obtain it, and we stand to-day where we did seven years ago, with the exception—we have an experience that teaches us what we cannot do.

There has been no true development here from an object system, of course; no growth, normally, because no vitality, and no true conditions for such growth.

There is another golden opportunity offered at this moment, and we desire to see if it will be seized, or spurned. It was offered to the City Department, dallied with, and lost—*ut semper*. Will the State throw it away also? The only teacher in the State, capable of organizing a Training School, and carrying it out on the true plan—is now on the ground. Will the school be organized? We shall see.



WHEREVER it is possible, maps should be hung on the north side of the room, for the reason that the top of a map is associated with the north, the right side with the east, etc. For the same reason pupils who are studying maps should be seated so as to face the north.

ETYMOLOGICAL REVERIES.

BY PROF. L. O. REHRIG.

As their name indicates, the following papers are not intended to be in method strictly scientific: they are *reveries*.

Having been forced to dabble more or less in the languages of many peoples, in our wanderings over the world, a swarm of words buzz around every object. We shall divert ourselves with them,—make words our playthings, and lying back in our easy-chair, blow them into the air about us like so many soap-bubbles. Is it not in dreams, or in the abandon and spontaneity of play, that glimpses of hidden truth often come to us? Perhaps in these “Etymological Reveries,” we may make happy guesses that will point the way to fruitful research.

I. *Negation*.—Choosing for our present subject the forms of *Negation*, in various languages, let us begin with the language most commonly known among the educated.

In Latin, *not* is *non*, which by dropping the final mutable liquid *n*, is reduced to the syllable *no*, as in *nolo*, etc.; we also have *ne*, as a prohibitive particle, appearing likewise in *nemo*, *nefas*, *nequeo*, *nequam*, etc.; and likewise with *ni*, as in *nisi*, *nihil*, *nihilum* (by apocope for *nehilum*). It appears reduced even to the mere letter *n* in *nullus* (the negative of *ullus*), *nunquam*, *nuspiam*, *nusquam*.* It is also expressed by *nec*, (which, despite of the opinion current among Latin scholars, we cannot, for a multitude of reasons, view as identical with *neque*).

It is also met with under the form of *neg*, as in *nego*, *negatio*, and in similar derivatives, and in *negligo*. The negation *nec* or *neg*, is, doubtless, of the same origin as the radical syllable of the verb *nec-o*, to kill, and *nex* (for *nec-s*, *nec-is*), death. In the Egyptian symbolic writing, *negation* was expressed by two human arms spread out as if to hinder a person from passing on his way; thus indicating an obstruction, an obstacle, or, generally, the idea of counteraction, opposition, and—by extension of the same idea—injury and damage. Thus *neg-o*, *nec-o*, and *noc-eo*, which latter signifies to *injure*, to *hurt*, coincide in their fundamental meanings as well as in their external forms; for if we call to mind the interchangeableness of the guttural letters, and the indeterminate, fluctuating nature of the vowels, we shall see no *essential* difference between *neg*, *nec*, *noc*, they all being reducible to the consonantal framework of formula *n—c*.

This *n—c*, or, in other words, the *NEG* or *NEC* of the negation, the *NEC* of *nex* (*nec-s*) death, the *NOC* of *noc-eo*, to injure, to hurt,

*The same occurs, as the reader may recall, even in our own language, if he will but consider words like the following—viz., *ever* and *never*, *either* and *neither*, *ought*, (= *ought*) and *nought*, *one* and *none*; which negative forms were in the Chaucerian period written, moreover, so as to show at the first blush *ne* in combination with the affirmative forms; as, for example, *ne ever* = *n'ever* = *neqer*, etc.

reappears in the Latin word *nox*, which means *night*: For, the word *nox* stands for *noct* (with *c*) like *nex* for *neccs*, etc.* And in the genitive and other cases of declension, and all the derivatives, we meet, indeed, not with *nox* (night), but with *noc-t*; as, for instance, *nocturn*, etc. Here *noc* (of *noceo*) to injure, to hurt, and *noc* (of *noct*, *noct*) are seen to coincide. But they coincide even as to their very forms with *x*, viz.: *nox*, night; *nox-a*, damage, hurt, injury; *nox-a*, punishment; *nox-ius*, guilty, which latter signification is authorized by Tacitus: “Conjuracionis *noxius*,” and by Livy: “Multos *noxios* judicavit.” We also meet in the Latin of different periods with *nox-itas*, *nox-ialis*, *nox-iosus*. And as many modern languages, even though they be greatly mixed and much altered, unconsciously, and by an unerring instinct, as it were, often tend to produce words which are related and connected in their *outward forms* quite as much as the *ideas* for which they stand, the French words *nuit* (night) and *nui-re*, *il nuit* (to injure, to hurt), might justly be referred to this head.

As to the relation between *nox* (night) and *nex* (death) (they being both reducible to *n-x*), we quote Horace: “Omnes manet una *nox*,” and, elsewhere, “Jam te premet *nox*.” So Virgil: “In æternam claudunter lumina *noctem*,” where *nox* constantly means the same as *nex* (death), either violent or natural death. Touching all other coincidences of *night*,—with *death*, *damnation*, *wintery coldness*, *mental darkness*,—we refer, among others, to the following passages—viz.: *Nox* (night) means *Hell* in Virgil: “Ire per umbram *noctemque profundam*,” and again: “Descendere *nocti*.” Hell and the God of Hell, Pluto, were, by the ancients, placed under the earth, where no sunbeams can penetrate to warm or light the deceased. The Latin expresses it by *nox*, implying the coldness superinduced by the temporary absence of the sun. “*Noctem hiememque ferens*.” The absence of an intellectual light, or mental darkness, folly, and ignorance, are also expressed by the Latin *nox*, as in Ovid: “*Tantaque nox animi est*.” *Nox* being the privation of light, and connected with the ideas of calamity and distress, has also been instinctively introduced with that meaning into language; as we read in Cicero, for instance: “*Sic effusa, reipublicæ nox esset*.” *Night* is, in language, frequently connected, as to its radicals, with those of *negation*, as we have already seen. Is not *night* really a negative manifestation of things around us? Not only in the Indo-European, but in other and quite heterogeneous languages, as the Schemitic, the Tartar-Finnish, etc., we meet with this coincidence. Thus, in Arabic, Hebrew, Chaldaic, etc., the negative, (no, not) is expressed by *la* and *lo*; while *night* is denoted by a word forming a double negation. as it were, by a repetition

*Priscian tells us: “X duplicem loco c et s, vel g et s, postea Grecis inventam assumpsimus, ut duz, duclis (pro ducs), rez, regis (pro regs) paz pacis (pro pacs) paciscor, pacificus,” etc.

of the radical *l*, thus: *la-la*, *lai-la*, *lail*. In any case, *la*—(generally *l*) is the essential part of the word *night* in the Shemitic tongues. And in a similar way the same *la*, *lo*, enters into the verb denoting the idea of *hiding*, *covering*, as in Hebrew *laat* and *lot*. This very coincidence of the *negation* with *night*, so far from being regarded as mere chance, is, on the contrary, and in an unquestionable manner, to be met with again in a very different class, that of the Central-Asiatic or Tartar-Finnish languages. Thus, in Turco-Tartar, we find *tunkil*, *not*, *no*, and *tun*, *night* and *tun*, *evil*. And here we may suitably mention the English word *night*, in the same way, the German *nacht* (*night*) and *nicht* (*not*); both being reducible to their common foundation or rudimental form *n-cht*. That they stand in precisely this relation with each other, is clear from the double fact—1st. That the German *ch* corresponds to *gh* in many cases, as Ger. *licht*, Eng. *light*; Ger. *sicht*, Eng. *sight*, etc. 2d. That the German often has *a* before *ch*, where the corresponding word in English takes *i* before the *gh*; as, for instance: Ger. *macht*, Eng. *might*, etc., and thus, in the case under consideration, Ger. *nacht*, Eng. *night*. As *night* is the absence of light, and accordingly, darkness, so we see the word *dark*, or *black*, likewise related to the radicals we treat of. *Black* is called in Latin *niger* (*nig-er*), which *nig* reappears precisely the same in the English word *nig-ht*, and is thus related to *neg* in *neg-ation*, etc. The English word *night*, the Latin *niger*, the German *nicht*, might be reduced to their simplest forms (agreeably to the common fact that gutturals are often lost), to *ni*, which we see in *ni-si*, *ni-hil*, etc., while the more especially elementary form of *ne-(g)o*, *ne-c*, is *ne*, which we find in *ne-mo*, *ne-quam*, etc., and that of *noc-eo*, *nox*, etc., is *no non*, as is seen in *no-lo*; so that the *negation* is, as it were, the primitive and fundamental idea of *death* (*necs* or *nex*, *neco*), *darkness*, (*nig-er*), *night*, etc., which all grow out of it by means of the addition of gutturals.

But as *noc-s* and the Greek $\nu\nu\tilde{\xi}$ (= $\nu\nu\chi\tilde{\xi}$), *night*, refer quite as well to the ideas of *hiding*, *enveloping*, *including*, as the above-mentioned *laat* and *lot* did in Hebrew, so the Latin word *nucs* (conveniently written *nux*, and meaning a *nut*) can be brought into the closest relation with it. While *noc-s* (*nox*) means *night*, *nuc-s* (*nux*) refers, in its primitive sense, to the ideas of *enclosing*, accordingly *darkness*—a kernel involved and hidden, etc. We here merely advert to the words derived from *nux*—viz.: *nucleus*, and to *enucleate*, which means to *elucidate*—to render *lucid*, to bring to the daylight out of the darkness, to throw *light on*, etc.

Now, if it be asked how the ideas of *negation* and *evil* were or became primitively connected, we answer that the universal order alone is *Affirmation*, or that all which is in conformity with the Divine plan of creation is necessarily affirmative. Evil as a *striving against* the created order of things, became, as it were,

an attempted *lessening*, or *diminishing* of it, a *breaking*, an *infraction* of its laws, as we intuitively express it in language. And when we consider and investigate the words expressing *evil* in different tongues, what do we find? Let us again begin with the Latin. Here we see the idea of *evil* expressed by *mal-us*, *mal-e*; *us* and *e* being mere terminations, the only important part of the word is *mal*, just as it appears in French—*mal* (ill or evil). As vowels are not fixed, but in a continually fluctuating state, *m-l* is the real Romance formula for *evil*. This we have a right to suppose is connected with the series of ideas of *lessening*, *diminishing*, *small*, *little*, etc. And indeed, *m-l* reappears in the Slavonian languages in *mal-o*, small, little, in *mal-tchik*, a hammer or an instrument which reduces a thing to smaller parts. In the Germanic group we meet with *m-l* in *mal-en*, to grind, which likewise implies the idea of lessening, breaking the grain into *mel* or *me(h)l*, *meal* (*flour*). And this is so little a mere hypothesis that, in French, *mal* has even in some instances the meaning of (s)mall, little, as “*pas mal*,” not little, not a few; a fact that every one acquainted with the colloquial French is well aware of; while, on the other hand, *bien* (well, good) means also, much, many; as, for instance: *bien des choses*, many things, *bien de l'argent*, much money, etc. Thus, as to *mal*,—smallness and evil do evidently here coincide. Something of the same nature we see in the Latin *parvus* (small), and by the so very frequent transposition of the letter *r*, *pravus* (wicked). And in Hebrew we see that TZAAR means, 1st, He is become *little*; and 2dly, *mean*, *contemptible*; also in Arabic, SAGHIR signifies, 1st, *small*; 2dly, *bad*, *abject*, *mean*. In the Tartar-Turkish of Tobolsk, KEM means, 1st, *small*; 2dly, *bad*. As we were speaking particularly of night and darkness, the color black, etc., and the radicals *nig* in night, and *nig-er* (black), so we have here again to state that *mal* (bad, wicked) reappears (as to its radicals) in the Sanscrit *malinas*, which means, 1st, *malignus*; 2dly, black, and is thus related to the Greek *melainos*, the genuine form of *melas*, black; which coincidence of wickedness and black is strongly marked, especially in the French word *noir*, as *cœur noir*, *noirceur*, etc. But even in *malinas*, *mel-* (as, *-ainos*), etc., *mal*, small, little—that is, negation, want, deficiency—seems to have been the primitive and fundamental idea; wickedness or evil, referring constantly to a want or an incomplete or negative condition with regard to absolute affirmation. And when we now consider the opposite of evil—viz., good—we see it, in many instances, most intimately related to the idea of plenitude, fulness; and thus in French, *bien* expresses *well*, and *much*, as has already been shown. And do we not also say in English a “*good deal*” for a “*great deal*,” or considerable? Goodness appearing thus, as it were, a *qualitative* greatness, just as greatness in size may be viewed as a *quantitative* goodness. And do we not speak of a GREAT man in a moral sense, which even became an epithet of

many kings and rulers? Bad, evil, denoted as we have seen, a *want*, a deficiency, and was kindred to the *negation* and its expression in different languages. Accordingly, *good* being the opposite term and referring to plenitude or copiousness, implies *affirmation*, or its expression in language—viz., the *affirmative Particle*.

Thus we see in English *well* used for *yes*; in French *bon* and *bien*. There are also languages where there is no other word for *yes* but the word *good*; and others, where *good* is the most usual affirmative. Thus in Turko-Tartar *ot*, which signifies 1st, fire, and 2dly, wood, fuel, denotes also *good*, and (with a different pronunciation but the same orthography,) is used for *yes*. In Arabic *na'm* signifies, 1st, *good, kind*; 2dly, *yes*. In modern Greek, *yes* is expressed by the word *malista*, and sometimes by *kala*. In Latin, *yes* is *sane* (adverb of *sanus*); also *sane vero* (from *sanus*, expressive of healthy, valuable, good, and *verus*, true).— [Our word *verily* comes from *verus* (Latin), true, and is used as a strong affirmation. In colloquial English, we substitute, sometimes in the same way, *pretty*, (referring to good and to beauty) for *very* (referring to truth), *pretty well*, for instance, being often almost an equivalent of *very well*; this word *very* expressing a high degree, or, what is the same, *qualitative* greatness, derived from *verus*, true.]

Besides the mutual relationship we have seen, of the ideas and terms expressive of *evil, damage, injury, death, hades, night, and negation*, we have still to add to the same series *north* and *left hand*. Thus we have in Hebrew *shemol*, and in Arabic *shimal*, expressing, 1st, *north*; and 2dly, *left hand*, which is an instance of the two being expressed by one and the same word. And the same coincidence exists in Irish, where *tuaidh* means *north* as well as *left hand*. The *north* is indeed the left, when the face is turned toward the east, as in the worship of oriental nations. In Latin, the *left* is expressed by the word *sinister*, which besides refers to *evil*. In Finnish, *kura* means *left*, and *kura-d* signifies *devil*. The coincidence of *left*, and consequently *north*, with *evil* may be accounted for by the fact, that the east being the starting point for the sun, going to the *left* is, as it were going *wrong*,—*"contra solis cursum flectens."*

On the other hand, we see there is a coincidence of *right hand* with *good*, and also with *south*, (the very opposite of north). Thus in Hebrew *yamin* means, 1st, *right hand*; 2dly, *south*; in Arabic *yaman* means, 1st, *right hand*; 2dly, *prosperous, happy*. (*Yaman*, or *jaman*, vulgarly *jemen*, is the *happy Arabia*.) Just so in Turko-Tartar, where *ong* means, 1st, *good, prosperous*; 2dly, *right hand*. In Hungarian, too, *jo* means good; *jobb*, better; and *jobbra*, the *right hand*.* The word expressing *right* is related to

*In Greek, however, *aristera*, (the better one) means the *left hand*, by an *antiphrasis*, just as the *Furies* were called *Eumenides*, and the *Black Sea* Pontus Euxinus (*eu-xeinos*).

good in many other languages, as, for instance, in German, where *recht* means, 1st, *right*; 2dly, *good*; 3dly, *law*; 4thly, *just, fair*; as from it we also derive *richtig, gericht* (judgment), *gerechtigkeit* (justice), *richter* (judge), etc. This whole chain of meanings and most remarkable coincidences might perhaps be still farther extended and developed by drawing from many other quarters of philological science.

THE STUDY OF GRAMMAR.

ON several occasions the TEACHER has criticised the current methods of studying Grammar as being unphilosophical and therefore comparatively fruitless. We maintain that Grammar ought to be studied inductively, *i. e.*, language should be regarded as the subject matter which is to be examined. In this way facts will precede principles and rules, while in nearly all our books the contrary course is pursued. The same principles apply to the learning of Latin or Greek Grammar as to English. In support of our views we quote below the opinion of eminent teachers and scholars:

“Nothing can be more certain than that the comprehension of grammar comes *after* the mastery of language; that the science of grammar, (for there is such a science, and a noble one it is), is at once abstruse and difficult, and its deeply-seated metaphysical principles are best attained by an analysis of abundant linguistic facts already appreciated. Yet what do we do? We try to build up a boy’s knowledge synthetically, by plunging him at once into a bewildering mass of intricate rules and anomalous exceptions.

“Well may Mr. Herbert Spencer speak of ‘that intensely stupid practice, the teaching of grammar to children.’ ‘Grammar,’ says Horne Tooke, ‘is among the first things taught, and the latest understood.’ Yet what happens? What is happening at this very moment to your little sons? They are being dragged through grammar as through a cactus bush—being taught in a way which always reminds me of Judges viii, 16, where it says that ‘Gideon took thorns of the wilderness, and briars, and with these he taught the people of Succoth.’”—F. W. FARRAR, Master at Harrow School.

“But a better and nearer example may be our most noble Queen Elizabeth, who never yet took Greek nor Latin grammar in her hand after the first declining of a noun and a verb; but . . . hath attained to such a perfect understanding of both the tongues, and to such a ready utterance of the Latin . . . as there be few in number in both the universities or elsewhere in England, that be in both tongues comparable to Her Majesty.”
ROGER ASCHAM.

“Already every subject dealt with is arranged in abnormal or-

der; definitions, and rules, and principles being put first, instead of being disclosed, as they are in the order of nature, through the study of cases."—HERBERT SPENCER, *Education*, p. 30.

"Rules are learned by the ear and by rote, without any digestion of the understanding; an habit is generated of accepting and using words without insight into their meaning, and of applying principles in practice without a thought of their real nature."—Prof. HALFORD VAUGHN.

"I hardly know a single scholar who is not of opinion that the common system of teaching syntax by abstract rules conveyed in a difficult style . . . is a grievous waste of time, and what is worse, a waste of the learner's energy and readiness to be taught."—E. E. BOWEN, Fellow of Tim. Coll., Cambridge.

"The learning of grammar, with a view to conform to the genius of a language, is contrary to the dictates of nature and reason; since, as was shown, it places precept before example, theory before practice. The learner must study the facts themselves, not the rules which have been deduced from them."—C. MARCÉL (*The Study of Language*, p. 126).

"Particular grammar is an inductive art; and, in all such arts, we arrive at principles from facts—the more numerous these are the more general the rules. Custom is the law of language, grammar is only its generalization. Thus is grammar made, and thus it must be learned, from the language; not the language from the grammar.

All the rules of grammar are in the written page; it is the teacher's office to bring them out, carefully avoiding abstract formulas which children understand so imperfectly and forget so easily. If the latter had previously learned the rules, they would be deprived of the exercise in observation, comparison, analogy, and generalization, to which reasoning by induction leads. Moreover, rules which apply to unknown facts, are pure abstractions, devoid of interest; whereas, the mind delights in classifying scattered notions, and discovering the reason of unknown facts.

"This inductive or analytical mode of studying grammar, similar to the intellectual process by which we arrive at a knowledge of natural laws, is the most rational and the most favorable to mental discipline. It consists in observing facts, comparing them, remarking their resemblances and differences, and afterward bringing into the same class all similar facts."—*Id.*, pp. 188, 189.

We trust that all teachers of grammar will consider the above quotations. Of one thing they may be assured, just so far as these principles are employed in teaching any science whatever, will they be truly successful. This way of teaching cannot be learned from the grammars in use; but authors will write, and publishers print, rational systems of grammar, when teachers generally demand them.—*Mich. Teacher.*

MODE OF EXAMINATION.

LAKE CITY, SISKIYOU COUNTY, Oct. 9, 1869.

EDS. CAL. TEACHER: You will find enclosed a statement or report of the results of the style of examination which I have introduced into my school.

I hold examinations in school, quarterly, and in all respects like the public, written, State and county examinations. I submit questions of the same grade as those issued by the State Board of Examination—that is, for the primary department.

NAMES.	Age.....	Reading.....	Spelling.....	Defin.	Arithmetic ..	Geography...	Grammar.....	Writing.....	Physiology ..	Philosophy ..	History.....	Book-keeping	Vocal Music.	Perfect.....	Credits.....	Percentage...	Grade.....
Jennie Ford.....	11	65	31	35	40	58	40	75	16	10	8	10	15	1000	403	41	3rd
Joa King.....	13	60	15	45	45	74	50	80	5	18	13	10	15	"	430	43	3rd
Emma King.....	9	48	5	15	5	5	13	45	5	5	5	5	5	"	161	17	
Clara Holcomb.....	11	60	30	30	5	37	20	45	7	5	5	5	5	"	254	26	5th
Ida Holcomb.....	9	65	39	50	34	60	53	60	7	10	15	15	13	"	421	43	3rd
Clara Nossinger.....	14	75	35	60	30	35	55	70	30	15	8	5	15	"	433	44	3rd
Josie Monchamp....	14	60	17	15	10	30	25	60	5	10	8	5	15	"	260	26	5th
Lizzie Wimer.....	13	55	10	20	5	20	28	50	5	5	5	5	13	"	221	23	5th
Mina Bissell.....	10	52	5	10	5	10	5	40	5	5	5	5	10	"	157	16	
Elvira Lewis.....	12	75	41	40	25	68	53	85	5	14	8	5	10	"	429	43	3rd
Hettie Powley.....	10	60	21	30	45	50	65	60	5	10	10	5	13	"	374	38	4th
Nellie Robertson....	9	50	5	23	5	11	20	45	6	5	5	5	5	"	185	19	
Nancy Wilson.....	8	45	5	5	5	5	20	30	5	5	5	5	5	"	140	14	
Jeddie Brown.....	14	60	30	40	67	60	40	70	15	20	25	5	35	"	467	47	3rd
Arthur Bissell.....	19	75	57	23	50	55	48	85	10	25	6	30	25	"	489	49	3rd
obt. Billups.....	10	65	17	35	15	45	33	50	17	10	5	15	5	"	312	32	4th
Henry Nossinger...	13	60	17	30	5	15	5	40	7	5	19	5	5	"	213	27	5th
Freddie Holcomb...	7	45	5	16	5	25	5	30	5	10	6	10	5	"	167	17	

By observing ages, you will see that the children here, though in so isolated a condition, will at least, not fall far behind those attending city schools. There is some excuse, however, for the older pupils, as we have had school here but about one year and a half.

I issue certificates of five grades, ranging from First to Fifth. Those who answer three fifths, or six hundred out of 1000, get the First Grade—thus:

600	Merits or Credits	secure	1st	Grade.
400	"	"	2d	"
300	"	"	3d	"
200	"	"	5th	"

Those who get less than 200, are said to be put in the scales and found wanting. Time devoted to examination, three days.

I have long been convinced that the common method adopted by many intelligent teachers, is fraught with more evil than the

style which I have adopted from the State Board. For instance, if the teacher submits questions to a child, those which he knows it can answer, and accordingly gives a certificate of Perfect, the results are egotism, too much self-esteem, and love of flattery on the part of that child. My plan is: rather endeavor to show children what they do not know; how much they have yet to learn; and how much they fall short of perfect in their studies.

Most teachers also hold their examinations monthly. This, too, may be considered faulty, as it does not give a pupil time to show a marked advancement. Monthly examinations, however, have the good quality of enforcing reviews often; but, by giving lists of questions of the same grade at the end of every three months, each pupil can see its improvement in all of its studies. Great care, however, should be exercised on the part of the teacher, so that the questions given each time should be different, yet of the same grade.

Yours, truly,

L. COULTER,
Teacher of Mill Creek School.

THE GROWL OF A SUBSTITUTE.

I am "nothing but a substitute," to use a familiar expression in the minds and mouths of teachers.

I do not pretend to fine writing; I cannot write an Essay or a Poem, or carry on a Debate, or a brilliant Conversation as I am informed that the lights of the profession can; but I *can* growl to perfection; and I intend to exercise my gift.

I am "nothing but a substitute," so never mind my name; it may be Miss Smith, or Miss Jones, or Miss Jenkins; perhaps it had better be Miss Jenkins, as that name would give a fine chance to those same brilliant "lights" to have a laugh at my expense—made just loud enough for me to hear, so that I may enjoy myself—poor things!

Oh! I know them! My first name is *Ann*, and I never was romantic or silly enough to change it to "Anna," or "Annie," or any other nice, "sweet" name. *Ann* I was christened, and *ANN* I will remain until I die.

As I remarked before, I am "nothing but a substitute;" and, as I am timid, and as homely as a hedge fence, I am not *that* very often, and for the same reason I am not likely to be anything else very soon.

I have heard it remarked that the school teachers of San Francisco were a very pretty set of ladies. I do not deny it, and I do not wonder at it either. If "they" knew the inside track as I do to my sorrow, "*they*" would not wonder. The truth is, a homely girl, unless her father is "somebody," does not stand a chance of a position. A pair of blue eyes, or a pretty com-

plexion, or the ability to write an Essay! or a Poem!! is all that is wanted in this city of "pretty" teachers.

People will say that I am jealous of the success of these pretty and smart ones, and that I envy them their advantages; but it is not so! I declare I glory in being plain Ann Jenkins among all their "Annies" and "Lillies" and "Minnies," with their milk-and-water faces and false curls; and as for their positions, I am living in hopes that we shall get a Director some time who is himself homely and timid, and who will see me safely in a position before he is made to resign; for if they ever *do* get such a treasure, he will not be able to stay there long.

There is one thing, however, that I *do* envy these dear, "pretty" creatures, and that is, their cool disregard of the rights and feelings of others. It just makes my blood boil in my veins sometimes, when I think of the way I am treated.

In the first place, we have to go at nine o'clock in the morning, and take our seats in the rooms of the Most Honorable Board!

I always feel as though I was some queer animal taking my position in a menagerie. There are plenty of parrots, and monkeys and popinjays up there; but I always think I look more like a giraffe than anything else, with my long neck, and my old striped dress; and the proprietors of the menagerie look at me as though they thought so too.

The tears I have choked down in that old place would water ten geraniums.

Of course I am sent out, once in a while, when there is nobody else there; and I always think myself in great luck when I *do* go; yet I then suffer the greatest torments.

In the first place if a school happens to be a couple of miles or so from the office, a poor substitute is apt to be very tired by the time she gets there; and I almost always have to walk, because I am almost always without money. But, as though it was not hard enough to walk to the place, face a class—and oh! what horrible classes I have had—work all the forenoon to keep them in order, when you know not a single name, nor a single scholar who can be depended upon; be polite to the Principal (and I declare that is the hardest part of the day's work to me); and then, when you are almost dropping to the floor from fatigue, *to be forgotten or neglected at lunch time!!!*

Actually, in some schools—and I would just enjoy giving the names—I have never been once asked to lunch, although I have substituted in them, not one or two days, but a week or more at a time; and every day have heard the teacups jingle in my frantic ears at noon-time.

I have often thought, in the height of my hungry rage, that the wheel of Tantalus would be a fit punishment to those teachers who thus saw me hungry and a stranger and took me not in. I have only commenced to growl; but as I am getting sleepy,

and feel my rage evaporating, I will defer the rest until next month, and then, oh! ye delinquents who feel your dear, "pretty" consciences sting you, beware of

PLAIN ANN JENKINS.

MISCELLANEA.

FACULTIES CULTIVATED BY DIFFERENT STUDIES.—Writing and Drawing cultivate the perceptive and imitative faculties.

Mental Arithmetic cultivates the memory and the powers of conception and reasoning.

Arithmetic cultivates the reasoning powers and induces habits of exactness and order.

Grammar cultivates the faculties of abstraction and reason.

Geography specially cultivates the memory and the conceptive faculties.

Mathematics cultivate the reasoning powers chiefly in relation to the acquisition of necessary truths.

The Physical Sciences exercise the observing and perceptive faculties.

Poetry and Fiction specially cultivate the imagination, the taste, and the moral feelings.

Biography and History awaken the faculty of attention, and cultivate the memory.

Music cultivates the taste and refines and elevates the moral feelings.

Intellectual and Moral Philosophy cultivate all the higher faculties of our nature, and induce habits of abstraction and self-examination.—TATE.

LONGITUDE DETERMINED BY TELEGRAPH.—It is thought, the *Athenæum* says, that the time has arrived when the longitude of places in England, especially of our principal ports, should be determined by electric telegraph. If this were systematically carried out, the errors or discrepancies which at present exist would be corrected, as when the difference of longitude between Greenwich and Cambridge was ascertained in 1828, by geodetic measurement, the observatory at Cambridge was 24 min.6 east of Greenwich; but the chronometer proved it to be 23 min.24, a distance of 1 min.06.

A similar rectification might of course be made for every place within the four seas by telegraph; and if the longitude of all the ports were known to a certainty, a ship's departure could be taken with more confidence than at present. The question is interesting and important, and may be said only to need discussion to bring it to a practical solution. Perhaps the astronomer Royal will take it in hand when the telegraphs of the Kingdom shall have passed into the hands of the Government.

DEPARTMENT OF PUBLIC INSTRUCTION.

JOINT TEACHERS' INSTITUTE FOR AMADOR AND CALAVERAS COUNTIES.

THE Joint Institute for Amador and Calaveras counties was held at Mokelumne Hill, commencing October 12th, and ending on the evening of the 15th. The State Superintendent reached Mokelumne Hill on the second evening of the session, and remained until the close. There was a good attendance of teachers from the two counties, and for social excellence and professional zeal their superiors would be hard to find. Superintendents Briggs and Williams alternated in presiding—combining, in their joint presidency, the mature and benign wisdom of the venerable veteran, with the dash, the humor and the energy of young (and single) manhood. The exercises on the last day of the session were of extraordinary interest; the discussions were not only earnest, but able. The proceedings will probably appear next month. The only drawback to the pleasure of the State Superintendent's visit was that it was too brief. The courtesies extended to him by the members of the Institute are highly appreciated.

THE ALAMEDA INSTITUTE.

THIS Institute began on Tuesday the 12th of October and continued until the afternoon of the following Friday. Pleasure, profit and interest characterized its sessions. The "proceedings" were expected for the present number of the *TEACHER*, but have not yet arrived. The teachers of Alameda "are up (and proceeding) with the times." Their discussions show appreciation of the great *PROBLEM OF EDUCATION*, as well as restlessness under the crampings that truth is subjected to by many traditional customs in the popular methods of doing things. Mr. Tylor's recent lecture "on the survival of savage thought in modern civilization" is sensible and suggestive. The teacher has many silly as well as savage thoughts and customs to attack and banish from his school-room—customs that he has not only to show are silly—even savage and injurious—but which he has also to *persuade men to relinquish*,—because men look upon them as heir-

looms in the great family of teachers, which it were sacrilege not to reverence. But it needs no truth-crushed-to-earth homily to encourage those who "see clearly" to go forward in their mission of enlightening, bettering, blessing mankind. There is pleasure even amid the smoke of the contest—a pleasure that is a foretaste of the greater, surer, quieter joy of victory! Victory over ignorance and prejudice—prolific mothers of what, perhaps, might not inappropriately be termed, The Superstitions of Learning.

DEP. SUP.

REPORT OF PUBLIC SCHOOLS.

ROLL OF HONOR.

BIDWELL DISTRICT SCHOOL, *Butte county*; S. S. BOYNTON, Teacher. For the term of three months, ending Sept. 21th:

First Month.—Linda Culver, Edward Turner, Philip Ruggles, Willie Turner, Laura Ruggles, Annie Young.

Second Month.—Laura Ruggles, Linda Culver, Sallie Sparks, Charley Turner, Edward Turner, Willie Turner, Philip Ruggles.

Third Month.—Linda Culver, Laura Ruggles, Edward Turner, Philip Ruggles, Willie Turner, Hattie Turner, J. L. Jones, Geo. Sparks, Phoebe Yetter, Henry Ruggles.

CARNEROS PUBLIC SCHOOL, *Monterey county*; J. P. C. ALLSOPP, Teacher.—For three months, ending October 21st, 1869:

Stella A. McKinley, Viola D. McKinley, Julia Ellen Slankard, Annie E. Slankard, Mary F. Bryan.

BOOK TABLE.

PALMER'S SABBATH SCHOOL SONGS; To which is Added an Extensive Collection of Standard and well-known Sunday School Hymns, by H. R. PALMER, Author of "The Song Queen," "Rudimental Class Teaching," "Elements of Musical Composition," Musical Editor of the "Sunday School Teacher," etc., etc. Chicago: Published by Adams, Blackmer and Lyon.

A valuable addition to our Sunday School music. The hymns are classified into those suitable for Sabbath Schools, Social Meetings, Temperance, Missionary, Funeral occasions, &c., which adds convenience to a good collection of songs. Price, 35 cents; 50 copies, \$11; 100 copies, \$20.

A DRILL BOOK, For Practice of the Principles of Vocal Physiology, and Acquiring the Art of Elocution and Oratory, comprising all the Essential Elements of Vocal Delivery and Gesture for Common and Parish Schools, Colleges, and Private Learners. By ALLEN AYRAULT GRIFFITH, M.A. Author of "Lesson in Elocution." Chicago: Adams, Blackmer and Lyon. New York: A. S. Barnes & Co. 1868.

Elocution is one subject that is not generally well taught in our schools. Teachers, perhaps, teach as well as they know. They can improve their knowledge by an examination of this little volume. It has rules, directions and examples, which, though brief, show very clearly how the various styles

of voice may be acquired; and for either reading or speaking well, the mastery of voice is essentially necessary. As a "drill book," we heartily commend it to those seeking to improve themselves in the useful art of reading, notwithstanding such expressions as "Be sure and get the right feeling and thought," &c. Price, 75 cents.

LIBRARY OF EDUCATION.

The 2d, 3d, and 4th volumes of the "Library of Education," published by J. W. Schermerhorn & Co., New York, are received. Teachers and school officers have here an opportunity of getting the best thoughts of the best writers on education at a mere nominal rate. The price of No. 2 of the series is 15 cents, (postpaid 20,) No. 3, 20 cents, (postpaid 25,) No. 4, 20 cents, (postpaid 25.) The volumes thus far are from the pens of Locke, Milton, Mann, Mill, Froude, Carlyle.

THE MASONIC MIRROR.

Two numbers of this periodical have been received. The Pacific coast has great need of a journal devoted to its Masonic interests. Bro. Bishop has begun a good work, and thus far has discharged his duty well. Success to THE MIRROR. May its pages ever be of the true polish, in which all Masons shall see themselves as they are—the good that they may become better; the bad that they may reform, improve, and become good. Price, \$2 50 a year. Office, 608 Market street. AMASA W. BISHOP, Editor.

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Arithmetic—Eaton's Higher—reviewed.

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Grammar—Greene's Analysis.

Natural Philosophy—Quackenbos'.

Physiology—Cutter's Larger.

Rhetoric—Boyd's.

Natural History—Tenney's.

SENIOR CLASS—*Second Session.*

Botany—Gray's.

Physical Geography—Warren's, with Guyot's Wall Maps.

Normal Training—Russell's.

Geometry—Davies' Legendre—five books.

English Literature—Shaw's.

Book-Keeping—Payson & Dunton's Double Entry.

General Exercises—Same as in Junior Year.

REGULATIONS OF THE STATE NORMAL SCHOOL.

Adopted by the Board of Normal School Trustees, March 28, 1868.

1. All pupils, on entering the School, are to sign the following declaration of intention:

'We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State.'

Male candidates for admission must be at least eighteen years of age; and female applicants at least fifteen years of age; and all must possess a good degree of physical health and vigor.

2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

GENERAL INFORMATION.

The time for completing the Normal School course is two years, each divided into two terms of five months.

There will be Written Examinations and Public Exercises at the close of each term. The Graduating Exercise will be in May.

Pupils will be required to furnish their Text Books. Books for reference will be furnished by the State. Good boarding can be procured at about twenty-five to thirty dollars per month.

Applicants will please read attentively the "Regulations" as given above, particularly the Fourth and Fifth.

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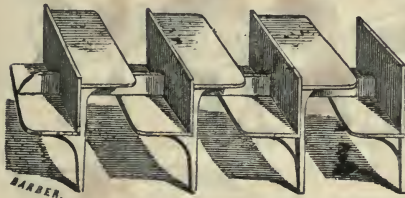
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DECEMBER, 1869.

Vol. VII.]

[No. 6.

THE

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THE

CALIFORNIA TEACHER.

DECEMBER, 1869.

Vol. VII.

SAN FRANCISCO.

No. 6.

ALAMEDA COUNTY TEACHERS' INSTITUTE.

THIS Institute commenced pursuant to the call of the County Superintendent, A. L. Fuller, in the Lafayette Grammar School room, on Tuesday, Oct. 12, 1869.

The Superintendent called the Institute to order promptly at 11 o'clock, A. M., and in his opening address said:

“The Institute had been called in conformity with the School Law. They had convened to counsel with each other and to consult concerning the great work in which they were engaged, that they might when they dispersed perform their duties the more efficiently. It needs no argument to prove the efficiency of a well regulated Institute. The various shortcomings to be found in the schools are too well known to need repetition, and each thoughtful teacher has doubtless thought of some plan or system for their correction, and by a comparison of ideas they can be of mutual profit to each other. If the experience of one teacher can benefit another, how much greater should be the benefit where sixty of them assemble and interchange ideas? A year ago there was a four days' session, which was attended with the most beneficial results, and none who were then present failed to accomplish much more during the year than if they had not participated. He hoped that no exercise that might come before them would be entirely without benefit to some, though it was hardly possible to expect that all the exercises would be equally profitable. During the past seven years he had attended every Institute that had been held in the county, and the efficiency of the teachers has uniformly advanced. The average number of months during which the schools have been kept open during the year ending July, 1869, is greater than ever before,

and the salaries of teachers have been raised on the average of \$18 per month. Last year there were expended in Alameda county, for school purposes, upwards of \$40,000; and this year the appropriations for this purpose are likely to exceed \$45,000. The people are recognizing teaching as a science, and are appreciating the labors of the teacher. He recommended that a standing committee be appointed, to whom various questions that might be propounded should be referred, and who should present a report each morning."

After the election of a Secretary, the roll of the teachers in the county was called as follows:

Lafayette Grammar School—J. B. McChesney, Principal; Miss Smith, Associate; Miss Jewett, Miss J. Langtadter, Miss M. Lichtenhaler and Miss Emily E. Jayne. Prescott Grammar School—A. W. Brodt, Principal; Mrs. Wheelock, Assistant; Miss Sailor and Miss Mary J. Alexander. Primary No. 1—Principal, Miss Harkness; Miss E. P. Brown and Miss M. E. Ludwig. Primary No. 2—Principal, Mrs. Hoit; Miss Betancue and Miss Georgie Smith. Primary No. 3—Principal, Mrs. Richardson, and Miss J. Nesbitt. Alameda—Miss Griffin and Miss Bannister. Alvarado—Mr. A. J. Farley, Miss Maggie Listen. Alviso—Mrs. Bates. Brooklyn—Mr. J. H. Sumner, Mrs. W. J. Hamilton, Miss D'Arcy, Miss Patton and Miss Sanderson. Centerville—Miss Hilton. Cosmopolitan—Mr. J. T. Jones. Eden Vale—Miss Christine Hart. Encinal—Miss E. A. Evans, Miss Clara B. Porter. Eureka—Miss A. S. Barnard. Laurel—Mr. John Yule and Miss M. A. Kimball. Lincoln—Miss C. L. Thompson. Livermore—Mr. E. G. Coe. Lockwood—Miss Hicklin. May—Miss Bradbury. Mission San Jose—Miss M. E. Tourlelotte. Murray—Mr. L. C. Clarke. Ocean View—Mr. S. A. Penwell. Palmyra—Miss Maggie Halley. Peralta—Miss L. F. Charles. Pleasanton—Mr. J. C. Gilson. Redwood—Miss M. E. Randall. San Lorenzo—Mr. C. F. True. Sunol—Miss Katie Moran. Temescal—Miss E. M. Harvey. Townsend—Mr. S. S. Saul. Union—Mr. C. Howe, Miss E. L. Whitmore, Mrs. Pratt, Miss M. E. Pratt. Vallecito—Miss E. R. Tucker. Washington—Mr. J. T. Finlayson. Warm Springs—John Curraugh.

"Let Us Sing Merrily" was now beautifully executed by an impromptu choir, Miss Emma Smith presiding at the piano.

Prof. A. L. Fitzgerald, editor of the CALIFORNIA TEACHER, having been invited for the purpose, delivered the Salutatory Address. This address concisely but very ably discussed the theory and practice of teaching. Subsequently the Institute passed a resolution requesting a copy of this address for publication, and consequently it will appear in the TEACHER. [The editor of the TEACHER leaves out his address, to give place to more interesting reports and essays.]

The following committees were chosen:

Order of Business—Messrs. Tait, Fuller, Brodt and Clarke, and Mrs. Wheelock and Miss Harkness.

Introduction—Messrs. Howe, Fuller and McChesney, and Mrs. Wheelock and Miss Jewett.

On School Discipline—Mrs. Hoit and Miss Harkness.

Music—Miss Brown, Miss Smith and Miss Hamilton, and Mr. True.

On motion, Professor Carr, of the State University, was invited to deliver a brief address in the afternoon.

Mr. Spencer was added to the Committee on Music.

AFTERNOON SESSION.

Music—"Mountain Maid's Invitation."

The Committee on Business made the following report:

DAILY SESSION—Morning: 10 A.M. to 12 M. Afternoon: 1 P.M. to 3 P.M.

INTRODUCTORY EXERCISES—Roll Call, Singing, Prayer, Singing. Special programme to be arranged from day to day.

"The Proper Ventilation of School Rooms" elicited a warm debate.

Mr. Tait said the school room should be well aired before and between school hours. *All* should leave the school room at recess. Curtains should be fastened twelve inches from the top, so as to let the air pass over the lowered sash.

A teacher recommended curtain fixtures he saw at the Mechanics' Fair, which can be rolled upward or downward at will.

Mr. Fitzgerald recommended great care when scholars return heated from the playground.

Miss Barnard recommended always opening the window for ventilation, on the side from the wind.

Miss Harkness and others suggested thermometers to determine the temperature of school rooms.

Mr. Brodt thought the architecture of school houses very faulty in regard to ventilation. The windows ought to be so arranged as to avoid a direct or strong current of air.

The next question submitted was: Is it right to detain a pupil in the school room after school hours for any purpose?

Mr. Howe expressed himself decidedly in the negative.

Mrs. Hamilton and Mrs. Hoit thought a judicious use of time with scholars in the school room after school hours beneficial; but the time so used should be quite limited—never sufficient to exhaust the energies of the teacher.

Miss Harkness thought the teacher and scholars should appear in the school room promptly and leave it just as promptly.

Mr. Tait also said he believed in teachers performing *all* their work in the hours prescribed by the law. These hours were sufficient for all their duties, and sufficient to exhaust all their energies.

Mr. Fitzgerald recommended that a dull or lazy boy be put in charge of a fellow pupil.

Mr. True thought that when a teacher had faithfully employed the hours fixed by the law, it would be injustice to the school as well as the teacher for him to exhaust his powers by extra exertions with a single pupil.

After the debate, which was very spirited, a show of hands decided the question in the negative.

The remainder of this afternoon was occupied by Professor Carr in lecturing upon chemistry. The Professor illustrated his

lecture by a number of beautiful experiments, and he was complimented by a vote of thanks.

SECOND DAY.

The session this morning was opened with prayer by the Rev. J. E. Benton.

Miss S. N. Jewett, of the Lafayette Grammar School, opened the discussion on Reading. This lady had one of her classes present, and showed in a very happy manner her method of teaching the important art of reading. She first caused her pupils to prepare themselves for the vocal effort by filling and exhausting their lungs a number of times, exacting deep and full inspirations each time. She then pronounced a number of words selected from the lesson in hand, causing the class to pronounce them in like manner. The excellent reading of Miss J.'s bright pupils convinced all present of the excellence of her method, and of her superior ability as a teacher.

Rev. Mr. Benton, being present, participated in the debate which followed the class exercises. He thought reading should be in a natural tone, and with a natural manner.

Mr. McChesney thought reading a very important branch of learning—more important than teachers usually think it is. In answer to a question by Mr. Penwell, he said distinct articulation is the great desideratum in reading, and that this, with an understanding of what is read, is the object to be sought in teaching reading.

Mr. Coe agreed with Mr. McChesney.

Mr. Benton thought the breathing exercise preparatory to reading ought to be universally adopted—it was really excellent.

Miss Jewett thought a child could not read well lessons not well understood, and inquired whether pupils should not be kept on each lesson until it is thoroughly understood and correctly read.

Mr. Farley said there is a great variety of styles of reading, each one pronounced excellent. He named Murdock and a number of other distinguished readers, no two of whom read alike, and still each is reckoned a master elocutionist. He therefore inclined to the belief that there was no very clear standard for good reading.

Mr. Howe thought the trouble in teaching reading in common schools is having books with matter the pupils do not understand.

Music by the choir.

Miss Lichtenthaler briefly illustrated the manner of teaching colors with color charts. Upon the question whether the study of colors should be considered important there was a variety of opinion.

Miss Harkness delivered a short lecture upon Penmanship, and illustrated her method of teaching it on the blackboard.

Her method combines the good features of Spencer's and Pay-

son & Duntón's. She uses but three elementary lines or principles—the straight line, and the right and left curved lines. She places the right side to the desk, and has an exercise of half an hour each day.

Miss Smith said she preferred the front position at the desk, and Miss H. said she did not disapprove of it.

AFTERNOON SESSION.

Music.

On motion of Mr. Howe, a committee to report a uniform plan for keeping the Roll of Honor was appointed, consisting of Mr. Howe, Mrs. Wheelock and Miss Kimball.

The subject of Penmanship was again introduced, and debated by Mr. Coe, Miss Kimball and Miss Harkness.

Music—Song by Miss Porter.

Prof. Carlton, of the State Normal School, was now introduced, and delivered a very interesting lecture upon Natural History. He said that his particular hobby was natural history, but he promised not to weary his hearers, though he would give them a sermon, taking his text from the Book of Job: "Ask thou the beasts, and they shall teach thee; the fowls of the air, and they will tell thee; and the fishes of the sea, and they will declare it unto you." The speaker referred to a Commission that was some time since chosen by the English Government to examine into the whole subject of education, and report the result of their labors. Their examinations were most elaborate and critical; Oxford and Eton passed under their inspection, as well as the humbler schools of the land, and their report was exhaustive. It was found that the minds of distinctive character were drawn, as if by a maelstrom, into the study of the dead languages and mathematics, and that, in the schools of every grade, the natural sciences were neglected or not taught at all, though they are as good a means of disciplining the mind, and English studies are often ranked as of secondary importance. The eminent men of science did not come through any of the great universities, but from other walks of life. The natural sciences did not anywhere form a basis for the promotion of scholars; no rewards were offered to those who might excel in them, and consequently no inducement for emulation. Herbert Spencer truthfully wrote that what our school curriculums have almost entirely omitted is of the most importance to men in their daily vocations. Had the only means of education in England been by the established schools, that country would never have advanced to a position superior to that held by it during the feudal ages. In our own country, chemistry and geology find a place in our educational institutions, but in respect to the others, there can be no advantage claimed over the mother country. It is but very recently that an attempt has been made to give the natural sciences a place in our colleges, and heretofore their

scientific collections have been kept for show, rather than use. These studies have not ranked with the classics or mathematics. Our own scientific men have not generally been educated at our most promising institutions. A new life has lately been infused, the instituting of the Lawrence Scientific School being the dawn of a new era, and the leaven thus produced has exerted an influence now being felt all over the country. The Professor maintained that some elementary scientific principles should be taught, even in our primary schools, and they should be taught in every department of the schools. It would develop the perceptive powers of the young. It will enlist attention and store their minds with valuable knowledge. Many youths go direct from the district school room into the business of the world, and unless they there receive such knowledge, they are not likely to ever possess it. Every boy can and should be his own botanist.

The Professor dwelt at great length upon the wonders of the animal kingdom, the utility of the natural sciences and their application to the commonest wants of life. After presenting this view of the matter, he dwelt upon the marvels unfolded by an examination into the works of nature, and found that there was more wonderment than the investigations into ghosts and spirits, viewing a pine table with a silly woman at one end and a sillier man at the other. From the anatomy and habits of insects was conceived the idea of the tunnel under the Thames. From the same sources was derived the model of the Crystal Palace, the diving bell, and many of the mechanical tools, as the dentist's forceps. The speaker expatiated upon the wonders of the insect kingdom, and was listened to with a high degree of interest by his audience. He closed by a few reflections upon the fact that a science possessing so much to interest and instruct has been so neglected in our educational system, and expressed the hope that the teachers of California would awaken to the importance of accomplishing the desired reform.

The debate which ensued after this lecture drifted into "object teaching." This drew out the Professor, who has some well considered and very decided opinions upon this subject, and he was requested by vote of the Institute to read an essay which he had prepared for another occasion. The essay was a very concise and logical production, intended to demonstrate the incomparable superiority of the object-system of instruction, for at least primary scholars, over all others. It is adopted by the State Normal School and he hopes to see it adopted by every school in the State. The tendency for the past few years has been towards the adoption of such a system, founded as it is upon the natural laws of mental development. The system has been introduced into almost every State in the Union, and is gaining popularity as fast as its merits become understood. He pictured its benefits in most glowing colors.

At the conclusion of his address Mr. Tait took the floor and

expressed his belief that there was not a short or patent method of obtaining an education, and he proved the impossibilities of teaching the higher studies upon the new plan. He maintained that the two studies especially important and calculated to give the mind proper discipline are the classics and mathematics.

Mr. Benton wanted Prof. Carlton to give his plan for putting the "objective system" into practice, but time precluded a compliance with the request.

Prof. Carr said the "objective" idea is as ancient as Socrates, at least, and it is a correct idea.

Adjourned to Brayton Hall at half-past seven.

Prof. Russell's lecture on elocution, this evening, was listened to by a large and appreciative audience, in addition to the members of the Institute.

THIRD DAY.

Two songs were rendered this morning, by the Choir, "Full and Harmonious" and "Come, Cheerful Companions," Miss Porter presiding at the piano.

The session, this morning, was occupied with the discussion of grammar. The discussion was opened by the Secretary of the Institute by reading a synopsis of the opinions expressed upon the topic at the last California State Institute, the substance of which is, that the science of grammar as now established, and the present mode of teaching the use of the English language is very imperfect, so much so that the time spent with them in the public schools is nearly all lost.

Mr. McChesney thought the correct use of the English language could be readily acquired without dividing the words of it into parts of speech, perhaps more readily than by the present mode; that to acquire the ability to use words correctly, we need not learn to call them nouns, verbs, adjectives, etc. It would be sufficient to teach the learner the use of words and the ideas they represent, and then let him make use of them according to the best models he can obtain among good writers. The lady correspondent of the *S. F. Times*, commenting favorably upon Mr. McChesney's remarks, said they were endorsed by many present.

Mr. Fitzgerald thought the trouble was in giving the parts of speech wrong names, and in attempting to make the English language conform to the rules of others to which it has no analogy in structure.

Prof. Carr said, there are principles in grammar, but they are poorly set forth in the text books now in use. He had studied Murray in the usual way, but the time spent in doing so was almost lost; believed he would have learned much more by having had a few of the elementary principles connected with the use of the language explained to him. Warming up, the Professor said, he sometimes wished that all the text-books now

extant could be done away with, for he believed that with the light the present generation have, and the ideas prevailing, better ones could be produced.

AFTERNOON SESSION.

Superintendent Fuller delivered a very full and explicit lecture on the decimal system of weights and measures, and made its advantages very clear.

The Committee of Inquiry made the following report, which was highly relished by the Institute:

Mr. Chairman, and ye seekers after truth who have personified interrogatory pronouns:

We have received the nine following questions, and in obedience to your instructions, have, in solemn conclave, deliberated upon the best methods of resolving into simplicity the knotty principles involved therein.

1. How can we best secure regular attendance ?
2. How can affectation in reading be best avoided ?
3. Is it best for pupils to be promoted as rapidly as usual in the reading books ?
4. Is it best for pupils to read lessons which they cannot comprehend ?
5. Which is the best method of awakening thought and securing attention in the class ?
6. What is the best method of teaching intellectual arithmetic ?
7. Can a child be taught to read *distinctly* without frequent exercise in the elementary sounds ?
8. At what step of advancement in reading should this be introduced first ?
9. May the teacher drink wine ?

Having heard these questions, you must, at the *moment*, appreciate the Herculean task thus imposed upon us. It is needless for us to harrow your sympathies by a minute description of the fatigues of yesterday—the bodily discomfort inflicted by these *illiberal seats*—the mental strain brought upon us by the momentous discussions and elaborate essays to which we listened—the unusual excitement consequent upon the numerous introductions given by the Committee appointed for that purpose—and finally, the great draft made upon our emotional natures by the talented lecturer of the evening. But having endured them *all*, when, in the silent hours of the night, and by the light of the midnight oil, (which, by the way, has lately riz-n,) we came to this last duty of the day; we guessed and guessed answers to the above conundrums, *all in vain*, for “tired Nature” refused to sustain us farther, and, gazing sleepily into each other’s drooping eyes, we mutually agreed to—“give them up.”

But the renewed powers of the morning enabled us happily to solve the riddle—“May the teacher drink wine?” As far as our knowledge of State legislation extends, there is no law against it here, and the two States that *have* passed prohibitory laws are so far distant, that they cannot restrain the bibulous inclinations of any California pedagogue.

The triumph of having achieved the success of even this *one* answer, has inspired us to adopt for our motto, “Try, Try Again.” So none need be “backward about coming forward” with any future conundrums that may trouble them to solve, as we are still open to further proposals.

All of which is respectfully submitted.

J. B. H., } Committee of Inquiry.
M. E. H., }

Mr. Brodt delivered a very able lecture on Calisthenics, and introduced one of his classes, which went through the drill beautifully. The Institute expressed its gratification by a vote

of thanks to the lecturer and his class. Miss Emma Bolton, a member of the class, presided at the piano while the class was exercising.

Prof. Carr's lecture at Brayton Hall, in the evening, on the "Air we Breathe," was a masterly one, and elicited the praise of all who heard it, and a hearty vote of thanks was tendered the lecturer for it.

Prof. Carr's presence at the sessions of the Institute, and the interest manifested by him in its proceedings, were very gratifying to its members, and speak much for him as an educator.

FOURTH DAY.

Music. Prayer, by Rev. Benton.

Mr. Finlayson was to have read an essay on Geography this morning, but he announced himself unprepared. He, however, presented the topic to the Institute in a few pertinent words. A running discussion ensued, participated in by Misses Jewett and Barnard, and Messrs. McChesney, Jones, Benton, Coe and Yule, the principal points being whether this branch of education should be taught mainly from text-books or orally; and whether map drawing should be much resorted to.

Miss Emma Smith read a brief and very happily conceived essay, presenting a birthday calendar, made after the style usually given by astrologers, with a touch of humor that caused much merriment.

AFTERNOON SESSION.

Prof. Hubert Burgess, of San Francisco, delivered a lecture on Drawing, and illustrated in a very interesting manner how easy it would be to teach this amusing and instructive art to children in the public schools.

The Committee of Inquiry made their second *spicy* report, as follows:

Question: Has the teacher a right to pull a pupil's ears?

Answer: Shakspeare says: "Give thine ears to all"; and if by reason of eloquent argument you can persuade a scholar to *make* such a bestowal of his auricular appendages, we think it would be a breach of trust to take such undue advantage of his confiding innocence, as to painfully elongate the organs in question. On the other hand, if in a moment of excitement you should hastily possess yourself of a child's ears, he would undoubtedly agree with Milton, when he says "More is meant," &c., and sadly acknowledge your right to enforce discipline in this manner.

Q. How shall children be prevented from climbing trees?

A. Cut the trees down.

Q. Should school government be republican in form, and how far might republicanism be adopted?

A. It should be a republican body presided over by an autocrat.

Q. Should not letter writing be taught in school?

A. Undoubtedly.

Q. Why do teachers persist in "learning" their scholars science, when it is their business to "teach" them?

A. Probably because they do not *know* enough to teach.

John presents this:

Q. What is the difference in the signification and use of the words "learn" and "teach"?

A. John, if you had consulted Webster, as we did, you would have found that the preferred meaning of "learn" is to *gain* knowledge, and of "teach," to *impart* knowledge, and the accepted use of these words corresponds to these definitions.

Q. Are Teachers' Institutes worth what they cost?

A. Doubtful. This one cost \$150.

Q. How would you avoid whispering?

A. Personally, self-control is sufficient to enable us to refrain when there is necessity for it. Seriously, we suppose the questioner wishes to know how whispering among scholars may be prevented, and that matter has already been discussed before the Institute.

Q. Are we to assume that all children are fools when they enter school?

A. Such an assumption would be contrary to law, which considers every man innocent until proved guilty.

Q. What is the best system of maintaining order in the school-room?

A. It requires, in the first place, a few important rules, distinctly stated and *inflexibly* kept; and in the second place, untiring watchfulness. You know the soldier's watchword: "Unceasing vigilance is the price of safety;" and lastly, be sure that punishment, kindly but firmly administered, invariably follows any flagrant breach of your established laws.

Q. Should a teacher fret, and if so, how much?

A. No one should be a teacher who has not sufficient self-control to *conceal* his irritability, although we all know that it is sometimes impossible to avoid *feeling* it.

Respectfully submitted by the

COMMITTEE OF INQUIRY.

The Committee "On a Mode for Keeping the Roll of Honor," reported no progress, and asked to be discharged, and the request was complied with.

On motion of Mr. Yule, the County Superintendent was requested to prepare and publish a uniform standard for keeping Rolls of Honor.

Mr. E. G. Coe read a very carefully prepared and elaborate essay upon the social relations of the teacher. He said: There is an education of the head and one of the heart. The intellect and the passions must both be educated, as it is the exercise of the latter in the one or the other direction, that makes man an angel or a fiend. The true object of an education is to acquire the power and the disposition to do good in the highest degree; that is, to develop the intellect and bring into subjection the passions. He dwelt upon the importance of teachers cultivating the acquaintance of the parents of the pupils, as they could thereby get an influence vastly greater.

Mr. Howe asked what the gentleman who had just spoken would do if he had been teaching for five months in a district, and had never been invited into a family, and when the attempt was made he should be met with cold formality. Mr. Coe's theories might be correct, but he wanted to know how they could be carried out.

Mr. Coe, in reply, quoted St. Paul to him, "all things unto all men," or in other words, endeavor to make oneself agreeable to all.

Mr. Tait said that all the difficulties pointed out by Mr. Howe were not encountered by female teachers, and ladies now do about two-thirds of the teaching. He thought that in rural districts ladies had most enviable positions, and always occupied leading social positions. Mr. Tait considered that in many instances male teachers were doing women's work, which was the true reason that they are sometimes slighted. The male teacher should hold a position similar to that occupied by the minister, he should respect himself and ingratiate himself into the good will of the people among whom he may reside.

Mr. Benton thought some insinuation had been thrown out about ministers, and he arose to defend the dignity of the "cloth," and held that all ministers by no means succeeded in a community in keeping the good will of everybody.

The following resolutions were adopted unanimously:

Resolved, That the thanks of the Institute be tendered to the citizens of Oakland, who have generously received the teachers from a distance into their houses, and entertained them in a cordial and hospitable manner.

Resolved, That the thanks of the Institute be tendered to Prof. Carr, for the very able, instructive and entertaining lecture with which he kindly favored the teachers on Tuesday evening, and which was abundantly calculated to be acted upon by them, in their future instructions.

Resolved, That the thanks of the Institute be tendered to Mr. Beckwith, for the use of College Hall for our lectures Wednesday and Thursday evenings.

Adjourned *sine die*.

I deem it proper to say here, that I have received much valuable aid in making up the foregoing report, from the full and excellent reports of the daily proceedings of the Institute published in the *Oakland Transcript*.

S. S. SAUL, Sec'y.

AMADOR AND CALAVERAS JOINT INSTITUTE.

THE Joint County Institute, composed of the teachers of the counties of Amador and Calaveras, met at Mokelumne Hill, October 12th, 1869, at 2 o'clock p. m., and were called to order by W. S. Williams, Esq., Superintendent of Calaveras county.

Present—W. S. Williams, Superintendent of Calaveras; Rev. Mr. Briggs, Superintendent of Amador; Miss White, Amador; Miss J. A. Sawyer, Calaveras; Miss Mary A. Louttit, Calaveras; Miss Lizzie Marchant, Calaveras; Miss Fanny Sherman, Calaveras; Mr. B. Dyer, Calaveras; Mr. L. G. Peachy, Calaveras; Mr. Everhart; Mr. W. Nellis, Calaveras; D. W. Jenks, Amador; F. H. Day, Calaveras.

Institute opened with prayer, by Rev. Mr. Briggs. Opening address, by W. S. Williams.

The Institute then proceeded to elect officers, which resulted as follows:

Vice Presidents—W. H. Stowers, of Amador; Barlow Dyer, of Calaveras.

The President, W. S. Williams, then made the following appointments on Committees:

Committee of Introduction—Miss Annie Parker, Miss Fanny Sherman, Mr. W. Nellis, Mr. Knapp.

Committee on Programme—Mr. B. Dyer, T. G. Peachey, H. W. Ford, A. Norton.

An intermission of ten minutes was taken, after which, all business being completed, the Institute adjourned at 4 o'clock P.M., to meet again on Wednesday, at 10 A.M.

SECOND DAY—FORENOON SESSION.

Institute was called to order at 10 o'clock A.M., Mr. Williams in the chair. The exercises were opened with prayer, by Rev. S. G. Briggs, and the minutes of the previous meeting read and approved.

The following named teachers were present, in addition to those mentioned in the proceedings of Wednesday:

Mr. Ford, Amador; Mr. Stowers, Amador; Mr. Knapp, Amador; Miss Wittman, Amador; Miss Low, Calaveras; Miss Wheeler, Amador; Miss Gothie, Amador.

The Chair appointed Misses Louttit and Marchant critics, for the day.

Mr. Austin read a very interesting essay on Physical Geography, which was followed by an essay on History, by Mr. Jenks.

The discussion upon Geography was then opened by Mr. Stowers, who was followed by Messrs. Ford, Peachey, Miss Parker and Mr. Austin. The discussion was conducted with much spirit, and was followed by one on the subject of History, which was led by Mr. Jenks, and participated in by Messrs. Ford, Stowers, Peachey, Austin, Dakin, Williams and Miss Parker. After a few remarks by Mr. Williams, the Institute adjourned at 12 o'clock.

AFTERNOON SESSION.

Institute was called to order at 2 o'clock P.M., Mr. Williams in the Chair.

Mr. Norton read an essay on Moral Education, which contained many excellent ideas, and was well delivered. Mr. Peachey followed with an essay, the subject of which was Knowledge is Power, and the Best Means of Obtaining It, which contained many good points, and he delivered it with much force.

The Institute took ten minutes recess.

After being called to order, the remaining time was occupied by a discussion on the subject, "Are Prizes a Proper Incentive to Study?" Most of the teachers expressed their views upon this subject, after which the Committee on Programme made their final report, which was accepted and the Committee discharged.

At 4 o'clock, the Institute adjourned until 10 o'clock A.M. on Thursday.

THIRD DAY—FORENOON.

Institute called to order at 10 o'clock A.M.—W. S. Williams in the Chair—opening with prayer by the Rev. O. P. Fitzgerald.

Minutes of previous meeting read and approved. Critics' report read and accepted. Appointments as critics for the day, Misses Wheeler and Gothie.

First on the Programme was an essay by F. H. Day. Subject: "The Teacher's Aim in Instruction."

Next in order was an essay on "Music," by Miss Marchant, which was good in every particular, and was well received.

The State Superintendent made a few remarks on the subject of Music, and stated that he wished to correct a report circulated, namely, that the State Board of Education introduced music in the course of studies prescribed for the public schools of this State, which was not true.

At the conclusion of the remarks on the subject of Music, the question, "Shall Corporal Punishment be used in Schools?" was discussed. It was earnestly debated by the following named members: Dakin, Miss White, Fitzgerald, Williams, Peachey, Jenks, Ford and Briggs.

Institute adjourned at 12 o'clock.

THIRD DAY—AFTERNOON.

Institute was called to order by Mr. Williams.

The exercises of the afternoon were opened with an essay by Mr. Stowers, upon the subject of Physiology. Miss Parker then read an essay upon "Time and its Changes," which was remarkable, both for its poetic and moral beauty.

Mr. Fitzgerald in the Chair.—The President announced that the subject for discussion was, "The Best Means of Securing Punctual Attendance at School." The discussion was opened by Messrs. Dyer, Ford, Judge Leavitt, Rust, Williams, Wells, Louttit and Knapp, who offered the following resolution, which was adopted:

Resolved, That as teachers, when we return to our respective schools, we will more earnestly endeavor to secure attendance than before, and that at our next reunion we will bring before this association the record of our success.

The discussion was continued by Col. Rust, Dakin, Briggs, Wells and Williams.

The State Superintendent made some very interesting remarks.

Mr. Williams in the Chair.—The Committee on Resolutions made their report, which was adopted by resolutions.

Resolved, That we recognize in the Teachers' Institute, the most efficient means of material benefit—of inspiring teachers and school officers with renewed interest, and that it is our belief that we shall go from the Joint Institute of Amador and Calaveras, with new strength and a more determined resolution to battle in the great cause of education.

Resolved, That we recognize in our Institutes a benefit to ourselves as teachers, that can be obtained only through the medium of these Institutes when properly conducted; and that we consider them the proper channel by which our teachers acquire the theory and practice of teaching.

Resolved, That the thanks of the Institute are extended to our worthy and

efficient State Superintendent, O. P. Fitzgerald, who favored us with his presence—in whom we recognize an able and firm friend of education.

Resolved, That for the kindness which they have shown, their marked ability and untiring efforts in arranging and making our Institute a success, we hereby tender our heartfelt thanks to Superintendents Briggs and Williams.

Resolved, That the Superintendent of the sister counties of Amador and Calaveras, make pre-arrangements for a Joint Institute, to be held at Jackson, Amador county, in 1870.

Resolved, That this Institute regards non-attendance at Institutes as unprofessional conduct, and that we think it necessary and right for County Superintendents and Boards to revoke certificates, unless a reasonable excuse is rendered.

Resolved, That our visit to Mokelumne Hill in the capacity of a School Institute has been of the most pleasant and instructive character, and wherever we may be engaged in our favorite vocation, our association there will often be remembered.

All of which is respectfully submitted.

A vote of thanks was extended to the critics for a faithful discharge of their duties each day.

The Institute adjourned until half-past seven in the evening, to meet in the Congregational church.

EVENING SESSION.

This proved one of the most interesting sessions of the Institute. The Programme was excellent, and was fully carried out.

First in order was music by the choir. This was pronounced excellent by the large number present.

Prayer, by Rev. S. G. Briggs.

Superintendent Williams appeared upon the stand, and after a few well-timed and appropriate remarks, introduced to the audience Rev. O. P. Fitzgerald, who entertained them for an hour and a half with an address full of instruction, interest and wisdom, convincing his hearers that he is perfectly familiar with our school system, and that he is interested in the advancement of our educational interests to a degree that cannot fail to prove of great advantage to the youth of California. He pointed out to them errors in which they were liable to fall, and the way to avoid them.

More music by the choir, a Benediction by the Rev. Mr. Briggs, and the first Joint Institute of the teachers of Amador and Calaveras was a thing of the past—gone, with all its pleasures—but leaving to every teacher that which is of priceless value—new light and knowledge to guide in future arduous duties.

J. W. JENKS, } Secy's.
F. H. DAY. }

DR. E. O. HAVEN, says the *Michigan Teacher*, has resigned the presidency of the Michigan University, and takes that of the Northwestern University, at Evanston, Ill., at a salary of \$4,500. The Regents are in active search of a successor. Prof. J. H. Selye, at present Professor of Mental Philosophy in Amherst College, is believed to be the coming man, though several others are named.

"BENEVOLENT FUND FOR TEACHERS."

IN THE TEACHER for October, an article appeared headed as above, in which the writer advocates the "establishment of a society for the relief of sick and indigent teachers," and suggests that an assessment of not less than twenty-five cents per month be levied on each member of the profession in this State, &c., &c.

This article appears to me to be eminently adapted for a journal which is published as being devoted entirely to educational matters, and I am only sorry that C. should imagine that in writing an item of that sort, he had perhaps "lost twenty minutes of valuable time."

There is in California a pressing necessity for such an association; the members of the profession are scattered over an immense extent of country; they are isolated (in many instances,) from all those who surround them; they have but few opportunities of meeting or conversing with their fellow-laborers, and so they often drag out a *heavy* and monotonous existence; and should sickness or misfortune incapacitate one of them from the active exercise of his profession, who cares—he is "*only a teacher!*"

C. writes, "If I was an influential individual, the idea might be popular," &c., &c.

Now, I suppose C. is a teacher, and as such his (or her) opinion will have just as much weight with those to whom the appeal is addressed, as if he occupied the professorial chair, and appended to his signature half the letters of the alphabet.

C's. suggestion, I think, may be improved on in some respects. I would recommend "A State Teachers' Association," the officers to be elected by the members. The Governor and State Superintendent to be *ex-officio* President and Vice President, and the rate of subscription to be (\$1) one dollar per month. The State Educational Society have (I suppose) matters of more importance (in their estimation) to attend to, and for my own part, I would prefer having "uninfluential individuals" like C. as fellow-laborers in an undertaking of this sort. The printers have their "Typographical Society," the press writers their Whittington and Cleveland Clubs, the literary ladies their "Sorosis," and I hope the California teachers will soon also form an association for their mutual benefit and assistance, for "union is strength."

Should C., or any other members of the profession feel inclined "to keep the ball rolling," we can easily communicate with each other through the office of the State Superintendent—that is, if the editors publish this communication. If not, as C. remarks, "twenty minutes of valuable time have been *wasted.*"

T. J. B.

Stanislaus county, Oct. 28th, 1869.

[Original.]

ARE OUR HOMES FAILURES?

NUMBER I.

NOT in bringing children *into* the world, but in fitly caring for them after they get in? That's what I mean,—and I have something to say about it,—at least I *think* I have, which, for all practical purposes, amounts to very much the same thing.

I am a teacher,—a schoolmaster,—that's all; a character whom parents usually neglect quite as much as they do their own children, and yet one of the few who see farther into home life, and know more of parental competence and incompetence than any others.

Every child is a repeater:—he repeats the leading traits, the inner, actual qualities of one or both of his parents. He repeats the central *motives*, the passional mainspring and the essential parts of the mental movement of the parents, before politeness, policy or wealth had covered them with the golden or the glittering case, beneath which the hurrying multitudes seldom trouble themselves to look. Many a father, living a life of outward dignity, morality, or even pretentious piety, has unintentionally published a second edition of his real, inner self, in the person of a mischievous, wayward and wicked son. The child *is* what the father *would* be, if he dared.

The teacher sees this better than any other. If he has any natural love for mental science, he cannot help seeing it. If he has any fondness for the study of human nature, he gradually acquires great skill in translating the parental original from the youthful version continually open before him. This gives him, at length, clear insight into the character and motives of many a haughty parent, who may flatter himself that no eye can ever penetrate the folds of double dignity in which he wraps himself so proudly from the common gaze. But his mantles of dignity, with all their folds of duplicity, are quite too cumbersome for the child to bear. So the father struts down the sidewalk of society in all the security of self-complacency, while his unsuspected boy trots off to school with his whole budget of hereditary infirmities quite uncovered, and there betrays them all. So the poor, unthought-of teacher knows the proud parent far better than his public friends of many years.

The old put on airs,—they cover,—they conceal,—they pretend, until they make their whole life a seeming and a sham,—while the young, having not yet learned the perfidy of politeness, look what they feel, say what they think, and actually *do* what they *say*. Thus the private acts of parents at home declare themselves in the public conduct of children at school. And, hence, he who sees children most frequently, meets them most familiarly and studies them most carefully, most thoroughly un-

derstands the homes from which they come, and best knows the quality and capacity of the men and women who have become the fathers and mothers of the present thronging crowds of unkept youth. And hence the parent's impotence to deceive the teacher, however deeply he may delude the outside public, or even beguile himself.

It is a truth unpleasant to be written, and one must enter consciously upon a thankless task when he undertakes to show something of this fundamental weakness in the very foundation of our social and civil structure,—a weakness so dangerous to the broad present and so doubly threatening to the whole far-reaching future. But when necessary truth clamors for speech to unthinking throngs, who wander madly from her, he is a traitorous coward who shrinks from the frankest speech in her behalf, and he is a fool who fears to know or refuses to honor her fullest demand. The truth most needed now and here, is this: *The homes of our country, as a rule, are failures, and those of the Pacific slope especially so.* The righteous condemnation of Eli might justly fall upon millions of American parents this day. "*Their sons, make themselves vile and they restrain them not.*"

In their greed for gain, or the multiplicity of outward cares, they shirk the first and plainest duty of the home. They pack the accumulated negligence of fifty families into a single school-room, and then magnanimously blame the poor young lady-teacher, who cannot singly bear the aggregated burden without an occasional word of natural impatience or a syllable of complaint. Mild, gentle, considerate public! In what other business could they use so little sense,—in what other relation could they show so little kindness,—what other obligation do they discharge so poorly,—and what other results disappoint them so constantly and so deservedly? In what other interest do they betray such habitual and suicidal impotence, and what other private neglect imposes such burdens on the State, or strikes such deadly blows at the very life of public morals!

If the frequent and lamentable failures, which they so richly merit, could confine their disappointment and disaster within the families of the faithless ones themselves, one might possibly console himself in such a righteous infliction of retributive justice. But the results, unfortunately, break beyond the family pale, and multiply themselves against the public weal until they seem to threaten the integrity of society in the present, and well nigh imperil its very existence in the immediate future.

Thus much for parental impotence to conceal the transmitted effects of parental incapacity and negligence. A far graver impotence, more deeply seated and more prolific of evil, may come nearer the surface, if it does not fairly reach the light, in the second attempt.

PAUL TRUE.

THE HEAVENWARD SIDE.

God knows how hard that is for human eyes to see,—but it is most especially hard for *teachers* to see..

The contractor, who frets during the day, and worries wearily at night over his costs and calculations, may sometimes, nay, I am sure *does*, if he has a soul, look with an eye of pride upon his work; he has done something to make men's lives better, even if it is in an earthy way. Even the mason who lays the bricks, and the hod-carrier who bears the mortar, look not, I hope, upon every brick as alone so much bread or so many cents, but as a milestone also on the road of some man's progress.

Doctors and lawyers, mechanics and merchants, look not constantly and forever upon *this* side of their work; even though they work for themselves; for honor, comfort and money, they are working for God also. Although their feet may never stand inside a church, though no nobleness may reach their hearts, no misery their pockets, yet are they still working for God, they are His servants and He will call upon them for an account of their stewardship, whether it is well done, or ill.

Indeed it does behoove us mortals to look often upon the Heavenward side of our daily labor.

Shortly after the "great earthquake" some gentlemen, whose pockets were evidently not interested, were examining a house, whose brick walls were rent and partly tumbled down; the house had been built for years, but they said that the work had not been well done in the first place. "I wonder," said one of the gentlemen meditatively, "if the mason who did this work, and shirked it, will be held responsible." None answered the inquiry, but a queer look came over their faces, as though the corner of a curtain had been raised, and they had looked beyond the range of human vision; the one who spoke of the mason being "responsible," did not mean responsible to man; the bricks were green in places, with mossy age, and the hands which put them together had mouldered perhaps into dust; his name was forgotten; but the work was *ill-done*, and when the servant would be questioned by his Master, what could he say of it?

Dear fellow teachers, if we do *our* work ill, it is not bricks that will break, but hearts; not walls that will fall down, but souls; and our hands must work not only earnestly, but carefully, lest we fear sometime to answer,—lest we know not what to say, when our Master asks His questions.

It is not good for us to look too intimately into human nature, especially juvenile human nature, for it wears no mask over its native ugliness; nor, thank God, over its beauty; yet teachers must look into it—it is a part of their vocation; and most happy are they who can rejoice in the beauty too much to sicken at the ugliness.

The best teachers they say, make the best daughters and sisters,

the best wives, and, above all, the best mothers; mothers who can see a blemish in their children's characters as well as a beauty, and whose firm and loving hands can soften the one and enhance the other.

A little boy said to me one day: "I think Kate Flynn is an awful homely little girl," with that air of a connoisseur which some little boys, and very many big ones assume; then, after a pause, he added: "Well, I suppose her *mother* thinks she's pretty." Ah me! I suppose she does; happy, happy are the Kates who possess mothers, for their name is legion, and their lot is hard—"the awful homely ones"—Heaven pity them. May it not only pity them, but help; send them good mothers and good teachers—those who will recompense physical or moral ugliness by mental and spiritual beauty; who will find the Heavenward side of the repulsive face, and know their dearest reward in the joy of being held "responsible," and the ability to answer for their work without fear.

There *are* such teachers; few, perhaps, yet not so few as we in our ignorance often suppose. "I never look at that girl," said a *good* teacher to me once, pointing to a "Kate," "but I thank God that I am not her mother." "And yet," she added, "I could not teach that child if I did not constantly try to look upon her with a little of the mother feeling; I work by showing toward her some shadow of a mother's trust, and patience and gentleness." "It must be hard," said I. "Yes," said she, "it is; very hard; but after all, it is nothing but duty."

Saints have ascended into Heaven, crowned with gold; martyrs bear palms of immortality in their prayerful hands, and yet I think that God *could* say no more to them than he will to that true and saintly woman: "Well done, thou good and faithful servant." Their reward can be no better than hers will be—"Enter thou into the joy of thy Lord."

I have often heard the remark made, in answer to a question, "Oh, yes! I like teaching well enough, but I think pay-day is the pleasantest day in the month." They were young lips from which I heard these words; they were young girls who uttered them—girls who had not taught long, nor *thought* long; their minds had been released for so short a time from the discipline of school, and the leadership of a maturer mind, that they were as yet incapable of thinking for themselves. I trust that those teachers spoke thoughtlessly, and knew not what they said. I hope it for their own sakes; more for the children's sake, and most for God's sake. If it is true that they find no pleasure in their labor, but the receiving of their salary, then I say they are not fit, they are not worthy, of the position which they occupy.

Every true teacher feels in her heart that no money can pay her for what she does; and that only One knows and appreciates her work. If she labors for money alone, she is indeed poorly paid; but if she does it for love, also, then great is her reward.

Teachers, let us keep our eyes turned toward this Heavenward side; let us follow the hand which pierces the mist hanging over the river of Death, and points us to the world beyond; let us listen to the voice which whispers—"It is *my* work which thou doest, not thine; take care, and do it well." And those of us who hate and abhor this kind of labor, let us drop the burden which is too heavy for our shoulders, and take up some other work which we can do well; if we cannot feel the glory, but only the drudgery; if we see no hand pointing skyward, if we hear no voice above the monotonous hum and buzz of the school-room, and if money is our sole reward, let us put our hands to less important tasks, and at least do our little well.

It is sad enough to fail in our tasks, even when we deal in bricks or stones; but it is dreadful, indeed, to fail when we work with immortal human souls.

CLARA G. DOLLIVER.

THE MASTODON.

ON the same day that we received the news of the discovery of mastodon remains near Burlington, New Jersey, says the *New York Journal of Commerce*, a California paper brought intelligence of the exhumation of the huge tusks and bones of the same animal near Oakland. The California editor is a good deal puzzled over this singular find, and invites the Academy of Natural Sciences of his State to look into and explain it. Here in the East, and also in the South and many Western States, the disinterment of mastodon skeletons in whole or in fragments, is so common as to have ceased to excite astonishment. The opening up of almost every new marl pit, peat bed, and salt lick brings them to light. It is evident that at one time—at a very late geological period—mastodons were the most abundant of quadrupeds, ranging over the American continent in droves, probably as large as those of the buffalo at the present time, on the far western prairies. The habitat of the animal was the whole temperate zone, though the climate and products of what are now the Middle, Western and Southern States, seem to have been most suited to its tastes. Thus far the remains of the mastodon have been chiefly found in New York, New Jersey, Ohio, Kentucky, Missouri, Nebraska, Kansas, South Carolina, Mississippi, Alabama and Texas, though specimens have been occasionally dug up in British North America, and even as far north as the sixty-fifth parallel. The first nearly complete skeleton ever taken out was discovered in Orange county, New York, early in the present century, and was taken to London for exhibition, and afterwards placed in Peale's Museum, Philadelphia. The swamps about Newburg, New York, are rich in these fossil treasures, and it is from those sources that the museums of the country have been supplied with such curi-

osities. One perfect skeleton was found in Newburg, New York, last year, and digging for them in the old swampy ground of that region would probably reveal hundreds of others. The same remark is true of swamps everywhere on this continent. The mastodon probably resorted to them to drink or feed on the roots of water plants, and becoming mired, was unable to extricate itself, and sank lower and lower into the treacherous mud or quicksands, and was there drowned or suffocated. Since then decaying vegetation has gradually filled up the swamps, and the mastodon is now buried at a depth of from ten to fifty feet below the surface. This explains the frequent occurrence of its bones in marl and peat formations, and also in the salt licks of the West, to which the mastodons flocked at different seasons of the year. Of the genus *mastodon giganteus* there are estimated to be about thirty varieties, differing from each other in trifling respects. In general appearance and size they resembled the Asiatic elephant. The skeletons are from ten to twelve feet high, and from sixteen to twenty feet long, with tusks projecting from seven to nine feet beyond the sockets, and twenty-four teeth, the largest of which are about eight inches long on the top and seven inches deep, thigh bone nearly a foot through at the thickest part, and fore feet nearly two feet in diameter. At some stage in the history of the earth, prior, it is supposed, to the appearance of the mastodon on this continent, the creature flourished in Siberia; and the finding of its tusks, known as "fossil ivory," constitutes an important trade in that part of the world, even to this day.

SOME one has advanced the idea of telegraphic stations in mid-ocean. A voyage across the ocean frequently occupies a dozen days or more, and those who are compelled to cross often have no means of getting any news. It is proposed to station a telegraph ship at a point some fifty miles from the coast of England, which shall be connected by a cable with Penzance. Then ships can stop there and hear news from the whole world. In time these projects may increase, and station-ships may be anchored all along the routes of the various cables. What next?

THE *Springfield Republican* says Prof. Esty, of Amherst College, has recently finished a computation of the orbits of Saturn's satellites, a long and difficult work, which no mathematician has before accomplished. It gives him high praise in high circles.

IN the field of teaching, women have been unusually successful, and have gradually superseded men in most of the schools. According to the last census, there were, in the United States, 150,241 teachers, of whom 100,000, or nearly two thirds, were women.

DEPARTMENT OF PUBLIC INSTRUCTION.

PROGRESS OF THE UNIVERSITY OF CALIFORNIA.

IN the numbers of THE TEACHER for October, 1868, and April, 1869, we gave a history of the organization of the University, and the steps taken, up to latest date, to infuse life and energy into it. Since then, rapid progress has been made, and the University is now in active operation, with every promise of a glorious future.

The Regents have started it under most favorable auspices, and will leave nothing undone to ensure its efficiency. It now rests with the able and distinguished *corps* of Professors to establish its reputation and make it the pride of the Pacific Coast.

THE EDUCATIONAL STAFF.

Since our last notice, all the vacant Professorships, at present established, have been filled by the election of the following gentlemen:

WILLIAM T. WELCKER, a graduate of West Point, of high attainments, Professor of Mathematics.

FRANK SOULE, JR., of California, a graduate of West Point, and afterwards attached to that Institution as Instructor, Assistant Professor of Mathematics.

PAUL PIODA, Professor of Modern Languages, including English, French, German, Spanish and Italian.

EZRA S. CARR, M.D., Professor of Agriculture, Agricultural Chemistry and Horticulture. Prof. Carr was last from the University of Wisconsin.

WILLIAM SWINTON, A.M., Professor of the English Language and Literature, including Rhetoric and Logic. Prof. Swinton is the well known historian of the War, and enjoys a high reputation as a critic of English Literature.

ROBERT E. OGILBY, Instructor of Drawing.

These gentlemen, with Prof. JOHN LE CONTE, Physics and Industrial Mechanics; Prof. R. A. FISHER, Chemistry, Mining and Metallurgy; Prof. JOSEPH LE CONTE, Geology, Natural History and Botany, and Prof. MARTIN KELLOGG, Ancient Languages, previously elected, complete the Faculty of the University as at present established. Other Professorships will be organized and filled, including a Professorship of Civil Engineering, Architecture and Military Science; of Intellectual and Moral Philosophy, Ancient and Modern History, as soon as the number of students and the necessities of the Institution demand them. At present, the duties of those Chairs are discharged by some of the other Professors.

The Regents have not yet elected a permanent President of the University. Prof. John Le Conte continues as Acting President, to the satisfaction of all concerned.

HANDSOMELY EQUIPPED.

The Regents have devoted special attention to that most im-

portant feature of an Institution of Learning—its thorough equipment with apparatus of the most improved and latest pattern; and for this purpose they have made a most liberal outlay, under the minute instructions of President Le Conte, carried out by Prof. Fisher, himself thoroughly familiar with the nice details of the work entrusted to him. Prof. Fisher was despatched by the Regents in April last to make all necessary purchases of apparatus for all the Departments of the University. He devoted five months of close study and attention to this duty, employing much of the time in examining the extensive and elaborate workshops of the leading English, French and German manufacturers of scientific apparatus. From these, as well as from the best American manufactories, he has made a choice selection, ample to illustrate all the branches of science taught in the University, and embracing many instruments and appliances of novel design and recent invention, at a total expense, for first cost, of about \$16,000 in gold.

This apparatus is now on the way from Europe and New York to San Francisco, and may be expected in ninety days at farthest. Being consigned to the University, it will be entered duty free, and thus the heavy sum a private importer would have to pay for duties will be saved to the University. Making allowances for the large reductions from catalogue prices, obtained by Prof. Fisher, by reason of his extensive purchases from the manufacturers themselves, instead of from dealers at second hand, and for the amount saved in duties, it will be safe to say that the apparatus supplied to the University will be worth all of \$30,000 in gold. Great pains have been taken to procure the latest improvements. Valuable appliances of recent invention have been obtained, to illustrate branches of science heretofore not supposed to be capable of illustration by artificial means.

As an instance, a large number of casts, accurate in detail, colored in imitation of the originals, and of natural size, of all the celebrated and rare fossils in the British Museum and other repositories, and *fac similes* of the most curious and striking geological formations in all parts of the world have been procured. It will readily be understood of what immense service such aids will be to the Professor of Geology in exciting the interest of his class, and in impressing upon their minds, through the senses, the important facts of his science.

We are justified in declaring that no Institution of Learning in the United States is better equipped than will be the University of California when its apparatus arrives. Others may surpass it in quantity; few can equal it in quality. The possession of so valuable a collection of instruments and ingenious appliances will invest the University with special attractions for the students of the Physical Sciences.

OPENING OF THE UNIVERSITY.

It was at first proposed to postpone the opening of the Uni-

versity until the completion of the necessary buildings intended to be erected at Berkeley; but as the friends of the Institution, and the Regents themselves, were becoming impatient to see something definite and practical done, it was determined to commence the University exercises at once. Accordingly, after extensive public notice, the University was inaugurated on the 23d of September in the building belonging to the College of California, thoroughly refitted for the purpose, and in the Brayton Building close at hand, both situated near the centre of Oakland. About 50 students have entered to date, distributed among the various Colleges; most of them, however, in the College of Letters, in which the four classes have been organized. A few applied for admission to the several Colleges of Arts, of which only the Fourth (or Freshman) Class has as yet been established.

The course of instruction has since gone on smoothly and satisfactorily, and assurances are given that both Faculty and students are pleased with their labors, and work together harmoniously. The method of instruction is by means of Lectures and the study of Text-books, accompanied in either case by rigid daily examinations.

The Dormitory System being forbidden by the Organic Act, the students find homes in the boarding houses and in private families of Oakland. Their conduct has been thus far without reproach.

TERMS.

The present (or First) Term of the University ends on the 22d of December, 1869, when there is a Winter Vacation of two weeks. The Second Term begins on the 6th of January, 1870, and expires on the 6th of April, followed by a Spring Vacation of two weeks. The Third Term commences on the 21st of April, and ends on the 20th of July, 1870—Commencement Day—after which there will be a Summer Vacation of nine (9) weeks.

THE UNIVERSITY BUILDINGS.

The Regents originally adopted the plans of Messrs. Wright and Sanders for the new University Buildings to be erected at Berkeley, but in consequence of a misunderstanding, these plans were subsequently withdrawn by the Architects; whereupon, the Regents at once accepted those prepared by Messrs. Kentzer & Farquharson. These plans provide for the construction of two spacious buildings of iron and brick, each embracing a half-basement, and three stories above the basement; the upper one being a finished Attic, with ornamental Mansard roof. One will be known as the "Academic Building;" the other, as "Agricultural Hall." The Academic Building will contain eleven large recitation and section rooms, a Philosophical Lecture Room, a temporary Museum of Mineralogy and a Library.

Agricultural Hall will contain Chemical and Metallurgical Laboratories, Technical Museum, Lecture Room, Library, recitation and class-rooms, store-rooms, and study or retiring rooms for the Professors.

In addition to these principal structures, the plans provide for separate buildings for a Magnetic Observatory, for the President's Office and Faculty Rooms, for seven commodious dwelling houses, to be occupied by the Professors, and for two out-buildings. Provision is made, and space is left, for the erection, at some future time, of an elegant and imposing Central Building, to be the calminating feature of the group, and to contain the grand Assembly Hall, the Library, Museums, Clock Tower and President's rooms.

The Academic Building is to be 154 feet in length, by 63 feet in depth; the Agricultural Hall 150 feet long, by 54 feet deep. The axis of all the buildings is placed nearly North and South, and the space between them is never less than 100 feet, so that the burning of one may not endanger the others. The estimated cost of all these buildings, excepting, of course, the grand Central Building, which will not be put up until more ample means are obtained, is \$230,000.

The corner-stone of the main University Building will be publicly laid with Masonic ceremonies, probably about the first week in December. If the season permit, the foundations will be completed by early Spring, when the work of construction will be prosecuted with the utmost vigor, under the direction of the Executive Committee, consisting of Messrs. Butterworth, Ralston and Stebbins, who are not the men to allow a great enterprise entrusted to them to languish for the want of whip or spur. It is hoped that the new buildings will be sufficiently advanced for occupation by the University in December, 1870, or, at latest, in the Spring of 1871.

A horse railroad from Oakland has already been completed about half-way to Berkeley, and will be extended to the University site by the time the new buildings are finished. This will make the University easy of access, both from San Francisco and from Oakland.

In addition to the 160 acres, forming the University site proper, the Regents have secured a valuable tract of 40 acres adjoining, on the West, of which 30 acres were obtained by purchase of the College of California, and 10 acres by donation from Mr. George M. Blake, of Oakland. Through the liberality of the Trustees of the College of California, the Regents have also secured the right to all the waters flowing from numerous never-failing springs, some of them very copious, situated upon the high grounds to the East and North of their Tract.

THE UNIVERSITY PARK.

The thousands of evergreen and ornamental trees, set out in groves and along the avenues last Spring, are growing finely.

Many more will be added, until the whole tract of 200 acres is converted into a beautiful and attractive Park, interlaced with umbrageous walks and drives and avenues. Nature has already ornamented it with groves and long lines of full-grown evergreen oaks and the deep-hued bay-tree, bordering on both sides of Strawberry Creek—a never-failing stream that flows through the entire length of the grounds. The site slopes gently from the foot-hills on the East, toward the West. It is slightly undulating at the upper end, and from long stretches in the drives, and from every knoll, there is a glorious out-look straight through the Golden Gate (which lies due West), and up and down the Bay, studded with Islands, and white with the sails of a hundred craft. Behind rise the picturesque hills of the Contra Costa Range; to the right and left stretch the fertile plains of Alameda, dotted with handsome villas and cheerful homesteads, terminating in the clustering oaks and mansions of Oakland on the one side, and extending to San Pablo Point on the other. Opposite, in full view, lies the City of San Francisco, that seems to terrace the steep hills behind. Take it all in all, there is not a spot in America, in the vicinity of a great city, that commands so beautiful, so picturesque and so extended a prospect.

The day is not far distant when handsome villas, constituting a continuous village, will cluster around the University site, and its "Academic Groves" will become a delightful resort for the residents of the neighborhood, and its attractive Park a favorite drive for the citizens of Oakland and vicinity. Amid such surroundings, and in a climate unsurpassed, with the prospect of elegant and refined society close at hand, study should cease to be a task, and the intellect should brighten, and the soul expand under genial influences.

OFFICIAL JOURNEYINGS.

The proceedings of the Yolo Institute have been received from the prompt and efficient Secretary, and will appear next month. The State Superintendent was present during one day of the session, and gave a "talk" in the evening. The cause of education is advancing in Yolo county. Just as soon as a difficulty concerning the title to the public school lot is settled, it is expected that a new and excellent public school-house will be erected at Woodland. The Hesperian College, a denominational institution at that place, is doing well, under the lead of our scholarly, genial, go-aheadative friend, Prof. Martin, and his associates. Superintendent Darby (re-elected), both in the school-room and in his official capacity, is doing noble work, aided by a body of teachers steadily increasing in numbers and

efficiency. Woodland, always a pleasant place to visit, is particularly so when the school teachers are there in convention assembled. It was tantalizing to the Superintendent of Public Instruction that he could not tarry longer.

REPORT OF PUBLIC SCHOOLS

ROLL OF HONOR.

NORTH SAN JUAN GRAMMAR SCHOOL, *Nevada County*.—G. W. Stoddard, Teacher. Term ending October 22, 1869.

Masters Oscar E. Hill, Edgar S. McNeill, Willie V. Chapman, C. Frank McNeill, Harold E. Spooner and Thomas Evans.

Misses Lizzie Banks, Gracie Hesseltine, May Peck, Emma Augier, Edith White, Ida Kraemer, Kate Downey, Sarah J. Williams, Mary Banks and Mary Shepard.

WELCOME HOME.—The State Normal School ended its last term on the 5th inst. During the closing exercises an incident occurred which brings to mind one of the chief pleasures that fall to the lot of the faithful teacher. While the audience were listening to the interesting programme of music, essays, select readings, declamations, etc., there was an intermission of a few minutes, when Miss Annie Haas, of San Leandro, came forward, and in a neat and appropriate speech, presented Miss Houghton an elegant BOUQUET—the simple and tasteful offering of appreciative pupils to the faithful teacher, expressive of their joy and welcome on her return to them after an absence of five months to some of the Eastern States. We congratulate teacher and pupils.

“ETYMOLOGICAL REVERIES.”—The article with this caption in our issue for last month, was from THE AMERICAN EDUCATIONAL MONTHLY; and on account of absence from home, the printer made us *fail to give the proper credit*.

ERRATUM.—In the last TEACHER was an error—taking his wheel from Ixion and giving it to Tantalus. The proof (?)—reader claims the honor of the achievement.

BOOK TABLE.

MANUAL OF ENGLISH GRAMMAR. Designed for Public and Private Schools. By E. J. SCHELLHOUSE. Sacramento: H. S. Crocker & Co., Printers and Stationers. 1870.

An intelligent lady of California has styled this book the “*Grammarette*.” The name seems apropos, when we compare the 264 pages, 12 mo., of Harvey, 343 of Brown, 523 of Green, &c., to these 78 pages, 18 mo. The great merit of the work is—*what it leaves out*. Within such brief space the author has condensed the essentials of English Grammar. The cumbersome appendages, borrowed from foreign sources, are discarded, and there is left *only*

the grammar of the English language, which really requires much less space than is usually taken for its adequate presentation. Although it does not entirely meet our ideal of what an English grammar should be, yet it does not offend by useless excessences on that simple structure—the English Language. We commend the book to the thoughtful teachers of the country. Some amusing typographical errors occurs on page 54, which makes *crustaceous* and *constancy* read “constaceous” and “crustancy.”

MAN IN GENESIS AND IN GEOLOGY: Or, the Biblical account of Man's Creation, tested by Scientific Theories of his Origin and Antiquity. By JOSEPH P. THOMPSON, D.D., LL.D. New York: Samuel R. Wells Publisher. 1870.

These seven lectures embrace a wide field of thought—Science and Theology. They bear marks of ability and learning; and if there is a feeling of disappointment after reading some of them—for instance “The Origin of Man,” “The Antiquity of Man,” &c.—the author establishes one point, perhaps all he aimed to establish, to-wit: That as yet science has not successfully contradicted Revelation. Wherein science (?) has contradicted legitimately interpreted revelation, deeper knowledge has shown science to be at fault; that is, science often changes its ground, abandons its theories and hypotheses; and revelation has stood the severest tests of time and knowledge. The theories of Darwin, Owen, &c., are handled with ability, showing that revelation has not suffered at their hands; and, moreover, is not likely to suffer from true Scientists. An occasional grammatical blemish—“Whether man will see Him or no”—offends pedagogical ears. A. Roman & Co.

THE CANDY ELEPHANT, and other Stories for Children. By CLARA G. DOLLIVER, Author of “No Baby in the House.” New York: A. Roman & Co., San Francisco.

A charming book for the little folks, agreeably diversified by prose and verse. The stories are original and well conceived; the poems suitable to the taste of a youthful reader. The fair authoress deserves especial commendation for her masterly defense of the memory of “Margery Daw,” whose name, but for her, would have gone down to future generations in a most unenviable light. Parents, in securing holiday presents, should not consider their list complete without the CANDY ELEPHANT. Price \$1. For sale by A. Roman & Co.

OUR HOME PHYSICIAN: A New and Popular Guide to the Art of Preserving Health and Treating Disease; with Plain Advice for all the Emergencies of the Family. By GEORGE M. BEARD, A.M., M.D., Lecturer on Nervous Diseases in the University of New York; Member of the New York County Medical Society; one of the Authors of “The Medical Use of Electricity,” &c. New York: E. B. Treat & Co.

This book supplies a want that has for some time been felt among the masses of the people—a compend of Medical Science, accurate and reliable; brought down to our times in point of scientific discovery, and written in a style intelligible to the general reader. While the author gives hints, suggestions and modes of treatment in regard to the many diseases which afflict mankind, yet he has done so in a style that is interesting as well as instructive; and he defines the boundary beyond which the sick should not attempt to pass in treating disease, without the aid of the skillful physician. The volume is a fund of reliable information for those who have health and wish to keep it; and for those who have partially lost it, and wish to regain it. Sold by subscription. M. E. Traver, General Agent, 405 Kearney street, San Francisco.

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The Second Term of the current year will commence on the 8th day of November, 1869. All candidates for admission must be present at that time.

COURSE OF STUDY.

REQUISITES FOR ADMISSION.

To secure admission to the Junior Class, Second Division, applicants must pass a written examination on the following subjects, viz.:

Eaton's Common School Arithmetic—to percentage.

Eaton's Intellectual Arithmetic.

Greene's Introduction to English Grammar.

Willson's Fourth Reader.

Spelling; Penmanship.

Applicants for an advanced Class will be required to pass an examination on the studies previously pursued by that Class.

JUNIOR CLASS—*First Session.*

Arithmetic—Eaton's Common School—complete.

Grammar—Quackenbos'—begun.

Geography—Guyot's Common School.

Reading—Willson's Fifth Reader.

Moral Lessons—Cowdery's.

Spelling—Willson's Larger Speller.

JUNIOR CLASS—*Second Session.*

Arithmetic—Eaton's Higher.

Grammar—Quackenbos'—complete.

Rhetoric—Boyd's.

Physiology—Cutter's Elementary.

History—Quackenbos'.

Vocal Culture—Russell's.

Book-keeping—Payson & Dutton's Single Entry.

General Exercises throughout the Junior Year—Penmanship; Object-Lessons; Callisthenics; Methods of Teaching; School Law; Composition and Declamation.

SENIOR CLASS—*First Session.*

Arithmetic—Eaton's Higher—reviewed.

Algebra—Robinson's Elementary.

Grammar—Greene's Analysis.

Natural Philosophy—Quackenbos'.

Physiology—Cutter's Larger.

Rhetoric—Boyd's.

Natural History—Tenney's.

SENIOR CLASS—*Second Session.*

Botany—Gray's.

Physical Geography—Warren's, with Guyot's Wall Maps.

Normal Training—Russell's.

Geometry—Davies' Legendre—five books.

English Literature—Shaw's.

Book-Keeping—Payson & Dunton's Double Entry.

General Exercises—Same as in Junior Year.

REGULATIONS OF THE STATE NORMAL SCHOOL.

Adopted by the Board of Normal School Trustees, March 28, 1868.

1. All pupils, on entering the School, are to sign the following declaration of intention:

' We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State.'

Male candidates for admission must be at least eighteen years of age; and female applicants at least fifteen years of age; and all must possess a good degree of physical health and vigor.

2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

GENERAL INFORMATION.

The time for completing the Normal School course is two years, each divided into two terms of five months.

There will be Written Examinations and Public Exercises at the close of each term. The Graduating Exercise will be in May.

Pupils will be required to furnish their Text Books. Books for reference will be furnished by the State. Good boarding can be procured at about twenty-five to thirty dollars per month.

Applicants will please read attentively the "Regulations" as given above, particularly the Fourth and Fifth.

All graduates will be required to pass an examination on the entire course. Those who complete the studies of the Junior Class will be entitled to certificates of qualification, for teaching schools of Second and Third Grade.

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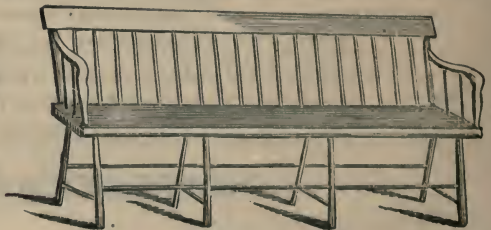
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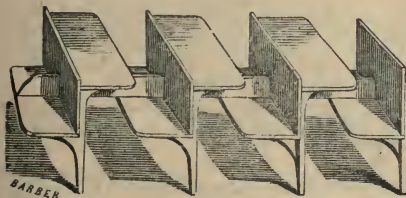


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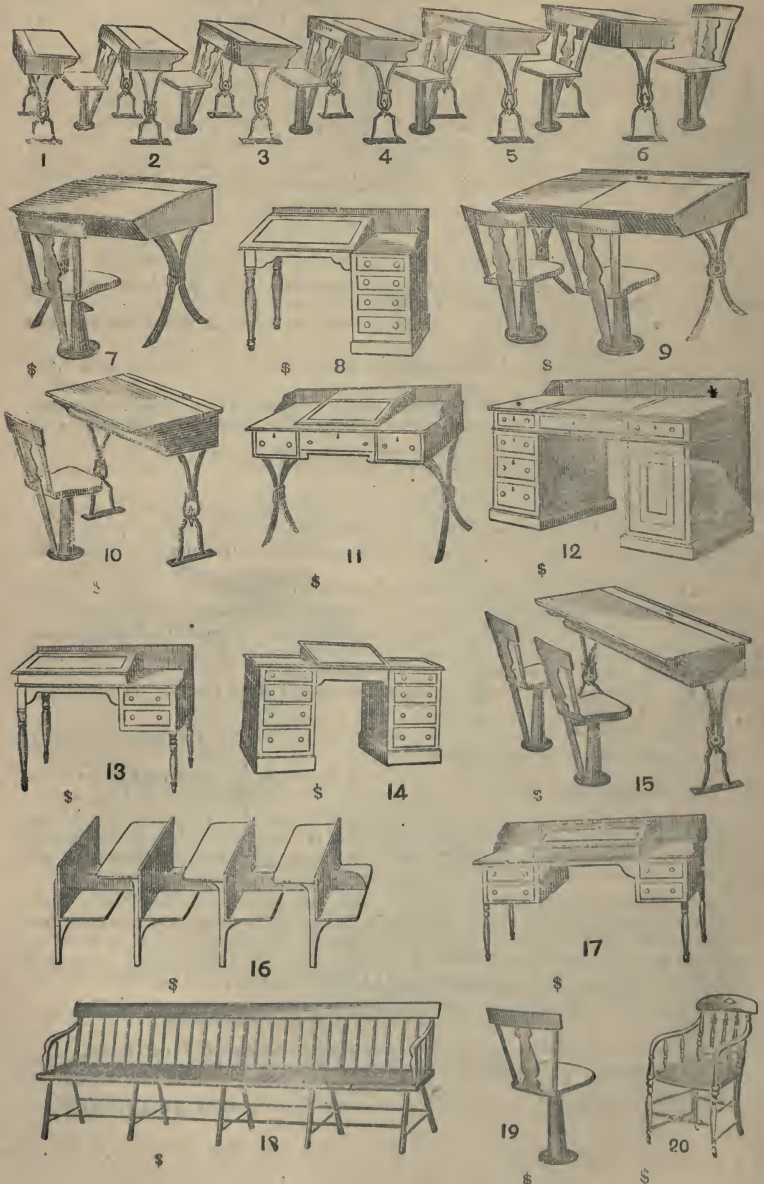
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JANUARY, 1870.

Vol. VII.]

[No. 7.

THE

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THE

CALIFORNIA TEACHER.

JANUARY, 1870.

Vol. VII.

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No. 7.

TEACHING ENGLISH LITERATURE.

SINCE the time when Lord Brougham enunciated the doctrine that "the schoolmaster is abroad," the system of schools in England and the United States has undergone many and much-desired changes. He insisted that the best way of governing the masses was to educate them, to give them higher and nobler instincts, to enlarge their faculties, and, by removing ignorance, many crimes and misdemeanors would disappear from the body politic. What social philosophers had taught was adopted as a political maxim, more especially in the United States, and succeeding years produced from all enlightened States more strenuous efforts looking towards the perfecting of a system of primary instruction or common schools. As the increasing morality following the increase of primary instruction attracted the attention of politicians, the subject became more interesting and improvements were added until, finally, the present varied and complete system was adopted. A child can now commence with the rudiments and finish by graduating in the Normal School—the State wisely and beneficently perfecting its plan by making it procreative.

While the State has successfully achieved its aim in making the citizen more law-abiding and less under the control of his passions, yet, there are dangers lurking under this common education, which should be examined, so as to render more perfect the system already carried so far. The mind awakened into activity, and feeding in fresh pastures, needs a direction, where it may satisfy itself without detriment. Too often the newly-acquired knowledge pushes its owner into the fields of the more purrulent romance.

The increase of sensational weeklies, in which the "Ha! villain!" style prevails, or a sickly sentimentality, shows that this species of journalism must be gaining favor with the American public. The young pass from schools into the various walks of life, and the most earnest advocate of light reading must condemn the heated imaginations, and the unreal, unhealthy notions of life derived from the literature eagerly devoured, as each week brings its load from the Eastern presses. Education is undoubtedly an advantage, but when perverted to bad uses, many cavil at it, and the objections raised should be met by removing the cause, or creating a diversion in favor of something which will remove the reason for the complaint. The remedy is a simple one, and occurs in the answers to the questions: Cannot a taste for literature be developed by our common school system? And have we not a literature to furnish these hungry minds, which can attract the imagination, cultivate the affections, and purify and ennoble the aspirations of American humanity?

The United States possesses essentially an Anglo-Saxon character; the impress of the race is distinctly seen in our laws, manners, religious thought, and even physique—though each year modifies them, on account of the increasing influence and example of Teutonic, Celtic and Latin manners, yet the Anglo-Saxon is destined to be the ruling spirit of the country for years to come.

Among the Latin races, the Venetian boatmen recite Tasso's poem of "Jerusalem Delivered," and the traveller is pleasantly surprised, during the night, to hear the strong, sonorous Italian voices droning across the waters, as one boatman answers the other by the succeeding stanzas.

French waiters and cobblers criticise, with artistic skill and acumen, the works of Corneille, Racine and Moliere.

In Germany, where education is more universal than elsewhere, it is surprising to see the knowledge evinced by the people in the humblest walks of life, of the classical poetry, dramatic and other literary works of their countrymen.

The Anglo-Saxon has no theatre-going propensities, and the drama here requires extraneous aids to draw full houses. The recent letter of the manager of Drury Lane, in answer to some censures passed on him by the press, on account of his substituting *Formosa* instead of the English classics, is a bitter commentary on Anglo-Saxon taste. A true literary taste among the masses in the United States cannot then be developed by the theatre; and, as the common schools reach every class, they must be the vehicles to convey right, and remove false impressions. In order that the pupils may be reached, the teachers should be thoroughly grounded in our literature; their tastes should be cultivated, so as to appreciate what is elegant and forcible in diction, and true and pure in sentiment. We possess a language which is strong and flexible; though not musical to the ear,

capable of expressing almost every shade of thought and feeling; our literature has its origin in our character and intelligence, and its expression in our language. Character, intelligence and language, then, mould the literature of a race, and the student of history will readily remember into what extensive fields of adventure, English or Anglo-Saxon character and intelligence have penetrated. The empires established and conquered, the sturdy efforts in behalf of civil, religious and intellectual liberty, the discoveries in the physical and metaphysical worlds, the warm, earnest, homely and hearty sympathies form a crown which England and her children wear with pride. Of modern languages, Italian is that of music and art; French is best adapted to dialogue, repartee, conversation and mathematical preciseness; German expresses admirably the emotions of the heart, and the kindlier feelings, while its fullness makes it a favorite with students of the sciences; but to English is reserved the capability of furnishing a literature very cosmopolitan and comprehensive. Latin and Greek do not furnish a more exquisite piece of word-painting and delicacy of sentiment than the "St. Agnes Eve," of Keats, or a poem more complete in all its parts than Dryden's *Alexander's Feast*. While the literature of the Ancients smacks of the pugilist and gladiator, that of the English gives an insight into a truer and nobler manliness. Tennyson's "Locksley Hall" tells of an earnest spirit battling against disappointed love, rage, hate and sensuality, and in an elegant style which challenges comparison. The old love songs of Sydney, Marlowe and Ben Jonson are honest expressions of the divine passion delicately mingling affection and pure sentiment. Our essayists, Addison, Steele, Jeffrey, De Quincy and Macaulay charm us with their easy style and brilliant periods, while they entertain and instruct. But why enumerate names, when so many crowd into our minds in every walk of literature, in history, poetry, romance and the drama?

A pupil graduating from the public schools has a mind with new wants and a character very plastic; shall these wants be satisfied with good, healthy food, or the sickly sweets of the current literature of the day? Is it wise to create desires, without teaching the means of gratifying them properly? This plasticity, pertaining to all young minds, can be turned to good use and into channels whereby they may be strengthened and ennobled. Often the young mind, cloyed with pernicious reading, turns with disgust from all books, and finds solace in excitements which destroy soul, mind and body. And the evil is a growing one; every month gives an addition to that already too numerous class of weeklies, pictorials and dime novels which grace the shelves of book and paper stalls on our streets, diverting many dimes from the vendors of balls, marbles and candies. The disease has already made considerable headway, and demands a prompt and efficient remedy, which is, to cultivate a taste for our

standard authors in the public schools,—commencing with light, entertaining and amusing, but not bad books, and gradually leading the pupil on to those more solid and instructive.

The administrative capacity of those having the charge of our public schools will readily suggest the means of carrying the details into effect; and the increasing stability of character will more than repay the State for the trouble incurred. Fast young men and frivolous young ladies will become rarer; that superficiality of education, a common charge against America, will disappear and be numbered among the questionable old things of the past, whose demise we duly mourn from year to year.

We educate enough, but, like a bad general, fail to secure the fruits of victory, in not teaching how to apply this education rightly. Could our masses be more introduced to the beauties of our literature, its intrinsic good qualities would give it a lasting prominence among the pleasures of the people.

THE LITTLE HAND, A STORY.

DEDICATED TO YOUNG TEACHERS.

I READ in the *Bulletin*, a few days since, an item copied from an Eastern paper, giving an account of a case of discipline by a female teacher—perhaps I should say lady. The subject was a small boy, and the method of punishment fatally injured the head. What the grave offense was that called for so grave treatment, we are not informed. The almost immediate consequences were fever, insanity and death. “Troubles do not come singly;” an aggravating circumstance added torture to anguish. The father had already been called by telegraph to the bedside of another dying boy, when this last bolt struck, and the tree that had been shocked was now peeled and blasted. We said we do not know how the teacher had been troubled; whether or not she had been annoyed, tried or insulted till patience was wearied, reason abandoned and passion had been allowed to usurp the throne; so we have no judgment to enter—no blame to measure. Retributive justice came speedily; all through the delirium the poor boy kept begging, piteously, “Don’t strike me—don’t strike me.” The memory of this scene will be judgment enough.

We wish to use this bit of school history as a text upon which to say a few words. It brings to mind another case that happened not long ago nearer home, and which, therefore, speaks more directly to us. In this case the teacher was a female, also, and the pupil was a little girl—a dear, sweet child, tender, sensitive, affectionate and altogether lovable; and the point we wish to press is, that, such natures are not to be dealt with as may be, possibly, those that are naturally rude, low in mental

and spiritual organization and development—never at home, knowing anything of love, kindness, sensibility, beauty, whose whole treatment is of an animal character. Though we do not wish to infer that *such* may be abused. It would seem that at school our teachers would all appreciate this difference in character and discriminate, and act accordingly; even the *very young* teachers—of which there are a large number, and the one referred to was one of them.

The case to which we refer in the following little story was not one of discipline, properly, only of harsh treatment—and which when seen under the clear strong light of that revealing lens *truth*, with all attending circumstances contributing their item—it was cruel and—to her little heart—was torture.

The teacher was not naturally a cruel teacher, by any means; on the contrary, I believe her to be a gentle, amiable lady, as much so as any of us—and that that event may happen any day in almost any school-room. But want of consideration—lack of judgment—carelessness—thoughtlessness in speaking, hasty action, giving no chance for reason to dictate, measuring all minds, all spirits, by a machine of fixed calibre—crushing some and stretching others—is what works mischief perpetually and is a course to be condemned and protested against as a hardening process, not to be known out of a heathen community. There are traits of character in the American Indian, the Spartan, and the Hindoo—that, upon the page of history, may seem admirable; but they are not a Christian growth. Such are stolid indifference to bodily pain—and an equal indifference to the sufferings and sorrows of others. By persistent training, the cords of sympathy may be shriveled and the fountains of feeling be dried up. Certain routines of habit, of thought and action, may turn a human nature into a metallic one, that shall—ever under the conditions—be deaf and dead to all appeal from the gentle, tender, blooming side of our being. It blights childhood, as frost blights those modest flowers that cling to sunny banks only. The “crimson sweat” of Jesus, it has been thought—was the result of suffering in a nature immaculate, sensitive and sublimated beyond human conception—a grosser nature would never have manifested it. Too often we seem ashamed of tenderness; we steel our hearts against it; and so, every day sees a thousand times repeated—the sweet violets of human life torn—crushed, trampled—and laid out of our sight. 'Tis a bald mystery, ruthless, inscrutable as fate—an endowment of pain without compensation—that no heart can bear that is not fossilized or heathenized, or that has not a martyr's faith in the beatitudes of the life to come. * * * * *

“Little Lizzie was six years old. She was too young to be put into the crowd of a public school, we thought—and we hesitated a long time before agreeing to do it. But her cousin, several years older, was going, and we finally concluded to allow

her to go—though she had just risen from the measles. She was earnest to go, and, when permitted, was delighted and enjoyed it highly to the end. She felt proud and dignified with her book and little tasks, and we all enjoyed witnessing her enthusiasm, and felt satisfied we had not erred in gratifying her. So she continued. She had been in school just one month. One day she came home, under escort of her faithful cousin, in sad humiliation and disgrace; her little heart seemingly crushed, and she sobbing pitiably—‘Oh! mamma, mamma!’ By degrees she was able to speak—she told her story—in fragments and fitfully—‘I—felt sick—mamma—I—held—up—my—hand—and the teacher—would not—let—me—go out. I held up—my hand again—and she called me up—before all—the children—and scolded me—and sent—me home—Oh! mamma.’ That was all. Stifed with sobs, she could say no more. It was enough. Too sick to sit in her seat, she had been rudely scolded before the pupils and dismissed—and that too—when she had done all she could do—under the law—and in the politest manner, viz: hold up her little hand—as a token of petition—pleading. This one thought had burned into her very soul. She dwelt on it till dark. We tried in vain to soothe or comfort her. She had been hurt—disgraced beyond help. We laid her in her little crib, tortured with a terrible headache, and in a high fever. We had hope in sleep, rest and the elastic spring of childhood. We trusted that in the freshness of the morning air—the bright sunlight—the love of all her friends, and the caresses and petting of the dearest, that she would forget the agony of this first crushing mortification, and would be herself again. Alas! it never came. We had to stifle that hope. Before midnight, the flame color on her cheeks, suffusing all her neck and chest, told the fearful story—scarlet-fever. All that night, and the forty-eight hours of life that followed, the little white hand could not be kept below the sheet. It was held up constantly—and that touching moan—‘Oh mamma! I held up my hand’—was continued as long as strength would permit. At last she lay still. The celestial aurora was dawning on her young spirit—and presently there came the messenger with inverted taper—and she went up to where the shining ones will answer all her pleadings. Lizzie sleeps under the California violets—but her little story I shall hear uttered—every hour, forever, through life—and the spiritual photograph of that little hand is *set* unalterably upon memory’s immortal tablet.” * * * * *

Shall we blame any one? The devoted mother of that dear child—cultivated, refined, thoughtful, gracious—had no reproach to cast—no blame to lay upon any; not even in that last hour of exquisite pain, when a formal note from the school was sent into that chamber—shrouded in the fearful eclipse—“Lizzie has been absent from school three days—please attend to it.” No—not even when “sitting with sorrow” in bereavement; nor

when the dark curtain was drawn that shut the sweet star—forever—from sight;—and we must have none. Only let the costly lesson stand in letters of fire before us to-day, to-morrow, forever.

REBELLION IN THE ENGLISH LANGUAGE—RULES DEFIED.

MR. A. F. HILL's article in the last (November) number of THE TEACHER on "Common Errors in Orthoepy, Orthography and Syntax," contains much that is instructive and entertaining, and displays no little study and research.

His rule for the proper spelling of words ending in *eive* and *ieve* is valuable, although he is mistaken in supposing there are no exceptions to it.

The first part of his rule reads:

"When the syllable containing the diphthong begins with the single consonant *c*, as in receive, the *e* precedes the *i*, thus following the *c*."

I believe this is true in all cases. *Science*, and its derivatives, *conscience* and *prescience*, are not exceptions, because the two vowels are preceded by another consonant beside *c*. Moreover, *ie* in *science* is not a diphthong, each vowel being distinctly sounded. The only apparent exceptions I have discovered are *superficies*, and that is a purely Latin word, naturalized, without undergoing change, and *glacier*, which is imported French.

The second branch of his rule reads:

"But, in all other cases, such as *grieve*, *believe*, etc., [meaning in all cases in which the diphthong is preceded by some other consonant than *c*] the *i* precedes the *e*."

This is far from being universally true. It holds good in the following words:

Reprieve,	Pier,	Tierce,	Yield,
Believe,	Mien,	Retrieve,	Friend,
Relieve,	Piece,	Friend,	Fierce,
Brief,	Liege,	Wield,	Thief,
View,	Niece,	Tier,	Bier,
Grief,	Lien,	Patience,	Field,
Sieve,	Siege,	Salient,	Shield,
Fief,	Soldier,	Chief,	Lief,

and their numerous derivatives.

But the following make a formidable array of exceptions:

Feint,	Forfeit,	Seine,	Sleigh,
Counterfeit,	Neighbor,	Inveigh,	Vein,
Deign,	Inveigle,	Freight,	Foreign,
Their,	Sleight,	Reign,	Leisure,
Height,	Seize,	Neigh,	Surfeit,
Skein,	Veil,	Weight,	Weir,
Heir,	Rein,	Neither,	Weird,
Heinous,			

and their derivatives.

It will be seen that the exceptions are almost as numerous as

the cases covered by the rule—so numerous as to destroy its usefulness.

A highly educated German, who had studied our language critically, and who spoke it fluently, informed me, not long ago, that he had discovered a rule which governed in this class of cases. It was this:

“Whenever one of the earlier consonants of the Alphabet, such as *b, c, d, f*, etc., say up to *m*, immediately precedes the diphthong, the *e* occurs before the *i*; but if the preceding consonant be one of the last letters in the Alphabet, then the *i* is written before the *e*.”

This looked, at first glance, like a discovery, for it truly applies to a large number of words, but if the test be applied to the list given above, it will be seen that it fails in thirty cases out of seventy.

There seems to be no recourse but hard study to master the spelling of such words.

Our language in such a Mosaic, made up from so many different sources, and those sources differing so widely in origin, in structure and in idiom, that in the nature of things, analogy is of little use, and generalization is difficult, if not impossible.

My German friend, before alluded to, asked me, with almost tears in his eyes, what prospect there was of a foreigner acquiring a perfect knowledge of our language, short of a lifetime of ceaseless study, when he finds words spelled exactly alike, and yet pronounced differently, and having entirely different meanings.

How confounding, for instance, such cases as these:

Row, a disturbance, and *Row*, a series of things.

Lead, to conduct, and *Lead*, a metal.

Tear, to rend, and *Tear*, moisture from the eye.

Live, to exist, and *Live*, imbued with life.

Lower, to let down, and *Lower*, to threaten a storm.

Read, to peruse, and *Read*, the past tense of *Read*.

Bow, to bend the head, and *Bow*, the archer's weapon.

Sow, to scatter seed, and *Sow*, the female hog.

Tower, one that tows, and *Tower*, a fortress.

What must be his distraction, when studying that large class of words in which the sound is the same, but the orthography and meaning different! What must he think when told that *Rain, Rein, Reign* are all pronounced rane?

Imagine him puzzling over the following: *Right, Rite, wright, write*;—*vain, vein, vane*;—*toe, tow, to*;—*sow, sew, so*!

My aggravated friend went on with a score of such grievances.

He summed up, finally, with the following charges against the English language, and the worst of it is, they are all true:

It is impossible to spell a word from its sound.

It is impossible to sound it from its spelling.

It is impossible to define it from its sound.

It is not always possible to define it from its spelling.

The same word has the accent first on one syllable, and then on another, and the change of accent produces a change of meaning, thus:

Accent on last syllable.

Conduct,
Preface,
Desert,
Perfect,
Convict,
Prefix,

Accent on penult.

Conduct,
Preface,
Desert,
Prefect,
Convict,
Prefix,

and numerous others.

Here a change of accent converts a verb into a noun.

Orthography, pronunciation, idioms, are all stumbling blocks to the stranger, and the wonder is that he ever learns to speak and write our English correctly.

It is a bundle of anomalies, contradictions, irregularities and ambiguities.

The letters masquerade in Protean characters, the accent skips from syllable to syllable, and whole troops of words rebel against the discipline of rules, while the origin of many of our idioms is so utterly inexplicable as to seem like lunatic utterances, or thoughts run wild, caught and caged.

THE SECOND GROWL OF A SUBSTITUTE.

I HAVE observed that my "Growl" has raised a howl from the guilty ones.

"Why do not these substitutes *take* their lunches, if they want them, and not abuse us because their stomachs are empty?" remarked a flaxen-haired beauty who sat beside me at the Institute.

"Oh! that costs too much," rejoined her companion.

My old brown veil hid my burning face, but it would have made no difference if it had not, for nobody ever notices *me*; but I thought to myself, "Miss Prettyface, if you had a real womanly heart, you would know that the empty stomach is nothing, but the stung pride is much; it is not so much the hot tea, as the warmth of kindness and civility which makes us comfortable. *You* were once a substitute, Miss Prettyface, were you always asked in to tea? Were *you* never half-fainting with fatigue—and forgotten? But what is the use of asking? I know as well as you do, that you have a passport in that flaxen hair to everybody's memory, and that it is only Ann Jenkins and those like her who are politely (?) ignored."

I knew the girl was as empty-headed as she was shallow-hearted, and as she was not worth wasting so many thoughts upon, I have reproduced them here.

I substituted for Miss Prettyface once; she sent word to the office that she was sick, but I was frankly informed afterwards that the dressmaker was in the house that day, and that she was

not so sick but she was able to sew on the sewing-machine all day.

Oh dear! this is a queer world!

But that was not the queerest thing about Miss Prettyface's absence, by any means; I went immediately from the office, and arrived there at half-past nine to a minute; yet, after waiting *seven* weeks for my pay, I received just one dollar and ten cents, or pay for half-a-day's work, minus *two-and-a-half* cents. But she is *such a sweet girl*, the Director says who got her the position; and I echoed in my mind, as I glanced down at my old striped dress, and dyed and mended gloves, "Yes, yes, she is indeed a sweet little thing!"

Our instructions are, to continue to take charge of a class until we are otherwise notified; yet I could not count on all my fingers the times that I have *not* been notified, and have gone to the school, sometimes a couple of miles away from home, and found the teacher already there. One or two have apologized for the trouble given me, and the rest have coolly stared at my clothes, and wondered how many years old my hat is, but never has *one* paid me, as the Manual requires.

I thought when the Janitors were being pulled over the coals, that if the energetic Directors would turn their attention to *this* violation of School Rules, by which we poor substitutes are defrauded, that they would be well occupied.

"Whose class are you going to take?" said a fellow sufferer to me one day, as I was jubilantly departing with an order; as I told her the name of the teacher, her expression changed, and she said, warningly, "I don't envy you. *She* cannot keep any order whatever in her class, so of course you can't; and besides she never pays until she has been dunned a couple of months."

I departed with a heavy heart, which was still heavier before I got my money.

Yet these teachers are said to be *so* pretty, and *so* witty, and altogether so hedged about with divinity, that no hand is daring enough to stretch itself out, and correct the staring injustice.

It is these women who talk about Women's Rights, and "demand" them of the men who arrogate to themselves the title of "Lord and Master." *I*, plain and uninteresting, *I*, Ann Jenkins, am also in favor of Woman's Rights; *I* join my cry with theirs for equal pay for equal work; *I* ask with them, nay, *I demand* with them, that education, ability, and conscientiousness, not *sex*, shall be made the distinction in voting; but *I* ask, also, the Rights of Women from women; and it sickens my heart when I see them stretching with one hand after the vote, and holding back with the other the hard-earned money of a poor, helpless girl.

If they did but know how much truer women, how much better Christians they would be for the kindly consideration they would show by asking a stranger in to tea; if they could but see

how wretchedly inconsistent they are, in *asking* for justice, and *giving* none; if they could but see how they are furnishing a strong argument against the cause they are working to sustain, I feel sure that they would cease grasping at the star, and pick up the diamonds at their feet; for gratitude and kindness are jewels worthy of any woman's wearing; which could adorn them all.

Substitutes are not favorites; those same teachers, who pay for half-a-day's work, keep us waiting two or three months for our money, and fail to either notify us, or pay us for our loss of time, are in the habit (and a charming ladylike habit it is, too,) of sneering at Miss Jenkins and Miss Jones, because they fail to maintain order in a class, all strangers, and all on the *qui vive* for a good time, now that their teacher is absent, and they are pretty certain to escape punishment; yet these teachers themselves fail to keep order, with all their advantages. And if they had not those beauties of face, and graces of mind to recommend them, or powerful friends to protect them, they would have been turned out long since, and made way for those who would do the duties required of them.

It is well known that an incompetent teacher, who has deservedly lost her or his position (for strange to say, even our Grammar Masters and sub-masters are often incompetent, although they do *not* often lose their positions;) these teachers, I say, have a much better chance of regaining their places, than we applicants, who *may be* successful. "Our Public Schools" are *not* a failure, but many of the teachers are.

But alas! I never had the gift of shedding "liquid pearls," nor looking with "beseeching glances from large brown eyes;" then, unfortunately, my cheeks are neither red nor pale, but a kind of disagreeable mixture; I am not an orphan, nor is my mother dying of consumption—though she may be of hard work and worry; so I must await the coming of that homely and timid Director, who will need but to *look* at my faded dress and dilapidated hat to see that I am sorely in need, even of the not very princely salary of fifty dollars per month; and if a look does not tell him, he never will know, for *I* never will. I wonder much, even when that Director comes, whether he will not do as the rest do, and admire a handsome face all the more because he has not one himself; and whether his timidity will not prevent him from saying one word about me or anything else. If he be not what I hope, then alas! for the vanishing traces of amiability in

PLAIN ANN JENKINS.

—•••—
THERE is a standing challenge to find a rhyme in the English language for the word "silver."

Behold the problem solved!

Knowest thou not that the nitrate of silver,
Is often employed by housewives to kill ver-
min and rats and nasty cockroaches,
And thus rid themselves of husbands' reproaches?

PROCEEDINGS OF THE YOLO COUNTY INSTITUTE.

PURSUANT to published notice, the Teachers of Yolo County assembled at the court house at Woodland, on Thursday, the 4th of November, at 10 o'clock A. M.; Superintendent Darby presiding. The exercises of the Institute were opened with prayer by Prof. Martin of Hesperian College. W. F. Dickinson was elected Secretary, and Miss H. E. Wright, Assistant Secretary.

The Chair appointed the following committees:

On Music—Prof. Walla, Miss Hattie Lowe, Miss H. E. Wright, Miss Lucy Nelson, Mrs. Cross, A. H. Pratt, and Prof. Simpson.

On Resolutions—C. G. Kenyon, W. W. Stone, E. B. Banks, D. T. Seely, Prof. Freeman, Mrs. F. M. Pettingal.

On Introduction—A. H. Pratt, J. W. Kalbaugh, J. Coats.

Institute adjourned until 2 P. M.

AFTERNOON SESSION.

Institute met pursuant to adjournment; Superintendent Darby in the Chair.

Minutes of morning session read and approved.

The Chair appointed the following committee

On Criticism—C. G. Kenyon, J. W. Kalbaugh, Miss Mary K. Flournoy, Mrs. F. M. Pettingal.

Superintendent Darby introduced the Hon. O. P. Fitzgerald, State Superintendent, who occupied the Chair for the afternoon.

The programme being taken up in regular order, the first exercise was on Arithmetic, by C. G. Kenyon, who gave evidence of a thorough acquaintance with the science. An interesting and profitable discussion ensued among the members as to the most effectual way of imparting a knowledge of it to children. The State Superintendent made a few remarks upon the Metrical System, expressing the opinion that it was destined at an early day to supercede all other methods of computation, and advising teachers to be ready for the change.

The best method of teaching Geography next engaged the attention of the Institute. The class exercises were conducted with marked ability by W. H. Edwards, and the Institute exhibited considerable interest in the subject.

The programme was, after some discussion, so changed that the Lecture of W. W. Stone, and the Essay of D. T. Seely, should be delivered on to-morrow morning.

Institute adjourned until 7 o'clock P. M.

EVENING SESSION.

Institute met pursuant to adjournment; Superintendent Darby in the Chair.

Music by the Committee.

The Chair introduced Hon. O. P. Fitzgerald, who proceeded to deliver an able and entertaining address on Education. It was well received by the whole house, and the speaker was im-

mediately and unanimously voted the thanks of the audience.

Mr. W. W. Stone then read an original poem, which was sufficiently humorous to "bring down the house."

Institute adjourned until 9 A. M. Friday.

FRIDAY—MORNING SESSION.

Institute met pursuant to adjournment; Superintendent Darby being detained on official business, Prof. Freeman was called to the Chair, until his arrival.

Minutes of preceding session read and adopted.

Report of the Committee on Resolutions received and the Committee discharged.

D. T. Seeley withdrew his name from to-day's programme.

W. W. Stone delivered an able Lecture on "Man, his Mental and Moral Culture," which was well received.

W. F. Dickinson then read an Essay on Grammar; after which, Prof. J. W. Kalbaugh conducted class exercises in Phonography. This science seemed to interest all of the members, as but few of them had seen it demonstrated.

After passing a vote of thanks to W. W. Stone for his morning Lecture, the Institute adjourned until 2 P. M.

AFTERNOON SESSION.

Institute met pursuant to adjournment; Superintendent Darby in the Chair.

Music by the Committee.

Minutes of morning session read and adopted.

Critics' Report received.

On motion, Miss Annie Gaddis was invited to read an Essay, which she was unable to do on account of indisposition.

The subject of Grammar was then discussed by F. E. Baker, followed by remarks from Messrs. Seeley, Simpson, Stone, Kenyon, Freeman, Coats, Edwards, and the Chair.

On motion, the Chair appointed the Secretary to read the Essay of Miss Annie Gaddis, at the conclusion of which reading, she was tendered the thanks of the Institute.

Prof. Freeman demonstrated his manner of teaching Intellectual Arithmetic in a very plain and comprehensive manner.

On motion, the Chair appointed the following on the Committee of Arrangements for the Social Reunion: Messrs. Kenyon, Stone, Edwards, Misses Wright and Flournoy.

Report of Critics received.

In order to attend the Hesperian Literary Society, the Institute adjourned until 9 A. M., to-morrow.

SATURDAY—MORNING SESSION.

Institute met pursuant to adjournment; Superintendent Darby in the Chair.

Roll called and minutes of preceding session read and approved.

The Report of the Critics, showed they had not been forgetful of their duties.

The class exercises in Algebra, conducted by A. H. Pratt, were of a thorough character, accompanied with some useful information from Profs. Martin and Simpson.

In consequence of not being able to procure suitable books, the Lecture of Prof. Martin on Elocution was omitted.

The Method of Teaching to Spell by Writing was discussed by Messrs. Seeley, Martin, Kalbaugh, with remarks from the Chair.

The Institute adjourned until 2 P. M.

AFTERNOON SESSION.

Institute met pursuant to adjournment; Superintendent Darby in the Chair.

Roll was called and minutes of preceding session read and adopted.

The subject of Text Books was taken up and discussed by Messrs. Ball, Baker, Pratt, Stone, Kenyon, Dickinson.

Rev. W. C. Damon was introduced by the Chair, and made a few remarks regretting his inability to fulfill the part assigned him on the programme.

The subject of resolutions was next taken up, and, after a discussion of much spirit, in which nearly all of the gentlemen present participated, the following were adopted:

Resolved, That as the welfare of a people depends upon the intelligence of the masses, it is the duty of all good persons, especially of teachers, to endeavor to induce all parents to give their children the full advantages of the common schools.

Resolved, That a frequent change of teachers is detrimental to the cause of Education.

Resolved, That as the teacher is the standard by which the character of the pupil is formed, his conduct should be such as would be a fitting model.

Resolved, That Section 78, of the Revised School Law, should be so altered as to make it optional with the Trustees of each district either to appropriate the ten per cent. of the State School Fund to the purchase of a District Library, or otherwise, as they may deem most to the interest of their respective districts.

Resolved, That Section 101, of the Revised School Law, should be so amended as to empower the School Trustees to levy rate bills, at such times as they may deem to be to the best interests of the schools.

Resolved, That the interests of the schools would be greatly promoted by the substitution of Monteith's Series of Geographies, for all others of this branch in our list of Text Books.

Resolved, That the Revised School Law should be so amended as to make it optional with the County Superintendent whether or not the examination of teachers for procuring certificates shall be held during the session of the Institute.

Resolved, That after a careful examination of the merits of Quackenbos' Grammar, we find it inadequate to meet the peculiar wants of youthful students; and therefore, we earnestly petition the State Board to drop said work from the list of Text Books to be used in our public schools.

Resolved, That we deem Brown's Grammar the most suitable for substitution.

Resolved, That as the teacher should teach by example as well as precept, the use of tobacco should be abolished from the school-room.

Resolved, That in the opinion of this Institute, the Bible should be adopted as the text book of morality in our common schools.

Resolved, That the thanks of the teachers are due and are hereby tendered to Hon. O. P. Fitzgerald, for the able and instructive address delivered by him before this Institute.

Resolved, That the thanks of the teachers are hereby tendered the officers and students of Hesperian College, for the courtesy extended during the sessions of this Institute.

Resolved, That we return our thanks to the Committee on Music, for their able performances during the sessions of this Institute.

The business of the Institute having been finished, Superintendent Darby rose and delivered an Address. [Address not forwarded to us.]

On motion, it was declared that "the thanks of this Institute are hereby tendered Superintendent Darby, for the faithful and efficient manner in which he has presided over this Institute."

The Institute then adjourned *sine die*.

A Social Reunion was held in the evening.

W. F. DICKINSON, Secretary.

FOREIGN WORDS AND PHRASES.

BY A. F. HILL.

THERE is no use in enjoining it upon Americans and others who write the English language, to write it in its purity, dispensing with all foreign words and phrases. It would only be a waste of time. They *will* use them; and in view of the fact that our language is made up of words from other languages, and is continually receiving further accessions, in the shape of Anglicized foreign words, they are excusable. But what I desire particularly to urge upon the general reader, is this: *Do not*, if you would not appear ridiculous in learned eyes, attempt to use foreign words and phrases, unless you are familiar with their signification, and can both spell and pronounce them correctly. To pronounce them accurately, especially if they are French or Spanish, is the most difficult part. A correct pronunciation may be acquired by consulting the Dictionary, where they are carefully marked, or re-spelled, but not otherwise: especially not by merely seeing them in print. Beware! Latin words are not so hard to pronounce, because their original pronunciation is not known, and the English and Americans pronounce them in conformity with the pronunciation of English words. One thing that should be remembered, however, is, that it is a rule with but few exceptions that Latin words contain a syllable for every vowel. Hence, *vice* is a word of two syllables, thus: *vi-ce*. The following words are thus divided: *si-ne di-e*, *De-o*, *da-te*, *dul-ce*, *an-te*, *al-i-bi*, etc. The following Latin words, and many others too numerous to mention, are all marked in the Dictionary with the first sound of *a*, as in *game*, *late*, etc., and *not* with the second

sound, as in *cat*, *rat*, etc., as we often hear them pronounced: *verbatim*, *literatim*, *ignoramus*, *gratis*, *habeas*, *apparatus*, (which, however, is now an Anglicized word), *seriatim*, *seriapis*, *rabies*, etc.

French words and phrases are getting to be pretty freely interspersed through our language. Many of them we must allow to retain their original pronunciation, because to give them an English sound, as they are spelled, would make them sound almost ludicrous. For example, *sobriquet* is properly pronounced so-bre-ka, the accent being on the last syllable. How would *sobri-quet* sound? *Cabriolet* is another example. It would be almost melancholy to hear it called cabrio-lett. In England, the word is abbreviated to *cab*. It is not much used in this country. In French, *e* has the sound of our *a*, and *i* of *e*, as in *elite*, pronounced *a-leet*. *Eau* is pronounced like *o*, as in *beau*; *ou* as *oo*; *ch* as *sh*; *en*, *ent*, and *ant*, through mouth and nose both at once, as *ong*, though the *ng* is dropped; *ance* as *ons*; hence, *attache* is pronounced *at-ta-sha*—the accent being on the last syllable. *Nonchalant* is pronounced *known-sha-lo(ng)*; *nonchalance*, *known-sha-lons*; *denouement*, *da-noo-mo(ng)*; *couchee*, *koo-sha*; *coupe*, *koo-pa*; *coupon*, *koo-po(ng)*; *couteau*, *koo-to*; all of which words have the accent on the last syllable, except *denouement*, which has it on the second.

It should be borne in mind that the French *age* is pronounced *ozh*—the *o* very short—hence, *mirage* and *badinage* are pronounced *me-rozh* and *badi-nozh*—the former accented on the last syllable, the latter on the first. *Ennui* is *o(ng)-nwe*, and *suite*, *sweet*.

There is an endless variety of French words that are frequently used by English speakers and writers, and it is impossible to notice them all. But please bear in mind what I before enjoined: “*Never use a foreign word of which you do not thoroughly comprehend the meaning, or which you know not how to spell and pronounce.*”

German words and phrases are not so frequently quoted in the English language, as Latin and French; but many of our words are derived from the German. We have a great many Germans in this country, and as they have all brought their names with them from *Vaderland*, it is important that we should know how to pronounce them. They are not so complicated as French names, and yet there are some *ei*'s and *ie*'s about them, which are calculated to puzzle the uninitiated. The rule for the pronunciation of the diphthong *ei* or *ie* of the German is: Give it the first or long sound of the last of the two letters. Hence, *Hiester* is pronounced *Heester*; *Steinway*, *Stine-way*. *Greider*, *Gri-der*; *Seiler*, *Si-ler*; *Fahrenheit*, (name of the inventor of the thermometer in common use) *Fahren-hite*; and I might add, although the fact is pretty generally known, that *bier* spells *beer*.

The *au* in German is pronounced the same as our *ou*, as in *house*. Hence, the Germans spell the word *haus*. Many exam-

ples might be offered, among which is the orthography of that excellent oleraceous dish—*saur-kraut*, in English.

The German proper names, *Krause, Strause, Bauer, etc.*, often to be met with, are pronounced, according to the rule given in the above examples, *Krouse, Strouse, and Bower*.

I might give many other examples, but have not the space. I will conclude by informing the reader who is unfamiliar with the German, that he can almost rely on it as a certainty, that he will mispronounce every German word he sees in print, unless he shall first take the trouble to obtain the proper pronunciation from some good source.

MISCELLANEA.

HEALTH OF SCHOOL CHILDREN.—The Medical College of Middlesex, Massachusetts, having for a long time considered the influence of public schools on the health of children, authorize the publication of the following facts as the opinions of its members:

1. No child should be allowed to attend school before the beginning of his sixth year.

2. The duration of daily attendance—including the time given to recess and physical exercise—should not exceed four and a half hours for the primary schools; five and a half for other schools.

3. There should be no study required out of school—unless at high schools, and this should not exceed one hour.

4. Recess time should be devoted to play outside of the school room—unless during stormy weather—and as this time rightfully belongs to the pupils, they should not be deprived of it, except for serious offences; and those who are not deprived of it should not be allowed to spend it in study; and no child should ever be confined to the school room during an entire session. The minimum of recess time should be fifteen minutes each session, and in primary schools there should be more than one recess in each session.

5. Physical exercise should be used in school, to prevent nervous and muscular fatigue, and to relieve monotony, but not as muscular training. It should be practised by both teacher and children, in every hour not broken by recess, and should be timed by music. In primary schools, every half hour should be broken by exercise, recess or singing.

6. Ventilation should be amply provided for by other means than by open windows, though these should be used in addition to special means during recess and exercise time.

7. Lessons should be scrupulously apportioned to the average capacity of the pupils; and, in primary schools, the slate should be used more and the books less, and the instruction should be given as much as possible on the principles of "Object Teaching."

CHARLES DICKENS' COUNSEL TO STUDENTS.—Charles Dickens, in his recent speech at Birmingham, said:—To the students of your industrial classes, generally, I have had in my mind, first, to commend the short motto, in two words, “Courage—Persevere.” This is the motto of a friend and worker. Not because the eyes of Europe are upon them, for I don't in the least believe it, nor because the eyes of even England are upon them, for I don't in the least believe it; not because their doings will be proclaimed with blast of trumpet at street corners, for no such musical performance will take place; not because self-improvement is at all certain to lead to worldly success, but simply because it is good and right of itself, and because, being so, it does assuredly bring with it its own resources and its own rewards. I would further commend to them a very wise and witty piece of advice on the conduct of the understanding which was given more than half a century ago by Rev. Sydney Smith—wisest and wittiest of the friends I have lost. He says—and he is speaking, you will please understand, as I speak, to a school of volunteer students—he says, “there is a piece of foppery which is to be cautiously guarded against, the foppery of universality, of knowing all sciences and excelling in all arts—chemistry, mathematics, algebra, dancing, history, reasoning, riding, fencing, Low Dutch, High Dutch and natural philosophy. In short, the modern precept of education very often is, “‘Take the Admirable Crichton for your model, I would have you ignorant of nothing.’” Now, says he “my advice, on the contrary, is to have the courage to be ignorant of a great number of things, in order that you may avoid the calamity of being ignorant of everything.” To this I would superadd a little truth, which holds equally good of my own life and the life of every eminent man I have ever known. The one serviceable, safe, certain, remunerative, attainable quality in every study and every pursuit is the quality of attention. My own invention or imagination, such as it is, I can almost truthfully assure you, would never have served me as it has, but for the habit of commonplace, humble, patient, daily, toiling, drudging attention. Genius, vivacity, quickness of penetration, brilliancy in association of ideas—such mental qualities, like the qualities in the externally armed head in *Macbeth*, will not be commanded; but attention, after due term of submissive service, will. Like certain plants which to poorest peasant may grow in the poorest soil, it can be cultivated by any one, and it is certain in its own good season, to bring forth flowers and fruit. I can most truthfully assure you, by-the-by, that this eulogium on attention is so far quite disinterested on my part as that it has not the least reference whatever to the attention with which you have honored me. Well, ladies and gentlemen, I have done. I cannot but reflect how often you have probably heard within these walls one of the foremost men, and one of the best speakers, if not the very best, in England. I could not say to myself, when

I began just now, in Shakspeare's line, "I will be bright and shining gold," but I could say to myself, and I did say to myself, "I will be as natural and as easy as I possibly can," because my heart has been in my subject, and I bear an old love toward Birmingham and Birmingham men. I have said that I bear an old love toward Birmingham and Birmingham men; let me amend a small omission, and add "and Birmingham women." This ring I wear on my finger now is an old Birmingham gift, and if by rubbing it, I could raise the spirit that was obedient to Aladdin's ring, I heartily assure you that my first instruction to that genius on the spot should be to place himself at Birmingham's disposal in the best of causes.

THE ROTARY MOTION OF THE EARTH DEMONSTRATED.—The question of the rotary motion of the earth has for ages past given rise to learned discussions between scientific men, and numberless experiments have been made to demonstrate the theory. Foucault, a learned Frenchman, some years ago, announced a simple contrivance which he claimed set at rest all disputations on the question and demonstrated the theory beyond cavil. T. C. Mendenhall, of the Columbus High School, completed arrangements for a test of Foucault's contrivance on Saturday, and proceeded to put in operation. A wire was attached to a light cross-beam from the inside centre of the dome of the State Capitol, reaching nearly to the floor of the rotunda below. To the lower end of this wire a metallic ball of 28 pounds weight was attached. The ornamental piece of rotunda pavement furnished a circle, through the centre of which, from the true north, a line was struck to the south. Nine additional lines, representing nine degrees of variation from the true north, were marked on the circles. The ball was set in vibration on the north and south line, and in one hour had departed from that line in its vibration, and was describing the line of the first degree to the right. The proposition was, that at the end of the ninth hour from the start of the ball, it would so far depart from the true north and south line, as to describe the ninth. While the ball seemed to leave the track in which it originally started, it really did not. The apparent variation was due to the rotary motion of the earth. This was the second trial of this interesting experiment in the United States, and the third in the world. The committee of gentlemen conducting it on Saturday expressed themselves as entirely satisfied with the result. It will probably be repeated to-day.—*Columbus (Ohio) Statesman, October 18th.*

HEALTH OF SCHOOL CHILDREN.—The Medical College of Middlesex, Massachusetts, having for a long time considered the influence of public schools on the health of children, authorize the publication of the following facts as the opinions of its members:

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THE SCHOOLS OF PRUSSIA.—The best schools in Europe are found in Bavaria, in Saxony and in Prussia, and the best of these countries are in Munich, in Dresden and in Berlin. In these cities the schools are conducted with primary reference to mental development, and, as a means to this end, the subjects of study are so classified as to lead to the acquisition of knowledge in a scientific manner. I notice, as I go about to the different school rooms of a large educational institution, that they are well supplied with the means of illustrating every topic that is taught. In one school room, in which botany is studied, I saw the plants for analysis, all growing in pots, which were arranged on shelves about the room. In another room, where zoology is taught, the students were supplied with specimens of the objects they are required to study, and these specimens are so arranged that they are always before the student as he studies, or near him to be used as illustrations as he recites. The teachers do not require rules to be committed to memory at first, and then

all mental operations to be performed in blind obedience to the rule, but they require the rule, or general principle, to be derived from an observation which the pupil is led to make for himself.

In the study of language, the pupil is led to the principles of construction by a study of construction he has himself been led by his teacher to make, and language is in no case to be used by the pupil until he possesses the ideas and thought which the language expresses. The teacher of geometry first teaches by object-lessons the principles upon which geometrical reasoning depends; then the pupil is led to the solution of problems by means of his own reasoning, in which he himself makes an application of the principles he himself has learned. The pupil is trained to observe by observing, to reason by reasoning, and to do by doing. In the principal German schools I visited, the teachers have for the primary objects of their thoughts, as they teach the wants of the human mind. The German mind is naturally metaphysical. There is, accordingly, in all plans of German education, a thorough classification of objects of study. The schools are graded, are related to one another in accordance with the plans of study. In Bavaria, Saxony and Prussia, there are schools called Volks schools or people's schools, in which the common branches of learning are taught, and which all the German youth are required by law to attend, from the age of 7 to 10 years in some States, and from 6 to 13 years in others.

The law is popular with all classes, and is rigidly enforced. The common people, as well as the upper classes, all give a cordial support to the common school. At 8 o'clock in the morning the streets of the city are filled with pupils of the primary schools and students of the higher grades, each with his satchel of books tied to his back, marching cheerfully to his appointed place for study. After 8 o'clock no children of school age are to be found away from their classes. Each parish of a town must have at least one primary or elementary school, and most towns, in addition to these elementary schools, have at least one upper or burgher school, as it is called.

The German children at school all appear neatly dressed, and, what I am sorry to say is not always true in my own country, these children are trained to good manners. When a stranger enters a school room, the children all rise and remain standing until he has closed the door behind him. This practice is observed in all the grades of schools, from the first primary up to the senior class in the university.

If a parent is not able to clothe his child properly for school, then he is clothed at the public expense. The children of the rich are found sitting on the same seat with those of the poor, and the nobles do not hesitate to allow their children to receive their elementary training in the same classes in which the children of the humble are trained, and the boy who has the most

brains and explains his lessons best, is the best fellow while his young school days last, whatever distinctions may be made in after life. After leaving the common school the German youth can enter upon the duties of active life or may enter the trade school, where they remain three years, and prepare for the various trades they may choose to follow.

Then he can follow his trade, or he can enter the industrial school and in two years graduate an architect, an engineer, a chemist, etc., or, if he wishes, he can pass from the industrial school to the polytechnic school, and prepare to take a high position in the mechanical arts. The student may leave the common schools also and enter the gymnasium, where Latin, Greek, mathematics, rhetoric, history and chemistry are taught. From the gymnasium the student can take up the study of a profession, or he can go thence to a university, where he can fit himself to take the highest position in any profession he chooses, and where he can know all the subjects of his study as sciences.

In the gymnasium the students are required to study and recite thirty-two hours per week, and before graduating to pass over a course of study which requires nine years to complete. The German teachers, as a class, are better prepared for their work than the teachers of any other country. They are encouraged to fit themselves for a high excellence in their profession by the preference which is always given to teachers who have a professional training, and by the honor which is everywhere accorded to teaching as a profession. In Germany the boys are always educated apart from the girls, and a male teacher is always placed over a class of boys and usually a female teacher over a class of girls. In the graded schools of the cities the teacher continues over the same class from the time he enters the schools until its graduation. This plan requires every teacher to be qualified to teach all the topics found in the whole course of study. Teachers of one State are encouraged by the government to visit the schools of other States, so that any improvement made in the schools of one section may be rapidly introduced into other sections. Teachers are also encouraged to hold conventions for mutual improvement.—*Dresden Correspondence of Springfield Republican.*

THE CHINESE LANGUAGE.—If by grammar is meant a collection of rules exhibiting the change which nouns and adjectives undergo in declension, and verbs in conjugation, there is nothing corresponding to it in Chinese. Chinese stands alone in the whole realm of human speech as a type of languages without inflections, and it is for this reason, apart from its literary interest or practical importance, that a study of Chinese becomes indispensable to every student of language. What a philosopher might imagine the earliest stage of language to have been, is presented to us in Chinese as an undeniable reality. What a

careful analysis of other families of languages teaches us—viz., that all that is now purely formal in language was originally material—stands before us in Chinese, not as the result of a laborious induction, but as a simple fact. There was a language, and there is still a language, and a language spoken by a larger number of human beings than any other, in which we have no sign of gender, case or number, no personal termination, no tenses or moods, no irregular nouns or defective verbs, nay, in which there is no outward distinction between a noun, an adjective, a verb, an adverb, and a participle. What a happy country China must be! many a schoolboy would think, where there are no irregular verbs, no false quantities, no genders. But alas! there is no rose without thorns, and in spite of all its grammatical simplicity, Chinese—at least, the ancient classical Chinese—is known to be one of the most difficult languages to learn. We quote from M. Stanislas Julien's work:

All Chinese characters are monosyllabic, independent and "inconjugal." They are not capable of receiving those inflections which in Greek and Latin show at a glance the gender, case and number of nouns, the voice, tenses, moods and persons of verbs. But, in spite of this absence of inflections, the Chinese language is to a well-informed "sinologue" as clear and intelligible as those learned languages which abound in inflections. If it were otherwise, how could the innumerable works which it has produced in every branch of literature for more than 2,000 years, have been read and reproduced from century to century, since the first discovery of printing? The Chinese began to print from woodcuts in 581 A.D. In the year 907—400 years before the discovery of printing in Europe—they introduced the use of stone for the same purpose, and in 1040 they invented movable types. Again, how could it now, under its modern form, called *kouan hoa*, or vulgar language, be spoken in China, Cochin Ohina, Japan, Siam, Corea, and even in Thibet, by a population of more than four hundred and fifty millions—that is to say, by half of the civilized world? How does a language apparently so imperfect, answer, nevertheless, all purposes, and how has it enabled Chinese authors to treat in innumerable works of every scientific and literary subject that can interest the human mind? The answer is that the inflections of nouns and verbs, which give so much precision to the ancient languages, find their equivalents to a certain degree in the collection of the Chinese characters, which, according to the position which they occupy in a sentence, and according to the words with which they are construed, can assume every possible grammatical value. The relative position of words determines their character, and imparts the requisite clearness both to the spoken and the written speech."

It has often been said that there is no language which in its grammatical features approaches so near the Chinese as English.

M. Stanislas Julien himself, whenever he wishes to illustrate the peculiarities of Chinese, has recourse to English rather than to French, in order to give something like an approximate idea of a Chinese word or a Chinese sentence. If, however, we look more closely into these similarities between a language without inflections, like Chinese and English, which belongs to a family of speech in which inflection had once reached its highest perfection, we shall find that they are apparent rather than real. They admit of an historical explanation, and they form, in fact, a new instance of the old rule that "extremes meet." Chinese and English form two opposite poles. The circle in the growth of language begins with Chinese and ends with English, as far as grammatical articulation is concerned.

ANIMALCULES.—If some hay is placed in a glass of pure rain-water, and allowed to soak for a few days in a sunny place, and if it be then removed, the water will be found, under a powerful microscope, to contain many very small moving things, which are called infusoria, from their being produced after infusing the hay. The eggs which were on the hay bred there myriads of small things, which often have a very beautiful coat of transparent flint or silica. If the water is kept clean, and is not allowed to decompose or smell, generation after generation of the infusoria live, die, and fall to the bottom of the glass. They form a very delicate film here, and minute portions of it, when examined under a high magnifying power, show the silicious skeletons or shells very distinctly. Now, many strata in the earth are formed entirely of the remains of infusoria, and a very familiar example is the Tripoli powder, from the polishing slate of Bilin, in Bohemia. A single grain of Tripoli powder contains no fewer than 187,000,000 of the transparent flinty skeletons of dead animalcules; yet the layers of earth which are made up of them at Bilin extend for miles. In the harbor of Wismar, in the Baltic, they increase and multiply at a great rate, for 17,496 cubic feet of mud are formed every year there, and every grain of it contains 1,000,000,000 of the beautiful silicious remains of the infusoria. In the island of Barbadoes, there is a thick mass of the most beautiful flinty sea animalcules, and they are in such numbers that it must be supposed the dead minute things were constantly falling in showers from the sea to the bottom.—*Engineering Magazine*.

CURIOSITIES OF AMERICAN HISTORY.—American political history is full of curiosities and singular incidents. For instance, three of our Presidents, all of whom participated in the Revolution, died on its great anniversary, the Fourth of July, viz: John Adams, Thomas Jefferson and James Monroe. General Washington, when he retired from the Presidency, was in the 66th year of his age. His successor, John Adams, when he left, was 66 years old. After him came Thomas Jefferson, James

Madison and James Monroe. Mr. Jefferson was 66, James Madison had just passed his 66th year, and Mr. Monroe was in his 67th, when they respectively left the Presidential chair. General Harrison was 67 years old when he was elected, and died in the Presidential office.

From 1801 to 1825, the Presidential office was filled by Virginians. During the same interval, with the exception of four years, the Vice-Presidential office was held by citizens of New York. John Adams negotiated the treaty of peace that concluded the war of the Revolution with England. His son, John Quincy Adams, was a leading envoy, and negotiated the treaty which concluded the second war with England in 1814. His son, Charles Francis Adams, at the third great crisis of our history, was the minister to England during the recent war, from 1861 to 1865, the period which covers the Alabama claims, out of which another war is altogether possible with the old mother country.

In 1800, John Adams was on a leading Presidential ticket. Twenty-four years after, his son, John Quincy, was also a Presidential candidate. Twenty-four years from that time, Charles Francis Adams, John Quincy's son, was an important candidate for Vice-President, with a contingent Presidential succession.

Of the first six Presidents, four of them were taken from the office of Secretary of State; and the other two, being the first elected, could not perform its duties. From this fact arose the precedence that makes the Secretary of State the first officer in the Cabinet, instead of the Secretary of the Treasury, which is the case in Great Britain.

No less than five of the greatest of American statesmen were born in the same year, 1782: Daniel Webster, John C. Calhoun, Thomas H. Benton, Martin Van Buren, and Lewis Cass. From 1800 to 1865, a period spanning from the second President to the seventeenth, only two persons filled the office of Chief Justice of the Supreme Court of the United States—John Marshall and Roger B. Taney.

REV. DR. McCOSH, President of the College of New Jersey at Princeton, ably defended, at the late meeting of the Philological Convention at Poughkeepsie, N. Y., the study of the Greek and Latin classics, and it is gratifying to know that the Convention applauded his well expressed sentiments.

TURKEY IMPROVING—THE NEW EDUCATION LAW.—A new education law has just been promulgated in Constantinople. Primary instruction is compulsory for every inhabitant of the Turkish empire. The period of instruction for girls is fixed from six to ten years of age, and for boys from six to eleven. The magistrates of the districts and villages are to keep a register of the names of the boys and girls whose age qualifies them for instruction, together with those of their parents or guardians. If any of these do not go to school, the magistrate is to warn the parent or guar-

dian of his obligation, and after such a notice if the child is not sent to school within a month, and no valid reason is given for its absence, a fine of from five to one hundred piastres is to be imposed, according to the means of the parent, and the child is to be taken to school by the authorities. These fines are to be paid into the education fund.

The cases in which exception is allowed are, first, when the child is shown to have some constitutional defect; second, when the parent is poor, and would suffer loss from his child being sent to school; third, when the child is employed in agricultural labor at harvest time; fourth, when the distance from the residence of the child to the school is more than half an hour's walk; fifth, when there is no school in the district, or when the school is not sufficiently large to accommodate all the pupils; sixth, when proof is furnished that the child is being educated either at home or in a private school.

The primary schools are to be either Mussulman or Christian, according to the religion which is most prevalent in the district. The higher schools, however, are to receive Mussulmans and Christians indiscriminately. An "Imperial Council for Public Instruction" has been established, to see to the due execution of the law.

THE Indiana State University has opened with a largely increased number of students. There are upwards of 200 in the four college classes. A largely increased number of students are also expected in the law department, which will begin on the 8th of November, under the care of G. A. Bicknell, of New Albany, and John U. Petit, of Wabash. Tuition is now free in this department.

"THERE are three hours and a half lost by you this morning," a superintendent said to a tardy teacher. "I was only half an hour late," he replied. "True," said the superintendent; "but then there were seven scholars waiting all that time for you."

REPORT OF PUBLIC SCHOOLS.

ROLL OF HONOR.

MESSILLA VALLEY SCHOOL, *Butte county*; J. P. TAYLOR, Teacher. For the term ending Nov. 16th, 1869.

First Grade—(being above ninety per cent. for the whole term:) Mary Stewart, Belle White, Frances White, Gertie Heckart, Eugene Van Ness.

Second Grade—(being above eighty per cent.)—Henrietta Stewart, Emma White, Fannie Pence, Clara Wait, Wm. Kelley, Wm. Wait, Watt Pence, Frank Heckart, Willie Stewart, Clarence White, Wm. Applegate, Albert Highet, Carter Van Ness, Willie Snyder.

BOOK TABLE.

ORATION. Delivered by the Hon. FRANK M. PIXLEY, Grand Orator, before the Grand Lodge, F. and A. M. of the State of California, at Masonic Hall, San Francisco, Thursday, October 14th, 1869. San Francisco: A. Roman & Co., Publishers.

An eloquent and pleasing oration—though touching more on modern civilization than on the science of Masonry.

ONWARD. A Lay of the West. By A. W. PATTERSON. A. Roman & Co., Publishers. 1869.

The subject of this "lay"—judging from the poem itself—would better suit the patriotic efforts of the Fourth of July orator than the imaginative intensity of the poet. It presents an ample field for cumulative epithet, but it would seem a very small one for the *furor poeticus*. Reminding one of GOLDSMITH—(a little) by contrast—the author manages to present, if not a highly poetic yet a very readable picture of Western progress. The "Rising Village" of the new world is not an unpleasant antithesis to the "Deserted Village" of the old. The spirit of the two being so much in contrast, would have suggested a little different treatment in the present production. Few thoughts in the poem have the clear ring of genius, but all together make a very good effect.

ELEMENTS OF GERMAN GRAMMAR. By E. C. F. KRAUSS, Teacher at the Girls' High and Normal School, Boston. Formerly at Harvard, and the Mass. Technological Institute. Boston: S. R. Urbino. 1869.

FIRST BOOK IN GERMAN. By E. C. F. KRAUSS, Teacher at the Girls' High and Normal School, Boston. Formerly at Harvard College, and the Mass. Technological Institute. Boston: S. B. Urbino. 1869.

We have a number of new "German Grammars," new "First Steps," "First Books," etc., in German, lately published. This shows a gratifying increase of appreciation, among the American people, of the German language and literature. The present publication is one of the best. It has merit in method, in arrangement, and in the choice of the matter presented—neither more nor less of the latter being given than precisely what the author thinks is necessary for the pupil to learn. We like this definiteness of aim. The two books supplement each other, but either alone could very well be used in connection with the works of other authors.

A GREEK GRAMMAR FOR BEGINNERS. By WILLIAM HENRY WADDELL, Professor of Ancient Languages in the University of Georgia. New York: Harper & Brothers, Publishers. 1869.

The tendency of the age in all departments of thought is to simplification and accuracy. The Greek grammars in common use offend in both points to a great extent. This work is a remedial effort—and is about one-fourth the usual size of Greek grammars. In simplification, it is good; in accuracy, not often at fault. All those useless "notes," "remarks," "observations," etc., which so disfigure most books of the kind are discarded, and only "essential and elementary principles and paradigms" are given—but yet enough, with thorough drilling, to lay a good foundation for the study of the Greek language. A. Roman & Co.: San Francisco.

HISTORY OF JOSEPH BONAPARTE, King of Naples and of Italy. By JOHN S. C. ABBOTT, Author of The "History of Napoleon Bonaparte," "The French Revolution," etc. New York: Harper & Brothers, Publishers. 1869.

This book will be read. Mr. Abbott is too well known as a writer to mak

particular comment on his present performance necessary. It, however, lacks the interest that his other *Napoleonic* writings possess—a fact that may, perhaps, be accounted for by another, to wit,—that Joseph Bonaparte was a failure. Some grammatical faults, also, furnish a mark for the plainer sort of criticism—"The odds in favor of the Spanish *was* so great," etc. A. Roman & Co.

MANUAL OF ASTRONOMY. With a familiar explanation of Astronomical Instruments, and the Best Methods of Using Them. By JOHN DREW, F. R. A. S., Doctor in Philosophy of the University of Bale; Author of "Chronological Charts Illustrative of Ancient History and Geography." Philadelphia: J. B. Lippincott & Co.

This is a second edition of a very excellent work. It is scientific, interesting and instructive: has two general objects—First, discussions of the most important facts of the science; and second, descriptions of astronomical instruments. In the latter respect, it is more meritorious than any works of its size we have seen. The practical astronomer would find it very valuable. A. Roman & Co., San Francisco.

MENTAL PHILOSOPHY; Embracing the Three Departments of the Intellect, Sensibilities, and Will. By THOMAS C. UPHAM, D. D., Professor of Mental and Moral Philosophy in Bowdoin College; Member of the Academy of Metaphysical and Ethical Sciences; Author of "Æsthetics and Moral Letters," etc. In Two Volumes:—VOL. 1.: THE INTELLECT, With an Appendix on Languages. VOL. 2.: THE SENSIBILITIES AND WILL. New York: Harper & Brothers, Publishers. 1869.

This is a new, and truly an improved edition of the well known "Upham's Mental Philosophy." The system belongs to no one school of philosophy, but is judiciously eclectic. Setting out with a clear statement of Primary Truths, and then building on the three-fold division of the soul—the Intellect, Sensibilities and the Will—the author has succeeded in producing a natural, harmonious, and beautiful system—one that the student's mind can firmly grasp, and that *therefore can be taught*. A few minor points—such as the "comparative state of the mind and body in dreaming," etc.—are slightly at fault. Price \$3.50 for the two volumes. A. Roman & Co.

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LITTELL'S LIVING AGE, No. 1329, for the week ending Nov. 20th, contains *The Quarterly Review's* crushing article on "The Byron Mystery," with hitherto unpublished, and apparently conclusive, letters from Lady Byron to Mrs. Leigh; also "The Battle of the Philosophies" (Physical and Metaphysical); the continuation of "The Portrait in My Uncle's Dining Room," from the French; "The Millionaires of New York," etc., etc.

No. 1330 contains "Islam," a very notable paper by the author of the

celebrated *Talmud* article, and written with the same power; also an "Enigma of History—The Captivity of Joanna of Castile, called 'La Loca' or the Mad", from new documents, translated for *The Living Age* from the *Revue des Deux Mondes*; the conclusion of "The Portrait in My Uncle's Dining Room," and other articles.

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A COMPENDIOUS GERMAN GRAMMAR. By WILLIAM D. WHITNEY, Professor of Sanscrit and Instructor in Modern Languages in Yale College. New York: Leypolt & Holt. 1869.

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2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

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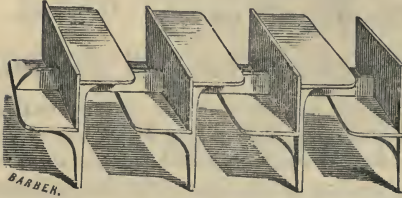
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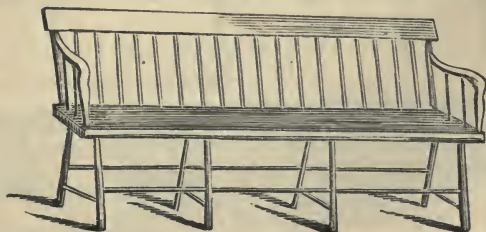
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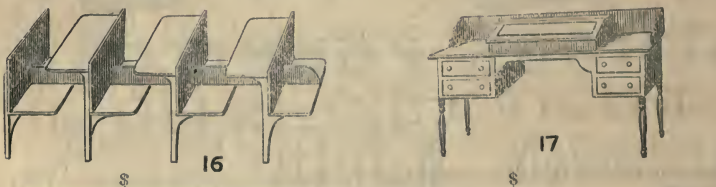
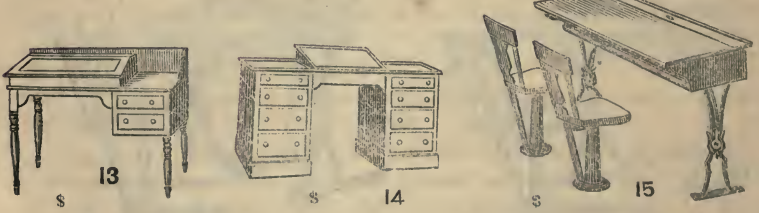
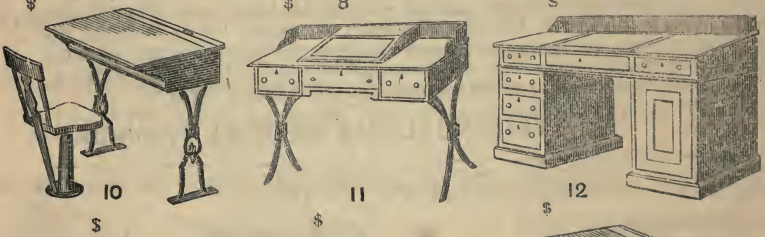
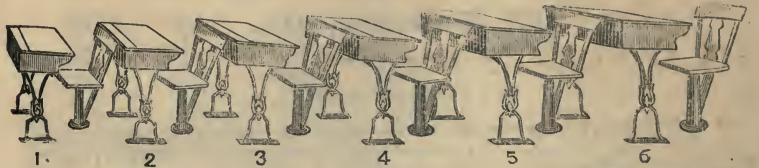
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No. 8.

ALGEBRA—"OBJECTIVELY PRESENTED."

To THE beginner of Algebra, there is always a difficulty of realizing its abstract truths, and for the reason that elementary writers, from the fear of impairing the generality of their demonstrations, seldom illustrate or particularize; and yet by these processes only, can the teacher instruct up the mind of the pupil to receive, intelligently, the abstract truths of Algebra. The process of generalizing, from the beginning, may produce a dextrous manipulator of its formulas, or a blind believer in its truths, but seldom, if ever, a well grounded mathematician.

We propose to illustrate and particularize the formula for the solution of Equations of the second degree, to prove its truth as regards *one kind* of quantity, and upon that stand point to generalize it in regard to every quantity. In so doing we shall, without scruple, commit the additional heresy of invoking to our aid the forms and dimensions of Geometry, and one of its simplest truths. On the other hand, we shall seek to avoid a common defect in the general solution, viz: of *assuming* the sign value of the unknown quantity, and on that assumption building up the proof of the two numerical values.

Before commencing the demonstration, it is necessary to call to mind the following truths, viz:

1st. If a quantity be unknown, its *sign*, as well as its numerical value is unknown.

2. The sign + or — before an unknown quantity, is the

sign of its co-efficient, not of the quantity itself. Thus $+x$ means $+1 \times x$; and $-x$ means $-1 \times x$

3d. The sign $+$ before the square of an unknown quantity, is the sign of the quantity itself, when squared, for $+x \times +x = +x^2$, and $-x \times -x = +x^2$. The sign of x^2 is therefore, like that of every known quantity, *inflexible*.

4th. Every expression like $+10x$, or $+2mx$ is *flexible*, for if x prove to be minus, the whole expression becomes $-2mx$, or $+2m \times -x$. So, also, $-2mx$ may become $+2mx$, for $-2m \times -x = +2mx$.

5th. Every equation must be so construed as to be possible or probable. If, in the equation, $x^2 + 2mx = -24$, we construe the first two terms to be positive, we make the equation improbable, for two $+$ quantities cannot equal a $-$ quantity. The equation is only probable on the supposition that the flexible quantity $2mx$, become $-2mx$, and this proves that x in the equation is a $-$ quantity.

6th. The number of square feet in a rectangular room equals the number of feet of its length, multiplied by the number of feet of its width.

Thus, the room:
$$\begin{array}{c} 10 \text{ ft.} \\ \boxed{\phantom{30 \text{ square feet.}}} \\ 3 \text{ ft.} \end{array} = 30 \text{ square feet.}$$

We are now prepared for a particular solution of the Equation of the 2d degree or Problem of the four forms. For convenience, the forms are thus arranged:

$$x^2 + 2mx + P = 0 \text{ (A) first form.}$$

$$x^2 - 2mx + P = 0 \text{ (B) second form.}$$

$$x^2 + 2mx - P = 0 \text{ (C) third form.}$$

$$x^2 - 2mx - P = 0 \text{ (D) fourth form.}$$

In which $2m$ and P are known quantities and inflexible, and the sign of x^2 is $+$ and inflexible. The drawings are on the supposition that $2m = 10$, and P exceed 0.

In the Equation—

$$x^2 + 2mx + P = 0 \text{ (A) first form,}$$

the flexible quantity $2mx$ must become $-2mx$, or the equation is improbable; therefore, x is minus; for $+2m \times -x = -2mx$. The whole expression therefore becomes

$$x^2 - 2mx + P = 0,$$

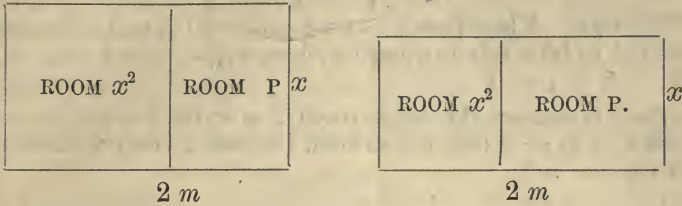
or

$$x^2 + P = 2mx$$

Of which the following is a particular interpretation, viz:

A room of $2mx$ square feet must so exactly contain two smaller rooms, the one of x^2 square, the other of P square feet, that there shall be 0 of its space unoccupied.

Illustration.



And this interpretation is probable on two conditions, viz: that room x^2 should be the larger or the smaller of the two, and on these conditions depend the two values of x .

Demonstration.

It is evident that x must be greater, equal to, or less than m , which three conditions may be thus expressed:

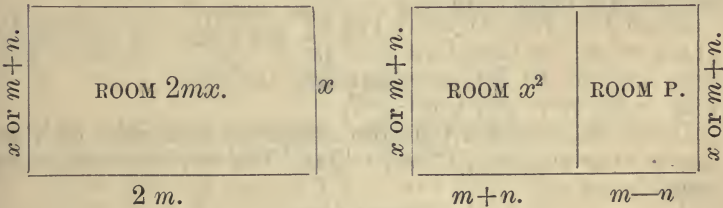
$$x = m + n$$

$$x = m - n^1*$$

For if $x = m$, then n in either equation becomes 0. n and n^1 are undetermined. Their numerical values are not assumed, but will be proved to be equal in any one equation. First, construct the large room, $2mx$, on the supposition that $x = m + n$, so that its length may be $2m$, and its width x or $m + n$.

Fig. 1.

Fig. 2.
2m.



From its length, $2m$, cut off a part equal $m + n$, and make this (fig. 2), a side of room x^2 by drawing the partition. The remainder of $2m$ or $m - n$ will be a side of P .

To prove that the room $2mx$ is exactly occupied by the other two, we assume that $x = m + n$.

$$\left. \begin{aligned} \text{The room } x^2 &= (m + n)^2 = m^2 + 2mn + n^2 \\ \text{Room P} &= (m + n) \times (m - n) = m^2 - n^2 \end{aligned} \right\} \text{by addition}$$

$$\text{The rooms } x^2 + P = 2m^2 + 2mn, \text{ or } 2m \times (m + n = x) = 2mx.$$

It remains to find the value of n .

* n^1 is here used for n prime.

The room $P = (m+n) \times (m-n)$ or $m^2 - n^2 = P$, or $n^2 = m^2 - P$, or $n = \sqrt{m^2 - P}$; but $x = m+n$. Therefore $x = (m + \sqrt{m^2 - P})$ and x has been proved to be a minus quantity; hence $x = -(m + \sqrt{m^2 - P})$ or $-m - \sqrt{m^2 - P}$.

Next construct the large room $2mx$, on the supposition that $x = m-n$ (fig. 3), so that its length may be $2m$ and width $(m-n)$.

Fig. 3

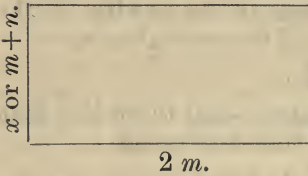
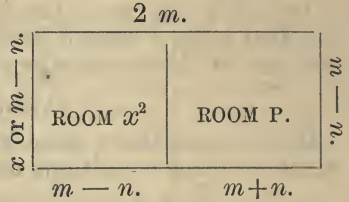


Fig. 4.



From its length, $2m$, cut off a part equal $\frac{1}{2} m - n$, and make this a side (fig. 4) of the room x^2 , by drawing the partition. The remainder of $2m$ will be $m+n$, and will be a side of P .

Proof: that the room $2mx$ is exactly occupied by the other two.

$$\left. \begin{array}{l} \text{The room } x^2 = (m-n)^2 = m^2 - 2mn + n^2 \\ \text{The room } P = (m+n) \times (m-n) = m^2 - n^2 \end{array} \right\} \text{ by addition}$$

$$\text{Rooms } x^2 + P = 2m^2 - 2mn \text{ or } 2m \times (m-n=x) = 2mx.$$

To find the value of n .

Room $P = (m+n)(m-n)$ or $n^2 = m^2 - P$ or $n = \sqrt{m^2 - P}$, but $x = m-n$, therefore $x = (m - \sqrt{m^2 - P})$ and x has been proved to be a - quantity, therefore $x = -(m - \sqrt{m^2 - P})$ or $-m + \sqrt{m^2 - P}$.

It will be observed that the numerical value of n or n^1 in the two suppositions, (" $m+n$ ") and (" $m-n$,") is exactly the same.

Second Form.

$$m^2 - 2mx + P = 0.$$

Only probable on the supposition that the whole quantity $2mx$ become negative, on which condition x must be positive, for $-2m \times +x = -2mx$. The sign of x established, the demonstration is as in an equation of the first form.

Third Form.

$$x^2 + 2mx - P = 0.$$

Possible on two suppositions. 1st. That the whole quantity $2mx$ become negative, requiring x to be negative, and that the larger room, x^2 should exactly contain the two

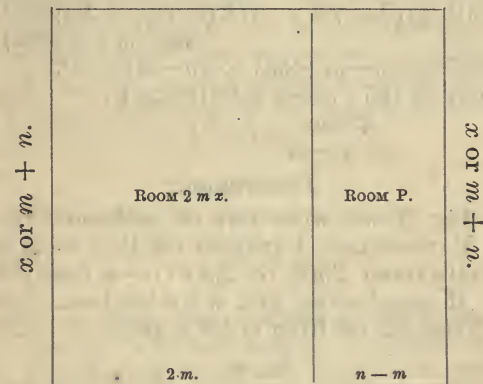
smaller rooms $2 m x$ and P. 2d. That $2 m x$ should become positive, requiring x to be positive, and that the larger room P should exactly contain rooms x^2 and $2 m x$. The larger value of x being plainly on the first supposition, the smaller on the second. On the first supposition,

$$x^2 = 2 m x + P. \text{ Here } x = m + n,$$

x evidently exceeding $2 m$, for $(x \times x)$ exceeds $(2 m \times x)$ by P.

Illustration.

Fig. 5.



x or $m + n$.

From the line x cut off a portion equal $2 m$, and here make the partition. The rest of line x will be a side of P, and will equal $m + n - 2m$ or $n - m$.

Demonstration.

The room x^2 will exactly contain rooms $2 m x$ and P, for

$$\text{Room } x^2 \text{ or } (m+n)^2 = m^2 + 2 mn + n^2.$$

$$\left. \begin{array}{l} \text{Room } 2 m x \text{ or } 2 m \times (m+n) = 2 m^2 + 2 mn \\ \text{Room P or } (n-m) \times (n+m) = -m^2 + n^2 \end{array} \right\} \text{by addition}$$

$$\text{Rooms } 2mx \text{ and P} = m^2 + 2mn + n^2$$

To find the numerical value of n .

The sides of room P are $(n - m)$ and $(n + m)$ hence $n^2 - m^2 = P$ and $n = \sqrt{P + m^2}$ hence x or $(m + n) = (m + \sqrt{P + m^2})$; but x is negative, hence $x = -(m + \sqrt{P + m^2})$ or $-m - \sqrt{P + m^2}$.

On the second supposition.

$$x^2 + 2mx = P;$$

or

$$(x + 2m) \times x = P \quad \text{(E.)}$$

Here x is positive, and cannot be assumed to equal $m - n$,

for if n exceed m , then $(n-m)$ only is positive. We must therefore evolve the smaller value of x . On the first supposition, $x = m+n$, and

$$x^2 = 2mx + P;$$

or

$$x^2 - 2mx = P$$

or

$$(m+n)^2 - 2m \times (m+n) = P$$

or

$(m+n) \times (m+n - 2m) = P$. Observing $m+n = 2m + n - m$ and substituting: $(2m + n - m) \times (m+n - 2m) = P$. Observing

$$(m+n-2m) = n-m,$$

and substituting: $(n-m+2m) \times (n-m) = P$.

But by Equation (E) $(x+2m) \times (x) = P$.

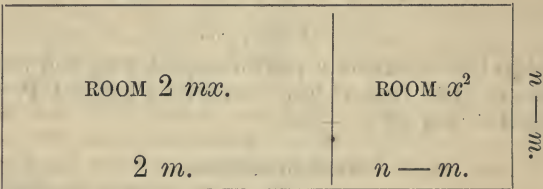
Hence

$$x = n-m.$$

Illustration.

If, from Fig. 5, we wipe out or *extinguish* room $2mx$, then room P remains. Partition off this room, so that it contain exactly room $2mx$, or $2m \times (n-m)$ and x^2 or $(n-m) \times (n-m)$. Remembering that $m+n$ has been proved to exceed $2m$. First cut off from $m+n$ a part

Fig. 6.



$m + n$.

$2m$, and here draw the partition. The remainder of $m+n$, or $(m+n) - 2m$, or $n - m$ will be a side of room x^2 .

Demonstration.

The whole room $P = (n+m) \times (n-m)$ or $n^2 - m^2$. Therefore $n = \sqrt{P+m^2}$ but $x = (n - m)$ or $-m + \sqrt{P+m^2}$.

In the same manner the signs and numerical values of an equation of the fourth form may be illustrated and demonstrated. By the above demonstration we evolve a truth in regard to the particular quantity "square feet." For instance:

$$x^2 \text{ square feet} - 2mx \text{ square feet} + P \text{ square feet} = 0.$$

We may make this more general by substituting some other quantity in the place of square feet, as pounds, or gal-

lons, &c., or we may make it entirely general by rubbing out square feet from the equation, and thus proving its truth in regard to abstract numbers.

It is not pretended that there is any novelty in this mode of demonstrating the formula, for though the writer has never seen it in print, he does not suppose that algebraists can have overlooked the fact, that the values of x may, in the two first forms, be evolved by extinguishing x^2 , and in the two last, by extinguishing $2mx$.

The demonstration in this manner may, without the aid of Geometry, be made as general, as abstract, as orthodox, and as incomprehensible to the young student, as that by completing the square. The real object of this paper is to remind the teacher that without relaxing its rigor, an algebraical demonstration may be addressed to the eyes as well as to the mind of the student. G.

ABOUT TEACHING FRACTIONS.

BY BERNHARD MARKS.

A, B and C are first class teachers of Arithmetic. Each is thoroughly familiar with the subject, and enjoys the advantage of the light shed upon it by the higher Mathematics. Each has a class drilled in Fractions to his entire satisfaction. But while A's class can answer all his questions to absolute perfection, they cannot understand the questioning of B or C upon the same subject. If the foremost pupils of A or B were placed in the same class with the best pupils of C, the new class would not be able to recite in a satisfactory manner. The recitations of A's pupils would be Greek to those of B or C, *vice versa*. Admitting that any of these pupils will be able to obtain results sufficient for practical purposes, may we not reasonably doubt the desirability of this condition of affairs as resulting from *skillful* teaching.

Is it not a sure sign that while we know enough of the subject itself, we do not know how to teach it? It is plain that no teacher can be entirely satisfied with his work, unless he feels himself in a position to defy intelligent criticism from any quarter; then how can any teacher be content to limit his pupils to one view of the subject? On the other hand, if one view of it will enable the pupil to obtain all the necessary practical results, is it not manifestly absurd to teach the same thing in another form? These queries have forced themselves upon my attention during many out-of-school hours and vacation days. They have given rise to tens of perplexing questions, ranging in importance from Cancellation to Psychology. When I began to teach,

I would have resented with scorn the slightest questioning of my ability to teach so simple a thing as Fractions. I taught three years before I found out the extent of my ignorance and consequent want of skill. Since then I have read about thirty different arithmetics, only to become satisfied that the philosophy of teaching Fractions is yet to be written. Each teacher has his favorite style of teaching it. Suppose the three classes above mentioned were required to reduce $\frac{15}{3}$ to a whole number. A's class might solve it thus: a fraction is an example of unexecuted division, in which the numerator is the dividend and the denominator is the divisor; then the quotient is the value of the fraction. Dividing the numerator 15 by the denominator 3, etc. And no one could reasonably find fault with the solution. B's class might solve it thus: dividing both terms of a fraction by the same number does not alter its value. Dividing both terms by 3, etc. And this, which is called the Deductive Method, must be considered satisfactory. C's class might solve it thus: 3 thirds equal one, then 15 thirds equal as many ones, etc. And again we have a solid solution in what is called the Inductive Method. Some teachers imagine that they have solved the whole difficulty when they hold themselves in readiness to use any of these methods indifferently, as circumstances may seem to require. I have read and listened to discussions on the relative merits of these methods, without receiving a single ray of light on the science of teaching Fractions. My own investigations incline me to believe that all three methods are necessary to a finished understanding of the subject. And yet so far from true is it that any one may be used indiscriminately, or that one may be substituted for another as being easier, there is naturally only *one* method of procedure.

The Inductive Method should be the first one used both for Mental and Written Arithmetic. The whole subject should be exhausted by this method, which serves as the natural foundation for the Deductive Method. These two are complements to each other, and the work is not done until both are taught. During the Inductive stage, the unit only is the object of perception and conception. Technical terms, definitions, rules and classifications come in during the Deductive stage. The first method above given comes last, under the head of *General Theories*.

If this view is correct, it will be seen that not less than seven eighths of all our teaching of Fractions must be wrong, for what is more common than to hear pupils who are getting their first ideas of this subject, talking about numerators and denominators, rules, reductions, etc. Inductive reasoning always precedes Deductive reasoning; and until the pupil is thoroughly inducted into the processes involved in Fractions, he should not be called upon to describe them. Even the mode of expression in the Deductive course is not suited to beginners, because it presents

as objects of conceptions, things with which they could not have had time to become familiar before they learned to name them. Thus, the above example expressed in the Inductive style would be, "change $\frac{15}{3}$ to ones;" while in the Deductive course it would be presented under the form, "reduce the improper fraction $\frac{15}{3}$ to a whole or mixed number." In the former the object of the conception is the unit, with which the pupil is familiar; in the latter it is the technical name, with which he is *not* familiar. In the former the process is the natural first step which furnished the mind with the necessary data for Induction; in the latter it is the application of principles which should themselves have been the results of Induction. The former is an empirical process, the latter a rational one; and as all reasoning rests upon a substratum of fact, it is easy to understand why whole classes

who have just been dividing $\frac{4}{13}$ of $.017_{59}^{27}$ by $13_{14}^3 - 11_{7}^5 \times \frac{7.091}{.0087}$, cannot

tell without a great effort how many times $\frac{1}{2}$ is contained in 2, and very frequently even a great effort fails without the customary inversion, multiplication, etc., on the slate. The truth is, there is a clear waste of at least seven eighths of all the work done by the pupil in Fractions; for when he "inverts the divisor and proceeds as in multiplication of fractions" or performs any other operation on the Deductive plan, it is in the most rigid sense *mechanical*; he does not get the most shadowy glimpse of how many times his fractional divisor is contained in his fractional dividend; his result has no meaning whatever. And although he is sometimes *surprised* to find that 5 divided by $\frac{1}{6}$ is 30 whole ones, he never sees anything *ridiculous* in a supposed quotient of $\frac{1}{30}$. Each problem solved by him is merely an appeal to his memory, distinct as to the rule, indistinct as to the principles involved, but in no case an appeal to his understanding; and therefore not a problem to exercise him in the *relations of Fractions*. How different the case in the Inductive method. If his divisor is $\frac{5}{6}$ he first *sees* how many times $\frac{1}{6}$ is contained in one; then how many times in his dividend; lastly, how many times *five* sixths are contained in it. Each and every problem exercises him in the relations of the parts of a fraction to each other and to the unit; appeals to his conception in units and parts of units; makes demands upon his judgment in tracing relations; compels him to *reason* in drawing comparisons, and lays a solid, because natural, foundation for the subsequent deduction of principles.

Fortunately our primary arithmetics, generally mental, are constructed upon right principles. The two used in this State are especially good. Eaton's, because it is *not* Eaton's, but Colburn's; and Robinson's, because it is a book of one of the best series of arithmetics extant.

Unfortunately we have always shown, and shall for a long time continue to show, too great a disposition to divorce Mental

from Written Arithmetic. One of the best truths I learned in this connection and one which took nearly a year's time to force itself upon me, was this: that instead of dividing arithmetic for teaching purposes, into Mental and Written, it should be divided into Mental, and Mental and Written: and now it seems as if I had always known it. The details of this subject, as I have wrought them out for use in my own school, are altogether too voluminous for the pages of the Teacher, for which lucky circumstance let its readers be duly thankful. I will therefore append only a rough sketch of the outlines as they lie in my mind, so that my readers may compare them with their own ideas upon the same subject.

MENTAL.

PERCEPTION.—Exercised upon objects themselves, or upon their pictorial or other representations.

CONCEPTION.—Exercised upon concrete numbers.

JUDGMENT.—Exercised in developing analogy by means of abstract numbers.

MENTAL AND WRITTEN.

CONCEPTION.—Exercised upon concrete numbers. The abstract numbers are abstract only in not designating the kind of object, but are essentially concrete because unity is the object of the conception.

JUDGMENT.—Exercised by induction into principles, application of principles and deduction of rules, definitions, classifications and general theories.

I shall consider myself under great obligations to any of my readers who may afford me the profit and pleasure of their opinions on this subject.

ORTHOGRAPHY—HINTS AND SUGGESTIONS.

BY A. F. HILL.

[NOTE.—In the article entitled “Common Errors in Orthoepy, Orthography and Syntax,” published in the November number of the TEACHER, I offered the following rule for spelling words ending in *eive* and *ieve*, and their derivatives: “When the syllable containing the diphthong begins with the single consonant *c*, as in *receive*, the *e* precedes the *i*, thus immediately following the *c*; but in all other cases, such as *grieve*, *believe*, etc., the *i* precedes the *e*. It will be remembered that, as it is clearly stated in the article, this is a rule *only* for the spelling of words ending in *eive* and *ieve*, and their derivatives. Losing sight of this fact, as any one is liable to do, a writer in the January number of the TEACHER, in an article entitled “Rebellion in the English Language,” in which are some excellent suggestions on

the subject of English Orthography, offers about thirty words as exceptions, such as *leisure, vein, feint, heir, etc.*; but it will be perceived that not one of these ends in *eive* or *ieve*, or is a derivative of any such word; and I therefore claim that my rule still stands without a known exception.]

I do not propose to treat on a new subject. I intrude this time, on the pages of the TEACHER, boldly to advocate a revolution in Orthography, looking to the establishment of a system of spelling approaching the *phonetic*. A literary convention, representing all the peoples who speak the English language, is the means by which much might be speedily accomplished in the way of making important and much-needed improvements in the English language. Let our present elaborate dictionaries be taken as a mere foundation on which to build a new and grand orthographic structure. Let a method be adopted, perfect in its simplicity, and if possible, let every *silent letter* be expelled from our vocabulary, as a drone.

There are thousands of words in the English language which, as they are now spelled, contain from one to half a dozen superfluous letters—*silent*, as they are termed—letters worse than useless, because they are only calculated to puzzle and confound the pupil. I will cite a few examples, writing the same words opposite in the new form I propose to give them:

COMPLEX.

Yacht,
Though,
Through,
Tough,
Hiccough,
Laugh,
Row,
Fraught,
Freight,
Wright,
Telegraph,
Diphthong,
Psychology,
Phthisic,

SIMPLE.

Yot, or Yat.
Tho.
Thru, or Throo.
Tuf.
Hikkup,
Laf, or Lauf.
Ro.
Fraut.
Frat
Rit.
Telegraf.
Difthong.
Sicology.
Tizik.

The present orthography of the last named word amounts to the ludicrous. It has been made the butt of ridicule by every schoolboy, although the object itself, notwithstanding its unfortunate orthographical dress, is entitled to some respect. I thoroughly pitied a poor fellow once, who, in the prime of manhood, was just learning to write, and who asked me how to spell *phthisic*, stating that he had carefully gone over the whole "T" department of the dictionary several times, and failed to find the truant word. I enlightened him as to the eccentric and extraordinary orthography of *phthisic* and he remembered how to spell it almost a quarter of a minute. As for *scissors*, he learned to spell that correctly in less than three weeks.

It is related of a certain well-known member of Congress,

who is more remarkable for honesty of heart than culture of head, that he entered a book-store in Pittsburg, Pennsylvania, one day, and asked for a dictionary.

"Are all the words in this?" he inquired.

"Yes," replied the clerk, "all that are in common use."

The purchase was made, but next day our congressional friend came stalking into the book-store with the valuable collection of words under his arm.

"I thought you told me I could find any word in this," he said to the clerk, laying the book down.

"So you can," was the reply.

"Where's *physician*?" asked the statesman, with an air of triumph.

The clerk opened the dictionary, referred to the desired word, and pointed it out with an emphatic—"there."

The public character gazed upon the word and, a whole volume of light breaking upon his face, exclaimed:

"O, I thought you spelt it with an 'F'."

Very natural, was it not?

When I suggest that our orthography be so simplified and improved that we shall write *tho*, instead of *though*; *kof* or *kauf*, instead of *cough*; *enuf*, instead of *enough*; *sizm*, instead of *schism*; *sla*; instead of *sleigh*, etc. I know what the reader's exclamation will be, namely—"O, that would look too odd; we never could reconcile ourselves to it!"

Now, would not English scholars have uttered the same exclamation two hundred years ago, had any one proposed to write the language as we write it now? Here is a specimen of the English language of two centuries ago, taken from an account of an earthquake in New England, as given in "Bradford's History:"

"This year, (1638,) about ye 1 or 2 of June, was a greate & fearfull earthquake; it was in this place hearde before it was felte. It came with a rumbling noyse, or low murmure, like unto remoate thunder; it came from ye norward and pased southward.

Does this not look very droll to us? Yes. Would not our present orthography of these words have looked just as droll to the people of those days? Yes. If we could now see a specimen of the improved English language of a century or two hence, would it not look as droll to us as ours would have seemed to our ancestors? Yes. After the improvements of a century or two, will not the words and sentences which we now regard as quite artistic, appear as odd as those of our ancestors now appear to us? Yes. Do not allow yourself to be unnerved and discouraged by that terrible exclamation—"O, how would it look?" Be bold and fearless in your endeavors to benefit mankind in a literary point of view. Let us move in this matter. Let us do the work which every frank person will admit *must* and *will* be done within a century—that of simplifying the English language

and rooting out its many incongruities. Let us do this great work for our children and children's children, and the glory of its accomplishment will be ours.

OUR GRADED SCHOOLS.

IF the supernal arrangements of Heaven were spread open to our critical gaze, there would be found plenty of people on this earth who would object to such arrangements, simply because they had nothing to do with their origin, or their care. There is no system or code of laws known on earth that could not be despoiled by objectors, who had either broken them or wished to do so. What are we to do under this selfish condition of things? Make the best of it, and build up that which is good and let the grumblers go.

One of the wisest and best institutions in the world is the common school system of America, yet there are thousands of wise-acres who imagine they see innumerable faults in it, and therefore deem it doomed to destruction. Some of these growlers are pretended "friends" to the cause, who are over anxious to have it constantly changed. Poor, witless beings, whose objections are as idle as the "baseless fabric of a dream."

Let us look into the *graded* system and see what it is. We know how utterly an army would fail if gathered at random, and rushed into battle without drill—nothing short of heroic devotion to country, or worship of a leader, would make such a horde victorious. And what are the tens of thousands, nay millions of undisciplined children in our land but an army? How are they to be drilled, trained, educated and controlled? By allowing them the bent of their natures? Try it! Pandemonium were a paradise in comparison.

In dealing with these masses, something else must be thought of besides mere book education. They are to be held in check, controlled by firm, true hands—hands unstained by love of gold, authority, or political corruption. In the country district school, where the numbers are small, a graded system is not needed. Pupils of all ages and conditions meet in the same room for a common instruction; and there will be found no better school in the world than such a country school with a tried living teacher at the head. Our best men and women have been educated in just such schools. They are emblematical of our government, and most conducive to the progress of the pupils. There the child of the alphabet class listens daily to the recitations of older ones, and, when in time, he comes up to join the grammar class, he has his memory stored with much information on these studies, gained only by the drill of listening and thinking; for the biggest dunce *thinks something* of what he hears.

In our large cities it is different. Here the throng is so great that they must be crowded into small buildings, according to numbers. Common sense ought to suggest that some sort of system must be arranged to teach, with any degree of efficiency, such crowds. This army can no more scale the heights of learning, undrilled, than could the army of Napoleon cross the frightful pass of Cenci, undisciplined. The time will yet come when history, honor and justice will give as much credit to the *obedient* platoons of France as they now do to the *one* man smoking his pipe and drinking his coffee a hundred miles away! Heroes forsooth. How much has the world progressed under their sway, in comparison to an educated commonality?

If then, there is need of a Graded System, it should be based on the most exacting rules. No system is strong without exaction. The advantages of a *thoroughly* graded system are the saving of time and labor, and thereby reaching a larger number of minds in a given time. But it may also have its evils, although experience proves that those evils are usually the result of indifference or neglect. That the system may be effectual, the conditions must be sharply carried out; and the man or woman who does not know how to grade a school, according to the just merits of *all* concerned, is not fit to be over such a school. Without this firm adherence to merit, the system admits of the largest injury, and endless trouble from rich, ambitious and dogmatic parents, who have the impression that their children must be advanced at all hazards, whether fit for it or not. In the exact justice of the graded system, a poor child has the same chance as the rich one, and the same protection of its rights. Without such adherence to justice, our system is a monstrous failure.

As a course of instruction, the system doubtless has its faults; but we must consider the endless variety of opinions as to what is a just and true course, suitable to the age and the future wants of our youth. Every year shows a modified opinion on the subject; and with the change of condition comes a corresponding demand for an education to meet the change.

Much of the objection raised against the system comes from the failures of pupils to meet the exactions of study and examination. Invariably it will be found that such failures are children whose parents have been unduly ambitious for their promotion, and without sensible reflection for the real good of the child, have demanded and insisted on their advancement into grades where they were utterly incapable of doing the work required, where discouragement is sure to follow to both teacher and pupil. Loss of real progress sacrificed for the sake of a name! Too often principals humor this selfish and false pride on the part of parents—more for the sake of peace perhaps, but inadvertently stabbing their own schools and weakening the system. And for this condition of things, the whole thing must

be abused. Too many seats are occupied in our upper grades by just such pupils, admitted through such motives.

Another cause of weakness is in the over crowding of our classes. The exigencies of the case may possibly be the blame for this, but it should not be the eternal excuse! The facts exist and we must look at them as such. In the Grammar Schools of San Francisco there are four grades of a year's work each. Each has its specified task to accomplish, preparatory to the next, and herein is the benefit of the graded system to the individual child. It becomes a *drill*, mechanical and monotonous perhaps to a large degree, but that very *drill* is what the majority of our children *need*. It is not the *amount* of knowledge they gain, but the little they do have, should be thoroughly learned. We have to deal with mediocrity, oftentimes stupidity, not genius. We contend with natural indolence and antipathy to thought and study—mental blocks, on which the teacher's impressions fall like clods. What are fine-spun theories and high-toned philosophy on such mutes? Nothing but indefatigable *drill*, "line upon line," "precept upon precept," will ever modify them! And where they are thus kept on a piece of work until they have *conquered* it, then the system becomes a benefit. One item of knowledge or thought well learned is better digested than a whole college course bolted according to its price. Our daily testimony is, that both boys and girls come into our schools having passed *over* the elaborate course of private institutions, yet are unable to comprehend the simplest statements of principles of those studies. Their parents are mortified that they must rank so low in real progress, and to spare their feelings children are too often put in the higher grades, only to fail, to the detriment and chagrin of all concerned. Let us look also at the *time* required to do the work of these grades. Owing to the pressure on our schools, there are few classes numbering less than fifty pupils, oftener they number as high as sixty-five or seventy; in the primary, often up to ninety.

We will take the low average of fifty. The *daily* time required is five hours. In the first and second grades they must stand an examination in *ten* branches of study, not including the time required for music, maps, and drawing. With fifty pupils, and five hours, we have an average time to each pupil of one fifteenth of three hundred minutes, and in those six minutes is pressed the educational juice of ten hard branches of study, or three fifths of a moment to each study, to shine pre-eminent as a scholar! In case of a failure to accomplish this feat, we are told that our schools are a mockery, and our teachers incompetent. For one, *I* personally proclaim my incapacity to work impossibilities. Verily the fools are not all dead! But this is in the time of our ordinary schools. In the Cosmopolitan schools two hours per day are spent in French and German, leaving only three hours per day to do the same amount of

English work that is done in five in the others. Three hours for fifty to seventy pupils, not four minutes to each, and less than that to conquer ten branches of study. Is it at all strange that teachers, parents, and pupils chafe under the pressure? What stress of brain power is here needed to plan and manouver to be faithful and victorious! How our graded system looms up in its virtue now, and we see how impossible it is to make it a success unless it be sustained on the utmost exaction. Alas! how many dead heroes lie unnoticed on battle fields more honorable than Marathon or Waterloo. But these heroes are *women*, therefore they are unworthy of promotion.

This little piece of figuring may doubtless be brought down to a nice point of mathematical demonstration; but the *failures* are as mathematically evident, and I assert that this overcrowding of classes and miserable grading is doing the mischief. True we have some lazy and incompetent teachers, but their indolence is not sufficient to draw back at this rate the success of our live teachers. It is in the light of these facts that we may spare a little mercy for the over-worked teachers who are trying to do this prodigious piece of work; and if the numbers are not increased willingly, then to suffer oftentimes personal insult and abuse at the hands of irate and pompous parents. Think of ten or fifteen thousand children being daily taught by about three hundred teachers! How *just* and critical should be the system that must reach so many minds! How unswerving should be the watchfulness over favoritism. Only one level for all. Reproach to those who violate it! As it is, the large majority must wait their appointed time to finish their grade work, while others, without fitness, are freely admitted over their hard earned labor, because their fathers do not wear a major general's straps, and their mothers do not pay taxes by the thousands. If properly carried out, and the instruction restricted to the needful branches only, there is no good reason why our graded system should not be, as it has been proclaimed, the glory of America.

L. T. F.

PHILOSOPHIC ABSTRACTION.

ONCE upon a time, the great Isaac Newton, while arguing knotty points and smoking tobacco, (as philosophers often do,) seized a young damsel's hand, and oh! horror of horrors!—we tremble as we write it—deliberately inserted one of her fairy fingers into the bowl of his tobacco pipe—a remarkable instance, it must be admitted, of absence of mind. Undoubtedly the philosopher was a very absent minded man, but his absence of mind was of that quality which enabled him to win such fame and make such discoveries in science. He had this power of abstraction to a degree that appears marvelous, as the elder Disraeli

writes, "to volatile spirits and puny thinkers." To this habit may be referred most of his discoveries. An apple falls upon him in his orchard, and the system of attraction succeeds in his mind: he observes boys blowing soap-bubbles, and the properties of light display themselves.

Socrates was similarly subject to fits of abstraction. Of Marini, the Italian poet, it is said that, in revising his *Adonis*, he suffered his leg to be burned for some time without perceiving it. According to Cicero, Cato applauded Gallus, who, when he had sat down to write in the morning, was surprised by the evening, and when he took up his pen in the evening, was surprised at the appearance of morning. Poggius—we again borrow from the elder Disraeli—tells of Dante, that he indulged his meditations more strongly than any man he knew; he was only alive to what was passing in his mind—to all human concerns he was if they had not been! Dante went one day to a public procession—he entered the shop of a bookseller to be a spectator of the passing show. He found a book which greatly interested him; he devoured it in silence and plunged into an abyss of thought. On his return he declared he had neither seen nor heard the slightest occurrence of the public exhibition which had passed before him.

Such abstraction renders everything surrounding a man as distant as if it was in another part of the globe, or as unreal as a dream. A modern astronomer one summer night withdrew to his chamber; the brightness of the heaven showed a phenomenon. He passed the whole night in observing it, and when his friend came to him early in the morning and found him in the same attitude, he said, like one who had been re-collecting his thoughts for a few moments: "It must be thus; but I will go to bed before it is late." He had spent the entire night in meditation on the celestial phenomenon revealed, and did not know it. And thus may the tales told of Sir Isaac Newton's absence of mind be accounted for. Such absence indicates not intellectual weakness, but strength, and it is a quality which Sir Isaac possessed in common with some of the greatest geniuses the world ever saw.

COMMON-SENSE TEACHING.

THERE are two sources of knowledge from which we may learn all things—experience, and intuition. The former is gained by the use of our organs in executing ideas, or in putting into practice our intuitions. It is said to be our best teacher, because knowledge gained thereby becomes our own, becomes individualized, and is therefore available on all occasions. The inference is, that knowledge derived from other kinds of instruction is not available, or is capable of being used only to the extent to which it is the result of experience.

It follows, therefore, that methods of instruction are valuable in proportion as they beget experience, and every teacher who adopts a method should compare it with this standard to find its worth. If what is learned is separated from the activities of life, the teacher may know that his instruction does not become the property of his pupils, and his method is not a good one. If pupils gradually lose, through disuse, what is called common sense, however many historical facts they may be able to relate, the teacher may rest assured that he is only cramming. Most of our text books are based on the idea of cramming, and most teachers follow the books, and children grow up learned fools. It is a prevalent belief that children should learn many things that they cannot comprehend, because they will eventually grow up into an understanding of them; and hence they are taught authoritatively many abstract ideas of whose application they have not the slightest conception. They are not taught to use their senses and their judgments, and grow up without observation and without reliable data for mental action, except that which comes from others. Thus they remain dependant on others, and fail to accomplish anything in life save by accident.

I can illustrate authoritative teaching by an example better than in any other way.

Not long since, a girl about fourteen years of age came to me for examination to enter my school. She had studied all the common branches, and at the academy whence she came she had studied Physical Geography, Physiology, Philosophy, and some other branches. I happened to ask her some questions in Geography first. The following is the result:

Question.—"What is the shape of the earth?" *Answer.*—"Round, like a ball." *Ques.*—"Can we say round like an apple or orange?" *Ans.*—"No, sir." *Ques.*—"Is an apple round?" *Ans.*—"Yes, sir." *Ques.*—"Is an orange round?" *Ans.*—"Yes, sir." *Ques.*—"Now, if a ball, an apple and an orange are all round, can we not say round like an apple or an orange?" *Ans.*—"No, sir." *Ques.*—"Why?" *Ans.*—"The book said 'round like a ball'." *Ques.*—"How do you know the earth is round?" *Ans.*—"I don't know, sir; but the book said it was." *Ques.*—"How did the author know the earth is round?" *Ans.*—"I suppose he must have been a philosopher." *Ques.*—"Well," said I, "let us philosophize a little. If I should tell you that it is now dark, would you believe me?" *Ans.*—"No, sir" (laughing). *Ques.*—"Why?" *Ans.*—"Because I can see for myself that it is not dark." *Ques.*—"If I should say this floor is ice, would you believe it?" *Ans.*—"No, sir." *Ques.*—"Why?" *Ans.*—"Because I can see and feel for myself that it is wood." *Ques.*—"Does the earth look round to you?" *Ans.*—"No, sir." *Ques.*—"Why, then do you believe the book, when it tells you that the earth is round?" *Ans.*—"I

guess it is not round at all"; and her face beamed as though a celestial truth had dawned upon her soul: it was probably the first idea she ever experienced, and, though incorrect, made her extremely happy and eager to experience more. She had been taught to use her senses in acquiring knowledge, and hence had lost all her common sense.

I once went before a school of sixty pupils, all studying Geography, (and they had done so for more than a year,) and I asked them about the polls of the earth, meridians and parallels. After receiving various definitions as furnished by the book, I thought I would test their experience a little. Taking a ball, I wound twine around it to represent meridians: of course, the points at which the twine crossed were built up considerably. Holding it up before the school, I asked what it represented. All replied, "The earth with its meridians." Upon being asked what was the effect of the crossing of the meridians at the polls, they almost unanimously said that their crossing made a great hill or mountain there.

Such is the effect of not obtaining knowledge by experience, and leaving pupils to interpret abstractions by their limited experience. They cannot interpret the unknown except by the known; and we should therefore be exceedingly careful to furnish the mind, through the senses, such ideas or experience as will enable them to obtain correct impressions. Any other course makes unpractical scholars, whose book-knowledge, being separated from their sensuous knowledge, is of little or no use to them in the affairs of life.

It is not difficult, therefore, to know how we are teaching. A few tests like the above will show our methods and reveal their true value. By looking at ourselves and watching the reception of ideas by our own minds, we shall be able to present ideas to others in a definite, clear and attractive manner.—*Illinois Teacher.*

NOTHING LEAVES US AS IT FOUND US.—If a sheet of paper on which a key has been laid be exposed for some minutes to the sunshine, and then instantaneously viewed in the dark, the key being removed, a faded spectre of the key will be visible. Let this paper be put aside for many months where nothing can disturb it, and then in darkness be laid on a plate of metal, the spectre of the key will appear. This is equally true of our minds. Every man we meet, every book we read, every picture or landscape we see, every word or tone we hear, leaves its image on the brain. These traces, which under ordinary circumstances are invisible, never fade, but in the intense light of cerebral excitement start into prominence, just as the spectre image of the key started into sight on the application of heat. It is thus with all the influences to which we are subjected.

 MISCELLANEA.

FALLACY AS TO "USEFUL" KNOWLEDGE.—There was, I always thought, a very decided fallacy in the nomenclature adapted at the last great movement of educational reform, when societies were constituted for the "diffusion of useful knowledge." The fallacy lay not only in the assumption that there is some knowledge which is useless to the world—an assumption which can not bear investigation for a moment, for no real knowledge can be useless in any of its three great departments, the knowledge of nature, of man, and of God. Nor again, did it lie only in the assumption that material utility—the promotion of material civilization, the making of steam-engines and telegraphs, the improvements of manufacture and of art—that this (I say) alone was useful; that there were no higher necessities in the nature of individual man, no higher elements in a nation's life. But it lay in the idea that the knowledge of what is in itself useful, is pre-eminently and universally useful knowledge. A locomotive, for example, is highly useful, but it does not follow that the knowledge of it is pre-eminently useful for those who are not mechanicians or engine drivers. All knowledge is, I grant, generally useful, but surely we may doubt whether this has any special usefulness to us. If I had to choose between a knowledge of Shakspeare and a knowledge of the steam-engine, or between some knowledge we will say, of art and chemical manufacture—if I had to ask which of these better fitted me to understand the meaning of life, and to enter into the higher elements of its happiness, I should choose without hesitation the knowledge of literature and art, which the school above referred to would have branded as comparatively useless. The fallacy is not dead yet. It was but a little while ago that a great political and social reformer was very severe upon our educational system, because, while it taught the subtleties of language, it did not tell men where to find Chicago on the map, and because it knew more of the little Ilissus than the gigantic Mississippi. Why, gentlemen, how can it matter to the world at large whether they do or do not know how to put their finger at once on Chicago? If they want go to there, or to have dealings there, they can take down the Atlas and find it. In the meanwhile, is a man's nature less cultivated, because he does not know where a particular mass of houses and people is situated? And suppose (which was, I think, the great complaint against the classic Ilissus) that it is a little dribblet of a stream, which a man can cross dry-shod in summer, does that prevent the fact of its being bound up in association with some of the highest poetry and the noblest philosophy the world ever saw—poetry and philosophy which are living and determining now some of the main currents of human thought? The comparison thus put is really the study

of Sophocles or Plato as against the knowledge of the map; and (modernism notwithstanding) I would still declare for the former. Pray understand that of geographical science, as science—I speak with profound respect—there is in it much grandeur of scope, much closeness of induction, and ever-varied field of interest. But the comparison here was one of so-called useful knowledge, because Chicago was a wealthy and growing town, and the Mississippi a river of enormous commercial consequence; and here I say that there is the old fallacy, and that fallacy is a great one. I rejoice, therefore, to see sounder and deeper views in our own day—to see that technical education is viewed and recommended, not only for its fruits of material utility, but because it is deemed likely to promote excellence of education as such.—*From Lecture delivered at King's College, by Rev. Dr. Barry, Principal.*

IS THE MOON AN ICEBERG OR A FURNACE?—This is the question selenographers are now earnestly discussing. It is strange that so little should be known of the nearest heavenly body, as to leave such a question open and championed on both sides by men of genius and great experience in lunar observations. That two theories so precisely opposite should exist with regard to the state of the moon, may well throw doubt on some of the most confident guesses into the condition of the more distant sun and planets and stars. Sir John Herschel stood forth as the chief defender of what we may call for brevity, the “furnace theory” of the moon. He believed that, owing to the long lunar days—lasting some three hundred of our hours—the moon warms up under the fierce heat of the sun, until its temperature is more than 290 degrees F. above that of boiling water—or about 492 degrees. For nearly 70 hours any given point on the moon's surface turned towards the sun, is exposed to the almost vertical rays of that body. The moon having no atmosphere, or one so tenuous as to be invisible to us, there would be no mitigation of a shelter from the blazing downpour of the solar rays. No animal life, no vegetation such as we are familiar with, could live for an hour under such torrid influences—to say nothing of the want of an atmosphere, which, in the terrestrial order of things, is indispensable to the vitality of animals and plants.

So far the Herschel theory. But Capt. John Ericsson, the distinguished American inventor, a man of profound originality, and a slow and cautious observer and theorist, recently propounded an opinion, that the moon's surface is one mass of ice. He has arrived at this conclusion from novel and ingenious experiments to ascertain the actual intensity of the solar rays in absolute space, that is before they enter the earth's atmosphere. We have not room to detail his process of investigation, which were given in full to the American Association for the Advancement of Science at its late meeting, and will only say that they

are regarded by him as proving the actual heat of the solar rays in absolute space to be more than 300 degrees below the freezing point of water—a degree of cold which has no parallel in human experience, and which would be as deadly to animal life and vegetation as the high heat imagined by Herschel. The reason why the earth is not as cold as the moon is, that the former has an atmosphere which prevents the earth from parting with the solar heat as fast as received, by radiating it back into space. In other words, the atmosphere permits the solar rays to reach the earth, and then keeps the resulting heat imprisoned, until it is augmented up to the existing average temperature, when other causes step in to prevent it going higher. Capt. Ericsson in attaching such intrinsic importance to the atmosphere as a preventive of the escape of heat once imparted to the earth, has the familiar experience of aeronauts and mountain climbers on his side. At the height of a few miles from the earth a freezing atmosphere is encountered, which is satisfactorily explained by the thinness of the air; the radiation of the earth's surface expending its principal heating effects on the denser strata of atmosphere below. Assuming, as may properly be done, from all the evidence, that there is no atmosphere about the moon, it would follow that the Herschel theory must be erroneous; and it will remain one of the curiosities of science that Herschel should have regarded the absence of a lunar atmosphere as causing an intense heat on the moon's surface, while Capt. Ericsson takes that fact to be a positive proof of the superlatively cold condition of that body.

The Herschel party claim that recent experiments with the great Rosse telescope sustain their theory. That gigantic instrument has the largest metallic reflector in the world, and by connecting the telescope with clock work, during the present year, Lord Rosse has been able to concentrate the rays of the moon upon a delicate heat measurer, for the purpose of determining whether the moon gives out heat or not. No tests previously made were satisfactory on that point; but this one settled the question beyond a doubt. The lunar rays do transmit a sensible degree of heat. This fact is quoted to substantiate the Herschel theory, but it does not necessarily do so. For it is a well established truth that heat may be reflected from surfaces of ice, or iron, or glass, or other substances, themselves cold. Reflected heat from cold bodies, or heat radiated from hot bodies, would produce exactly the same effects upon objects receiving the rays. No means are now known by which reflected and radiated heat can be told apart, except by an examination of the surface from which they proceed. The Rosse experiments, therefore, while they are very interesting as deciding a mooted point and demonstrating that the "chaste beams of the watery moon" are not altogether devoid of heat, settle nothing conclusively as between Ericsson and Herschel; for there is no

doubt that Ericsson's hypothetical lunar ice would reflect as much heat as Herschel's supposed burning temperature would radiate.

Under the impulse of the discussion which the bold and original Ericsson has started, the moon will become more than ever an object of inquisitorial examination. Perhaps some telescopes may yet be made powerful enough to determine by direct inspection, once and forever, the question whether the lunar mountains are, as Ericsson says, enormous cones of ice, fed by water from the interior, which freezes the moment it comes to the surface; or the peaks of extinct volcanoes, as astronomers suppose them to be.—*From the New York "Journal of Commerce."*

WHAT THE TELESCOPE IS DOING.—In connection with the Chicago University, it is well known there is one of the largest telescopes in the world. As it has not announced any startling discoveries, it has been a matter of wonderment what the astronomy was about. The following paragraph shows what the business is which occupies the attention of Professor Safford:

The destined work of this wonderful telescope is to make, in connection with the nine chief observatories of Europe, and America, an entirely new catalogue of 250,000 stars, determining the right ascension and declination of each particular star, so that by observing its position astronomers may, in far off ages, be able to pronounce authoritatively on its motion, and to declare in what direction it has proceeded through the illimitable voids. At this moment it is slowly and silently performing its sublime work, and furnishing those far off astronomers the data upon which to base their calculations respecting that mighty problem—the direct motion of the sun through space. When this is solved, data will also be abundant for locating the position of the great central sun, around which millions upon millions of other suns, popularly denominated stars, do in all probability revolve. The great work being divided among the ten principal observatories of the world, will make the share of it falling to the Chicago Observatory, 25,000 stars—upon each one of which the most careful observations will be made and recorded. It will require about ten years to accomplish this stupendous work, and when it is done we may expect some most important astronomical discoveries.

A PETRIFIED FOREST.—The *Engineer* informs us that there exists in the neighborhood of Cairo a petrified forest, which presents features of great interest to the geologist and antiquarian. The fragments, to all appearances, are stones, and in myriads of pieces are scattered around and half buried in the sand. Describing the forest, the *Engineer* says:

One of the most remarkable circumstances is that the most rigid scrutiny fails to detect the least vestige of arable land, the

smallest oasis, which could have afforded an origin of these mutilated wrecks of timber. Occasionally a trunk is found riven in two, as if split by the heat. The largest of these specimens measures ten feet in length, and has a diameter of twelve inches. One would naturally expect that the species or description of timber to which these petrifications belonged, would be identical with that met at present in the country. The reverse is the fact. The oak, the beech, the chestnut and others are distinctly recognized; but scarcely a single specimen can be discovered of the palm, the sycamore, or the fig tree. The perforations produced by the passage of insects through the bark are clearly visible, and a gummy secretion has been found in some of the holes made in this manner.

THE view long entertained by some American Scientists regarding electricity, is similar to that expressed by the Rev. Father Secchi, of Rome, in a letter addressed to M. F. Mazco, at Turin, the following extract from which appears in the Paris *Les Monde*: "I believe that the true theory of electricity will result from the principle that electricity is not a motion, but a change of the quantitative and dynamic equilibrium of ether which constitutes the atoms of the substances, and that the propagation of such a change is brought about by the moving of the ether from one atom to another; this motion shakes, disturbs the ether of the atoms, and thus produces heat."

In the Atlantic Ocean, a little west of the Azores, there exists a space seven times larger than all Germany, according to Humboldt, completely covered with a dense mass of vegetation, the so-called Sargossa Sea. M. J. Laviniere has proposed to the French Agricultural Society to make these floating meadows subservient to the purposes of agriculture. He suggests that the ships occupied during the summer cod-fishing, should in other seasons be employed in conveying these weeds to the Azores, where they can be pressed and dried, and, after having valuable salts extracted from them, they could be carried to the French coast. It is calculated these floating meadows produce annually vegetable matter sufficient to manure not less than 1,800,000 acres.

LIGHT IN THE SCHOOL ROOM.—Rev. T. De Witt Talmage, of Brooklyn, N. Y., in a recent sermon, thus spoke of light in the school room:

"Let us have plenty of light in our school-rooms and homes—light, clear and beautiful, such as God pours out of his sun every day, a world full of it; but not crowding through between small windows, and glass-stained or cobwebbed: plenty of light, like that which puts blue into the gentian, and gold on the cowslip, and spots the pansy, and covers the sea with emerald, and sends up the mist of the valley into whirling columns of

glory sky tall, and at sunset pulls back the bars of heaven until the brightness of that land strikes through and through the cloud racks, dripping down the battlement in sapphire, and purple, and orange, and flaming fire. Give us light and no gloom, for 'God is light, and in Him is no darkness at all.' If the photographer takes the brightest room in his building to make his pictures, shall we not have a bright room where the Sun of righteousness is to impress the image of the eternal God on the human soul? Let there be deep night in mountain-cavern, and down in the coal-shaft, and in the hold of ships, but let it fly from the school-room as quick as you can batter a hole in the wall or throw back the shutters. God said at the beginning, and it thrilled through all the universe, 'Let there be light,' and there was light."

"With the light will come the air—not the bottled-up air of other Sundays, kept over from week to week, as though, like wine, it improved by age; or such as lingers in damp basements under the church, but fresh, clear air, such as comes panting off the sea, or down the hill side, sweeping up the aroma of whole acres of red clover-top. Make such places bright and glad. Because Christ was born in a manger is no reason why we should worship him in a barn.

A MECHANICAL school for women has been opened at Warsaw, for the object of training young women of the lower classes in all the lighter kinds of handicraft.

REPORT OF PUBLIC SCHOOLS.

ROLL OF HONOR.

PRIMARY DEPARTMENT OF P. M. COLLEGE, *Vacaville, Solano County*; N. Smith, Teacher. For the term of five months, ending December 24, 1869.

For one Month.—Mary A. Boyd, Mary Franklin, Sarah Franklin, Minnie Carleton, Emma Broughton, David Pena, Duke Bennett, Willie McClenny, George Stevenson, Willie Stevenson, Willie Simmons, Andrew Stevenson, Willie Clark, Ora Merchant.

For two Months.—Hettie Foree, Eudora McClenny, Minnie Callen, Jennie M. Stevenson, Alice Butcher, Frank Thomas.

For three Months.—Jessie V. Howell, Charles Thomas.

For five months.—Annie Stevenson, Willie Thomas.

FRENCH CREEK, *El Dorado County*.—Marie A. Fiske, Teacher. Following are the names of pupils who received ninety per cent. for scholarship and deportment during the month ending Nov. 26, 1869:

Sarah Worth, Martha Brandon, Amelia Schenck, Nellie Scott, James McCuestian.

DEPARTMENT OF PUBLIC INSTRUCTION.

MONTEITH'S GEOGRAPHIES.

The adoption by the State Board of Education of Monteith's series of Geographies seems to have given general, almost universal, satisfaction. The acknowledged excellence of these Geographies and their cheapness, make them popular wherever known. The adoption of the Monteith series will be particularly beneficial in San Francisco, where a loose construction of the School Law has resulted in the use of *five* different Geographies! A reform was demanded, and a beginning has been made at the right place.

The State Superintendent is receiving inquiries as to the *terms* on which the Monteith series will be introduced, and he thinks it proper to respond through the TEACHER.

Following is the proposition submitted to the State Board of Education in writing, by Dorville Libby, Esq., agent for the Monteith series, viz:

To the Honorable State Board of Education of California:

GENTLEMEN :—I hereby offer Monteith's series of Geographies, Nos. II, III, and IV, Pacific coast edition, for introduction into the Public Schools of California on the following terms:

1st. We will give Monteith's Geography, No. II, in even exchange for Cornell's Primary, now in use.

2d. We will give Monteith's Geography, No. III, in exchange for Cornell's Primary, or Warren's Intermediate, now in use, for fifty (50) cents, coin.

3d. We will give Monteith's Geography, No. IV, in exchange for Warren's Intermediate or Warren's Physical, now in use, for eighty (80) cents, coin.

4th. We will furnish Monteith's Geographies, Nos. II, III and IV, at the above rates in exchange for any other books of corresponding grade, now in use.

5th. To all pupils not having old books to exchange we will furnish Monteith's No. II for forty (40) cents coin; No. III for seventy-five cents, coin; and No. IV for one (1) dollar, coin.

6th. These terms of exchange shall continue three (3) months from the time when the proposed books go into use.

Very respectfully,

DORVILLE LIBBY,
Agent for A. S. Barnes & Co., N. Y.

San Francisco, Nov. 25th, 1869.

It is said that in the animated contest between the agents of the rival Geographies (Monteith and Cornell) verbal assurances of even more liberal terms than these were given by Mr. Libby, but no other terms were officially mentioned before the State Board, and therefore the minutes of the Secretary mention no other. The members of the State Board showed a commendable disposition to secure the best terms possible in the introduction of these books, but there is no disposition among them to force a hard bargain upon a publisher. The house of A. S. Barnes & Co., publishers of the Monteith Geographies, are fortunate in being represented by a gentleman of the high literary culture, and attractive personal character of Mr. Libby.

“240.”

THE office of the Superintendent of Public Instruction is now 240 Montgomery street, rooms numbers 1 and 2. This also is the publication office of the CALIFORNIA TEACHER. Send *there* your subscriptions!

AMENDMENTS TO THE SCHOOL LAW.

As it is so very easy to do mischief, even while attempting to do good, there is naturally some anxiety among the friends of education with regard to the action of the Legislature now in session. There is every reason to expect that legislative action in school matters will be judicious. The Committees on Education in the two Houses are composed of good men; they hold their meetings jointly, so that nothing will be recommended without the close scrutiny of both bodies; and nothing will be proposed, it is hoped, that is not clearly necessary. The harmony prevalent everywhere among school officers and patrons in the State, is happily reflected among their representatives at Sacramento.

LOCATION FOR THE STATE NORMAL SCHOOL.

The choice of a permanent location for the State Normal School is, at this writing, the absorbing question. *Our* views on this subject are well known. The matter will doubtless be decided before another number of the *TEACHER* reaches its readers. The spirited competition between the rival claimants for the school will secure one good result, viz: a liberal *bonus* in the way of land for a site.

UNIFORMITY OF TEXT BOOKS.

In California, the *theory* is in favor of uniformity of text-books. The *practice*, however, is different. We hear much complaint of the violation of the law in this particular, and a general desire for reform is expressed. The attention of County and City Superintendents and others officially interested is respectfully called to this matter. The State Superintendent proposes strictly to discharge his duty, as required in Section ninety-five of the Revised School Law.

STATE CERTIFICATES.

There are about forty certificates remaining in the office of the State Superintendent. The new clerk does not know where to send them. Please call at 240 Montgomery street, rooms No's 1 and 2, and get them, or send address.

RHEES' PATENT RULER AND PENCIL CASE SLATE FRAME.

An ingenious and simple contrivance, whereby A SLATE, A RULER and A PENCIL CASE are combined without taking any more space than does the ordinary slate. W. J. RHEES, Smithsonian Institute, Washington, D. C.

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The Second Term of the current year will commence on the 8th day of November, 1869. All candidates for admission must be present at that time.

COURSE OF STUDY.

REQUISITES FOR ADMISSION.

To secure admission to the Junior Class, Second Division, applicants must pass a written examination on the following subjects, viz.:

Eaton's Common School Arithmetic—to percentage.

Eaton's Intellectual Arithmetic.

Greene's Introduction to English Grammar.

Willson's Fourth Reader.

Spelling; Penmanship.

Applicants for an advanced Class will be required to pass an examination on the studies previously pursued by that Class.

JUNIOR CLASS—*First Session.*

Arithmetic—Eaton's Common School—complete.

Grammar—Quackenbos'—begun.

Geography—Guyot's Common School.

Reading—Willson's Fifth Reader.

Moral Lessons—Cowdery's.

Spelling—Willson's Larger Speller.

JUNIOR CLASS—*Second Session.*

Arithmetic—Eaton's Higher.

Grammar—Quackenbos'—complete.

Rhetoric—Boyd's.

Physiology—Cutter's Elementary.

History—Quackenbos'.

Vocal Culture—Russell's.

Book-keeping—Payson & Dutton's Single Entry.

General Exercises throughout the Junior Year—Penmanship; Object-Lessons; Calisthenics; Methods of Teaching; School Law; Composition and Declamation.

SENIOR CLASS—*First Session.*

Arithmetic—Eaton's Higher—reviewed.

Algebra—Robinson's Elementary.

Grammar—Greene's Analysis.

Natural Philosophy—Quackenbos'.

Physiology—Cutter's Larger.

Rhetoric—Boyd's.

Natural History—Tenney's.

SENIOR CLASS—Second Session

Botany—Gray's.

Physical Geography—Warren's, with Guyot's Wall Maps.

Normal Training—Russell's.

Geometry—Davies' Legendre—five books.

English Literature—Shaw's.

Book-Keeping—Payson & Dunton's Double Entry.

General Exercises—Same as in Junior Year.

REGULATIONS OF THE STATE NORMAL SCHOOL.

Adopted by the Board of Normal School Trustees, March 28, 1868.

1. All pupils, on entering the School, are to sign the following declaration of intention:

"We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State."

Male candidates for admission must be at least eighteen years of age; and female applicants at least fifteen years of age; and all must possess a good degree of physical health and vigor.

2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

• GENERAL INFORMATION.

The time for completing the Normal School course is two years, each divided into two terms of five months.

There will be Written Examinations and Public Exercises at the close of each term. The Graduating Exercise will be in May.

Pupils will be required to furnish their Text Books. Books for reference will be furnished by the State. Good boarding can be procured at about twenty-five to thirty dollars per month.

Applicants will please read attentively the "Regulations" as given above, particularly the Fourth and Fifth.

All graduates will be required to pass an examination on the entire course. Those who complete the studies of the Junior Class will be entitled to certificates of qualification, for teaching schools of Second and Third Grade.

For additional particulars, address

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It is held that this science should be taught in all Primary and Grammar Schools, for the same reasons that apply to all other branches.

The elements of Geometry are much easier to learn, and more valuable when learned, than advanced Arithmetic; and if a boy is to leave school with merely a Grammar-school education, he would be better prepared for the active duties of life with a little Arithmetic, and some Geometry, than with more Arithmetic and no Geometry.

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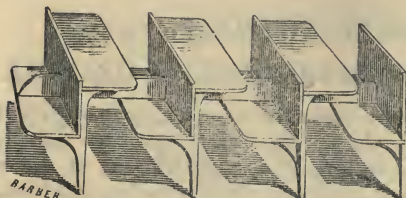
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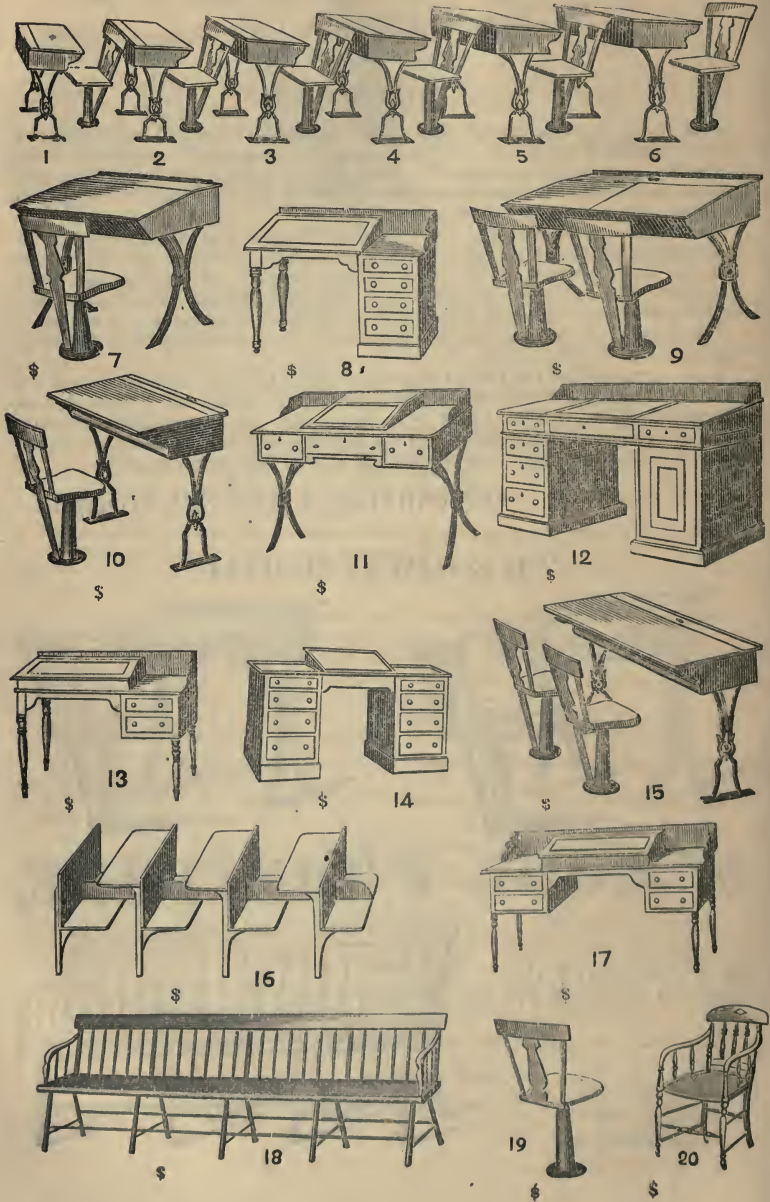
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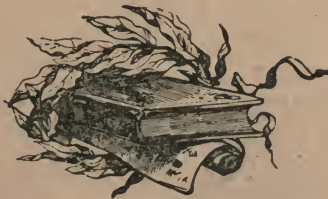
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BY BERNHARD MARKS.

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It is intended to serve the double purpose of presenting to the view at a single glance the order of the topics, with the cases under each, and of being a basis for *frequent mental reviews*.

Under each topic, and sometimes under each case, a problem is solved and the most convenient form of the operation given.

I have made a distinction between *solution* and *operation* which I do not find in any of the many arithmetics I have read and which occurred to me while delving in foundation work. The *solution* is the tracing of the relations between the data of a problem and is independent of specific values. The *operation* is the finding of the values. This distinction is analagous to the view taken by Comptes of the nature of Algebra, which he calls the Calculus of Functions, and that of Arithmetic, which he calls the Calculus of Values. As an example, take any ordinary problem in Fractions—as:

Reduce $48\frac{17}{29}$ to an improper fraction.

The *solution* is:

$$1 = \frac{29}{29}$$

$$48 = \frac{29}{29} \times 48 = \frac{1392}{29}$$

$$\frac{1392}{29} + \frac{17}{29} = \frac{1409}{29}$$

But the *Operation* is:

$$\begin{array}{r} 48 \\ 29 \\ \hline 432 \\ 96 \\ \hline 1392 \\ 17 \\ \hline \frac{1409}{29} \end{array}$$

Some Arithmetics give nothing but operations and call them solutions; others again give the solution of some problems, and the operations involved in solving others; but make use of only one term—either solution or operation—which is applied indiscriminately to the solution of one problem and to the operation involved in solving another.

Now, it is perfectly clear to my mind, that although the *solution* is the *valuable* part of the *mental* drill, the *operation* is the only thing needful in the *written* exercise. In fact, the only object in dealing with Written Arithmetic at all is the human impossibility of performing the *operations* on large numbers without the assistance of the eye.

Therefore, we should teach the solution as an oral explanation, and the writing of it should receive only *incidental* attention as a matter of convenience in written examinations, while the *operation alone* should be taught in Written Arithmetic as the prime object, that which the pupil will practice through life.

As this is intended to serve only as an outline of the teacher's work in Fractions, the problems here given should be considered merely as examples of cases to which the teacher should add according to the requirements of the class. For the same reason Topic No. 1 is not amplified at all.

It is to be borne in mind that only the succession of Topics, which are numbered, are supposed to follow the *natural order of presentation*; the Cases, which are lettered, take their places principally with reference to the *natural order of the subject*; wherefore, while the topics are to be

taken up in the order here laid down, the Cases are to be selected according to the grade of the class under instruction.

The development of Cancellation as here given will probably strike most teachers unfavorably at first view. The principle upon which Cancellation is generally applied is that if two numbers sustain to each other the relation of dividend and divisor, both may be divided by the same number without altering the value of the quotient. But the application of an abstract principle being manifestly too difficult for pupils when they first take up the class of problems which admit of Cancellation the whole subject is taught without it at first, and when it is finally introduced, it is used as a mere mechanical contrivance which in no way addresses the understanding. In fact, so completely is every vestige of thought banished from the operation, that when one fraction is to be divided by another the poor little divisor is made to stand on his head in order that the operator may know the dividend and divisor by their position without any *thought* as to their character.

Thus, to multiply $\frac{3}{4}$ by $\frac{2}{3}$, the *young* pupil is taught to multiply the numerators together for the numerator of the answer, and the denominators together for its denominator. As a matter of fact not one child in ten sees the effect of multiplying the four by the three; but suppose *all* were carefully taught that multiplying the denominator by 3 divides the fraction by 3, or gets one third of it, is it not a stupid way to divide $\frac{3}{4}$ by 3? And is not the same true of the multiplication of the numerators? Again: the *advanced* pupil is taught to cancel the 3's. If he has any conception whatever of the effect of his operation, he must regard the expression of his problem as itself the answer and the cancellation as merely a reduction of that answer to its lowest terms. As a consequence of such teaching, we ought not to be surprised when we find that the finished scholars of high schools and colleges, who have been for years familiar with fractions, imagine that there is only one way of dividing one fraction by another, or at most but two.

In developing the subject of Cancellation in the following pages, I had in view as a prime object to teach that only which is to be practiced through life. I would not object to teaching one form of operation as a *development lesson* or *preparation* for another, but what is taught to the *young* pupil, as set forth above, is not a necessary preparation for what is taught to the *advanced* pupil. But since the principle upon which Cancellation is generally applied belongs to the DEDUCTIVE stage, I found it a some-

what difficult matter to introduce Cancellation itself into inductive teaching. It became necessary to abandon the general principle upon which it is universally made to depend, and to use it merely as a means of putting out of the way parts that, having been dealt with, are no longer to be considered. Thus, in the above example, $\frac{2}{3} \times \frac{3}{4}$, instead of regarding the whole expression as a single object to which the principle of Cancellation is to be applied, I propose to keep distinctly in view the proper character of each fraction as multiplicand and multiplier; the former being the part *upon* which we operate, and the latter that by which we operate. Since, according to this view, the multiplier merely indicates what is to be done to the multiplicand, the whole of it must be erased or cancelled in every operation while the multiplicand itself, as modified by the operation, becomes the answer. To perform this problem, we consider that to find $\frac{2}{3}$ of a number, we may first find one third of it by dividing by 3, and then find two thirds by multiplying by 2. If we divide the multiplicand by 3 in the most convenient manner, we shall have the same denominator, but the numerator will be 1. We therefore cancel the denominator 3 and the numerator 3 as of no further use, while we write the new numerator 1 as a part of the required modification. Multiplying this result by 2 in the most convenient way the numerator remains the same but the denominator becomes 2. We therefore cancel the numerator 2 and the denominator 4 as of no further use and write the new denominator 2 as another part of the required modification. We have now cancelled the *whole* multiplier and the multiplicand as modified becomes the product. In this operation, we see how we find $\frac{2}{3}$ of the multiplicand. The cases that admit of partial cancellation only, or of no cancellation at all, according to the usual method, are treated in precisely the same manner—that is, by Cancellation. So that instead of regarding Cancellation as a hidden short-cut, to be revealed to only the few favored ones, on condition of their passing through it blindfolded, it is made the great highway which all may travel with their eyes open.

ORDER OF DEVELOPMENT.

1. *An apple or circle on the Board, being divided into 2, 3, etc., equal parts.*
 - a. What is 1 part called? 2 parts? Etc.
 - b. How to get $\frac{2}{3}$, etc., of any one thing?
 - c. How many halves, thirds, etc., in one?
 - d. How to get $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc., of 2, 6, 8, etc.

e. How to get $\frac{2}{3}$, $\frac{3}{4}$, etc., of 3, 6, 8, etc.

2. HOW TO WRITE FRACTIONS.

3. a. How many thirds, fourths, etc., in two or more?

b. In $2\frac{1}{2}$, how many halves?

c. In $\frac{4}{2}$, how many wholes?

d. In $\frac{5}{2}$, how many wholes?

4. a. $\frac{2}{3} + \frac{2}{3}$.

b. $5 + \frac{2}{3}$.

c. $5\frac{2}{3} + \frac{2}{3}$.

d. $5\frac{2}{3} + 4$.

e. $5\frac{2}{3} + 4\frac{2}{3}$.

5. a. $\frac{3}{4} - \frac{1}{4}$.

b. $5\frac{3}{4} - \frac{2}{4}$.

c. $5\frac{3}{4} - 2$.

d. $5\frac{3}{4} - 2\frac{1}{4}$.

e. $1 - \frac{1}{2}$.

f. $5 - 2\frac{1}{2}$.

g. $5\frac{1}{4} - 3\frac{3}{4}$.

6. a. 2 times $\frac{1}{4} = \frac{2}{4}$.

b. 2 times $\frac{1}{4} = \frac{1}{2}$.

7. 2 times $3\frac{2}{3}$.

8. a. $\frac{1}{2}$ of 2, 4, 6, etc.

b. $\frac{1}{3}$ of 4, 5, etc.

c. $\frac{1}{3}$ of 2, $\frac{1}{5}$ of 3, etc.

d. $\frac{2}{3}$ of 6, 9, etc.

e. $\frac{2}{3}$ of 4, 5, etc.

f. $\frac{2}{3}$ of 2, $\frac{3}{5}$ of 3, etc.

9. a. 2 is $\frac{1}{2}$ of what number?

b. $2\frac{1}{2}$ is $\frac{1}{2}$ of what number?

c. 2 is $\frac{2}{3}$ of what number?

d. 3 is $\frac{3}{3}$ of what number?

e. $\frac{2}{7}$ is $\frac{2}{3}$ of what number?

10. What part of 6 is 1? 2? etc.

11. a. $\frac{2}{3} \div 2 = \frac{1}{3}$.

b. $\frac{2}{3} \div 2 = \frac{2}{6}$.

12. $3\frac{1}{5} \div 2$.
13. a. $\frac{1}{2}$ of $\frac{2}{3}$.
 b. $\frac{1}{2}$ of $\frac{3}{4}$.
 c. $\frac{1}{6}$ of $\frac{7}{9}$.
 d. $\frac{2}{3}$ of $\frac{3}{4}$.
 e. $\frac{2}{3}$ of $\frac{4}{5}$.
 f. $\frac{1}{3}$ of $1\frac{1}{2}$.
 g. $\frac{2}{3}$ of $1\frac{1}{2}$.
 h. $2\frac{1}{2}$ times $\frac{2}{3}$.
 i. $2\frac{1}{2}$ times $1\frac{1}{3}$.
14. a. $\frac{2}{3} \div \frac{1}{3}$.
 b. $\frac{3}{4} \div \frac{2}{4}$.
 c. $1 \div \frac{1}{3}$.
 d. $1\frac{1}{3} \div \frac{1}{3}$.
 e. $2\frac{2}{3} \div 1\frac{1}{3}$.
15. a. $2 \div \frac{1}{3}$.
 b. $2 \div \frac{2}{3}$.
16. a. $\frac{3}{4} \div \frac{2}{3}$.
 b. $1\frac{1}{3} \div \frac{2}{5}$.
 c. $2\frac{3}{4} \div 1\frac{1}{3}$.
17. a. $\frac{2}{4} =$ how many halves?
 b. Change $\frac{1}{2}$ and $\frac{2}{3}$ to sixths.
18. a. $6\frac{1}{2} + 4\frac{2}{3}$.
 b. $6\frac{1}{2} - 4\frac{2}{3}$.

 UNITED STATES LAND SURVEY.

 BY A. J. DOOLITTLE.

THE "magnificent idea" of creating a fund for the support of schools in the new States, or those to be admitted into the Union after the organization of the general government by the original "thirteen", appears to have been conceived as early as 1785; as an ordinance passed on the 20th May of that year "for ascertaining the mode of disposing of the lands in the western territory" in which a plan was devised for surveying the same into townships of six miles square, and the subdivision of these townships into sections of one mile square, (or 640 acres each) and numbering the same from 1 to 36 consecutively, which is as fol-

lows: Commence in the northeast corner of the township at figure 1 (one) and read within the squares 1, 2, 3, 4, 5 and 6 to the northwest corner of the township, thence drop south of section 6 to section 7 and read east to section 12, then west to section 18, thence east to section 24, thence west to section 30, thence east to section 36, ending in the southeast corner of each township, (Congressional.) It is the same thing over and over, with the addition of the townships and ranges marked by abbreviations from the base and meridian lines from which the survey proceeds. For example: The first square of 6 miles north and east of the Mt. Diablo base and meridian lines would be marked T. 1, N., R. 1, E. in the centre or top, according to the size of the scale of said base and meridian lines.

Grass Valley is in section 27 and Nevada City, California, is in section 12, T. 16, N. of R. 8, E. and section 7 R. 9, E. (the U. S. Range line passing between section 12 and section 7 of the two townships.) Hence, after estimating the discrepancy on the 2d standard north, and the excess on the 3d standard north, we have a little over 95 miles north of the base line and less than 48 miles east of the meridian.

T. signifies township, R. range, E. east, N. north, etc.

Owing to the constant recurrence, the government permits this abbreviation in the *field notes* of the deputy surveyor. Written memoranda of the nature of the lands, timber, minerals, mills, ditches, and "matters of interest and for general curiosity," the monuments, stakes, bearing trees, etc., and the maps (township plats constructed from the field notes) are thus numbered as they fall north and east, south and east, south and west, and north and west, progressively from any other meridian and base line, from which the survey proceeds. There are three principal meridians in the State of California. The Mt. Diablo base and meridian lines, first established in 1851; Mt. San Bernardino base and meridian lines, established in 1853; Humboldt base and meridian lines, established in 1856, and each ran at \$15.00 per mile. These lines proceed from the highest peaks or elevations of those mountains so as to be carried accurately for a long distance away.

The Mt. San Bernardino meridian is a distance of 46 townships—276 miles east, at right angles to the Mt. Diablo meridian and base lines—(due north and south and due east and west line.) The Humboldt base and meridian, at right angles to the Mt. Diablo line west, is 19 townships—114 miles. The Carson Guide meridian is 17 townships in *this* State, and 3 townships or ranges in the State of Nevada—120 miles, straight line, due east from Mt. Diablo, or a right angle thereto. It has, however, no base line; hence the surveys in the State of Nevada read from the Mt. Diablo base and meridian lines north to T. 20 and upwards, and ranges 44 east—264 miles east (vicinity of Austin, Lander county.) It must be remembered, however, that sur-

veyed lines are expected to be on the level, air line, as chainmen are sworn to level the chain, and where mountainous, to use "two pole" chains (2 rods) or half chains, which is nearly equivalent to carrying the line through the hills or mountains and across the cañons. From one-fourth to one-third may be usually added to such surveyed lines in estimating the usual distance traveled by roads or trails.

The excess or deficiency of each township is thrown up on the north and western tiers of sections in each township; hence those sections contain fractional lots varying according to the works of the different surveyors, and are numbered accordingly on the plats. Sections are marked by a stake at the corner of each, on which, and the bearing ("witness") trees the No. of Sec., T., R., etc., are inscribed with a scribe, and the field notes state the number of links, chains, kind of tree, and course from the stake. There are also four quarter stakes once in a half mile on the exterior lines of each section, except, perhaps, south of the standards, marked $\frac{1}{4}$ Sec., $\frac{1}{2}$ Sec., 320 acres. The quarter section is 160 acres, the quantity allowed for a pre-emption right, and the same quantity for a homestead, except inside of a railroad grant in California. There are four quarters, eight 80 or sixteen 40 acre lots in a section usually. The quarter quarter section, or 40 acre lots, are not marked in the field but is regarded by the law as a point "intermediate" between the $\frac{1}{2}$ mile or quarter section corners. (See Act of 24th of April, 1820, which Act refers to Act of Congress passed on the 11th of February, 1805, governing the surveys.)

The U. S. Deputy Surveyors, who contract to survey, give bonds, make oath, and are expected to do the work according to the "manual of instructions for U. S. Deputy Surveyors" issued by the U. S. Surveyor General at Washington. Their work is not a "railroad survey," as many assert. None are paid, or should be paid, except those laboring according to the *manual*. But we have been indignant at seeing some of the shameful work in Nevada, Yuba and Butte counties. U. S. Surveyors, however, are not required to pay any attention to county boundaries, or the municipal townships of the same, as such, as many imagine. They have one square system to work by.

Maps of the United States, exhibiting the counties in the Western States, show how symmetrical those counties are where the surveys preceded the settlement, when compared with those of the older States, or our own, though a new State.

The usual price per mile, to U. S. Deputy Surveyors, is \$15.00 for meridians and standard lines, \$12.00 for township and range lines, and \$10.00 (currency) for subdividing or sectionizing lines. The interior, "open," or half section lines are not run by the Government. A proposition is now before Congress for so doing to dispose of mineral lands by ten acre, or perhaps five acre lots, and we trust it will succeed.

These meridians are established thus often, or oftener, for practical convenience, and also to avoid further offsets or jogs for convergence, (curvature of the earth) which is found in practice on the standard lines, which are established once in five townships—30 miles—in surveying north of the Mt. Diablo base line and four townships in surveying south of the same. They are numbered 1st, 2d, 3d, etc., stands, north or south. The convergence depends on the latitude chiefly, like the rind of an orange. In going north from Mt. Diablo base line the townships are getting narrower as we approach the stand or correction lines. When surveying south they are getting wider. They should all be surveyed *north* of a base line, and none south from it. The work, also, should be done by salary, per diem, to avoid mistakes and slights by contractors, and for the immediate wants of the people, as the appropriations are annually exhausted.

The convergence (curved lines by following the needle) being several links to the mile and doubling up as we go east or west from the meridian, Sec. 6, or a part of it (where we inclose on), is found south of S. 36, on the standard line, if new lines are not often established. Again the numerous errors are corrected, or canceled, south of the standard in going north. These glaring errors are thought by persons who do not understand the rules of the department, or the laws governing the needle, to be the fault of the map maker. This is to disabuse them of so erroneous an opinion, and to assure them that it is an unenviable task so to do.

Maps exhibiting the land surveys, by sections, numbered with figures as they actually are, are far more valuable and reliable than mere sketch or general maps; and when thoroughly compiled, in the field, with judgment, from personal observation, are ready and cheap aids in planning vast enterprises and military campaigns, and to the private citizen in selecting his pre-emption right, his homestead right, assessing, paying taxes and laying out school and other districts intelligibly. We had no land survey to materially aid us in the establishment of our counties in 1850. They should now be re-organized. Sectional maps afford by the surveyed lines, a scale of miles, as in music, without a rule, and readily impart familiar knowledge to the child and adult, either of whom would be much more profited by their use in studying geography than by first studying those of foreign countries in our public schools. Some may argue that a knowledge of reading the land survey (attainable in an hour) may be deferred, to be learned when grown to man and womanhood; but we think better, or that it should be taught in the schools as well as marked out on the blackboard by example, etc. Also practical demonstrations by measurements of lands, lumber, wood, stone, plastering or ceilings, etc., to make the steady and useful citizen to himself or herself and the commonwealth. (The U. S. land survey is U.

S. law, we admit, but this is no more than a rule of action—the perfection of reason.) Oregon territory, August 14, 1848, received the 36th section, first of all, for schools. The government gave to California in 1853 the 16th and 36th sections in each township, or others in lieu thereof where they were preoccupied by Mexican or other private rights, and also provided for those townships covered by estuaries, etc.

Western and Southern men are most familiar with the land survey and will find their way in the deepest woods of the West by it. It has been in vogue now about 85 years and is still “Greek” to about seven-tenths of the people. Eastern people and foreigners (no matter how well educated) are usually ignorant of the system of reading the land survey.

When we reflect upon the newness of the State of our adoption; that within our remembrance, of less than twenty years, a woman, or a child, would cause the direct halt, front face and steady gaze of the sturdy miner as they passed each other on the streets of San Francisco; that now a list of public schools throughout the State shows great progress for the short time they have been organized; with a school fund of nearly a million dollars, and an income per annum of \$122,000, (the result of the rich boon donated by the government,) for the schooling of over a hundred and twelve thousand children between five and fifteen years of age entitled to receive school money—the amount per child being \$4.00—can it be questioned for a moment that a law by the State requiring the teaching, reading and bounding of the 16th and 36th sections of a township of land would be a superfluous act; for enlightening the mass of the rising generation to be able to read the sections, townships and ranges, and thus be able to choose for themselves from the government domain, (of which we yet have the size of France unsurveyed) their pre-emption rights, homestead rights, and mark out the lands described in their patent, signed by the President of the United States; the location of their school houses and the exterior boundaries of their districts, counties, townships, municipal or judicial? And that maps, diagrams and designs exhibiting the sections by figures in the sections or squares, and elucidating the same shall be purchased from the library fund, instead of being rejected on account of this informality, or because the law reads “books,” which are often made in foreign countries as well as outline maps—hence of little practical sense in referring to domestic affairs.

It is with exceeding pleasure we discover the business of school teaching rapidly rising to a high rank as a profession in California, and recall also with much pleasure our own early experience in “teaching the young idea how to shoot” in the “Hoosier State,” verily, believing none to be more honorable, or useful, or likely to be attended with happier results. Perhaps no wiser or more appropriate Act was ever passed by any legis-

lative body than the one donating the 16th section of land for school purposes up to 1848, when the 36th section was added, for the purpose, as we presume, of raising the virtue and intelligence of the people to a high standard—the basis upon which our glorious fabric of government rests. Thanks be to our ancestors of 1785, and their descendants, who by their wise and virtuous acts inaugurated a system, eighty-five years since, of surveying and donating lands, and especially by which the finest city for natural beauty in America, (Cleveland, Ohio,) had free schools.

WHAT IS THE MISSION OF EDUCATION?

BY E. J. SCHELLHOUS.

ONE of the greatest thinkers of the age (Herbert Spencer) says: "The essential question for us to consider is, 'How to Live?' Not how to live in the mere material sense only, but in the widest sense. The general problem which comprehends every special problem is—the right ruling of conduct in all directions, under all circumstances. In what way to treat the body; in what way to treat the mind; in what way to manage our affairs; in what way to bring up a family; in what way to behave as citizens; in what way to utilize all those sources of happiness which nature supplies—how to use all our faculties to the greatest advantage to ourselves and others; how to live completely. And this being the great thing needful for us to learn is, by consequence, the great thing which education has to teach. To prepare for complete living is the function which education has to discharge, and the only rational mode of judging of any educational course is, to judge in what degree it discharges such functions." This is a broad, deep and comprehensive view of the function and mission of education. It is not claimed by any, I believe, that education accomplishes all that is specified in the above quotation. To obtain a right view of education, we must understand the relation that man sustains to the laws of nature, his various needs and requirements, and the influences that affect and modify his conditions.

There is inherent in every human being the unfolded germ of all that is good and true. Great futurities are hidden in the mysterious depths of our inner being. Education is the unfolding of the innate powers, the growth and maturity,—to use the word in its radical sense,—the *educing*, or drawing forth, of what is within. This process of unfoldment must be carried on through the operation of natural law. As natural science is a description and systematic classification of the general principles and facts of natural phenomena, and as man holds a definite relation to natural law, it is evident that it must form the basis of

all education. Scientific knowledge, when properly understood, is capable of serving for guidance in the various circumstances of life, and has a definite bearing on human welfare. Physiology teaches that health is impaired and life shortened by disease, that the conditions of health and disease are under the control of fixed laws, and that we are capable of understanding and obeying them. It is often urged that to increase and diffuse knowledge on the subject of preserving health is useless, as people will not use that which they already have. But rarely does human action completely conform to the state of intelligence, and if it holds as an objection here, it must hold in every species of knowledge. Habits of living, when once established, are not easily broken up, but to induce right habits in the young is a matter of great consequence. Conduct adapts itself but slowly to ideal states, still such adaptation is constantly going on, and it is in this that human progress essentially consists. The lack of faith and low estimate of physiology and hygiene, arise more from lack of knowledge than anything else; therefore the proper course to pursue is to teach by authority of law the elementary principles of this species of knowledge. Speaking of the value of this kind of knowledge, Prof. Huxley says: "If the causes of health, when modified or perverted, become causes of disease, to whatever extent restorative medicines may be desirable, it is certain that the first dictate of wisdom is to rectify these wrongly acting causes. Medical treatment thus has its hygienic resources, and, with enlargement of rational experience, these resources are coming into greater and greater prominence. All who have watched the progress of the healing art in recent times will note that, among the most enlightened practitioners, there has been a steadily diminishing confidence in medication, and an increasing reliance upon the sanitary influence of nature. It is notorious that in proportion to people's ignorance of their own constitutions, and the true causes of disease, is their credulous confidence in pills, potions and quackish absurdities, and while this ignorance continues, there will of course be plenty of doctors who will pander to it. And not the least of the benefits which will follow the diffusion of physiological and sanitary information will be the protection of the community from the numberless impostures of charlatanism and a better dissemination of the qualifications of competent physicians." But it is not alone in bodily ailments that we suffer. Education has not taught us yet how to treat the mind. From Plato down to the expounders of metaphysical science of the present day, how much of mental science has gone into the curriculum of the common school? It is only in colleges and universities that mental science is pretended to be taught; and even then, it is merely abstract and speculative, and without special bearing on the practical duties of life. In fact it is considered more ornamental than useful. But there must be a science of mind to reveal the

laws of mental action and guide us aright in all the affectional and intellectual departments of our nature. The domestic, social and political evils generally prevailing, admonish us how much there is to be done in this department of education. It is with a view of calling the attention of the great body of teachers in this State, to this subject, that I offer this paper, hoping that more attention will be paid to the consideration of a proper school curriculum.

ABBREVIATIONS—A LITTLE CHAT CONCERNING THEIR SIGNIFICATION.

BY A. F. HILL.

ALMOST every one who can read knows that A.D. signifies: "In the year of our Lord;" but many do not know why—and there are numerous parallel cases. The reason why the letters A.D. have that signification is that they are the initials of the words "Anno Domini," the Latin for "In the year of our Lord." The Latin does not contain so many "ats," "ins," "ofs," etc., as our language. The word "annus" means a year, and its form is variously changed by what is termed the "declension," so as to signify "in a year," "of a year," and the like. Thus, "anni" would imply "of a year," while "anno" is "in a year." "Dominus," the Latin for "Lord" is of the same declension and subject to the same rules.

I have frequently heard persons ask why A.M. stands for forenoon, and P.M. for afternoon. This, too, is very simple when you know it once. It is noon when the sun is at the meridian, or highest point in the circle he apparently makes each day through the heavens; hence A.M. stands for forenoon, because they are the initials of the Latin words *Ante meridiem*, *ante*, before, and *meridiem*, meridian, or imaginary circle around the globe, passing through the poles and the zenith. I have now only to state that *post* is the Latin word for *after*, and it will be understood why P.M., initials of *post meridiem*, stands for afternoon.

A.M. has also other significations, but common sense will always admonish the reader how to distinguish. For example, it signifies "the year of the world," from the Latin, *Anno Mundi*. No one, for instance, on reading that a train would start at 7.30, A.M., would suppose that it meant 7.30 in the year of the world; nor would any one, on reading that Rome was built in A.M. 3,252, suppose it meant three thousand two hundred and fifty-two o'clock in the forenoon. A.M. also stands for Master of Arts, the Latin of which is *Artium Magister*. P.M. also has several significations, among which is Postmaster. The abbreviation, like the one I have just been speaking of, is never used except in such a way as to render it clear, whether it means Post-

master, Past-master, Past-midshipman or *Post Meridiem*. If you read a notice in the post-office, that no letters can be received after 10 P. M., by order of P. M., you would not be likely to read it—no letters will be received after 10 *postmaster*, by order of the *afternoon*; thus judgment will always guide you in that respect.

I have heard persons ask why M. D. stood for “doctor of medicine,” why was it not rather D. M., when the word doctor came first? The reason of this is, that M. D. is the abbreviation of *Medicinæ Doctor*, the Latin for “Doctor of Medicine.”

Many who do business and frequently use the expression, *per cent.*, as six *per cent.*, ten *per cent.*, twenty *per cent.*, etc., don't know the exact meaning, but have a vague notion that it has some reference to a cent, the one-hundredth part of a dollar. Here we have more Latin. *Per cent.* is simply an abbreviation of *per centum*, the Latin for “by the hundred.” *Per* is the Latin for “by;” and *centum*, for “hundred.”

Most persons in this country are aware that U. C. stands for Upper Canada; but many do not know that it also signifies the “year of Rome.” But why does U. C. signify the “year of Rome?” why not rather A. R.—the initials of *Anno Romæ*, which would be the Latin for the “year of Rome.” It is rather arbitrary, I confess. U. C. are initials of *Urbs Condita*, which is simply the Latin for “city established.” It might mean any other city as well as Rome; but this designation was probably adopted because Rome was at one time *the* city of the world.

Viz., namely, is an abbreviation of the Latin word, *videlicet*; but the reader may wonder how the *z* gets there, as there is no *z* in *videlicet*. This is arbitrary, too. How does the *z* get into *oz*, which represents *ounce*? the latter word has no *z* in it. The truth is, it is not, in these cases, used as a letter at all, but only to represent a character very similar to a *z* in shape, which was anciently used to show when words were abbreviated in the termination. Hence, *o* stands for *ounce*, with the character, represented by a *z*, added to it to signify that it is an abbreviation.

I do not intend to run over the whole list of abbreviations, as that would occupy considerable time. My object has been merely to mention a few, with some remarks, in order to excite interest in the subject, and consequently induce thought and research. I could mention many more that are not fully comprehended by all who read; as for instance, *i. e.*, *id est*, “that is;” *q. v.*, *quod vide*, “which see;” *vs.*, *versus*, against; *N. B.*, *nota bene*, “take notice;” (literally, “note well;”) *S. P. Q. R.*, (seen on the ancient Roman Standard,) *Senatus Populusque Romani*, “Senate and People of Rome;” *v. b. verbi gratia*, “for example;” *sc.*, *Scilicet*, “namely;” *M.*, *Mill*, “one thousand;” *I. H. S.*, *Jesus* * *Hominum*

* There is no “j” in the Greek alphabet, and the name Jesus, spelled in Greek, begins with the letter “Iota,” which answers to our “I”—hence the orthography, *Iesus*.

Salvator, "Jesus, the Saviour of men;" H. R. I. P., *Hic Requiescit In Pace*, "here rests in peace;" etc., *et cetera*, "and so fourth," etc., etc., etc.

The reader will find it a great source of pleasure to know all these little miscellaneous things, and to be able to impart occasional information to the inquiring; but will never, when questioned on any subject, experience a particle of self-satisfaction in replying: "*I don't know.*"

MISCELLANEA.

THE CHINESE NOTION OF ECLIPSES.—The Chinese generally have no rational idea of the cause of eclipses. The common explanation is that the sun or the moon has experienced some disaster. Some even affirm that the object eclipsed is being devoured by an immense ravenous monster. This is the most popular sentiment in Fuhchau in regard to the procuring cause of eclipses. All look upon the object eclipsed with wonder. Many are filled with apprehension and terror. Some of the common people as well as mandarins generally, enter upon some course of action, the express object of which is to save the luminary from its dire calamity, or to rescue it from the jaws of its greedy enemy. Mandarins must act officially, and in virtue of their being officers of Government. Neither they nor the people seem to regard the immense distance of the celestial object as at all interfering with the success of their efforts. The high Mandarins procure the aid of priests of the Tauist sect at their yamuns. These place an incense censer and two large candlesticks, for holding red candles or tapers, on a table in the principle reception room of the mandarin, or in the open space in front of it under the open heavens. At the commencement of the eclipse the tapers are lighted, and soon after, the mandarin enters, dressed in his official robes. Taking some sticks of lighted incense in both hands, he makes his obeisance before or facing the table, raising and depressing the incense two or three times, according to the established fashion, before it is placed in the censer. Or sometimes the incense is lighted and put in the censer by one of the priests employed. The officer proceeds to perform the high ceremony of kneeling down three times and knocking his head on the ground nine times. After this he arises from his knees. Large gongs and drums near by are beaten as loudly as possible. The priests begin to march slowly around the tables, reciting formulas, etc., which marching they keep up, with more or less intermissions until the eclipse has passed off. A uniform result always follows these official efforts to save the sun and moon. They are invariably successful! There is not a single instance recorded in the annals of the Empire when the measures prescribed

in instructions from the Emperor's astronomers at Peking, and correctly carried out in the provinces by the mandarins, have not resulted in a complete rescue of the object eclipsed. Doubtless the vast majority of the common people in China believe that the burning of tapers and incense, the prostration of the mandarins, the beating of the gongs and drums, and the recitations on the part of the priests, are signally efficacious in driving away the voracious monster. They observe that the sun or the moon does not seem to be permanently injured by the attacks of its celestial enemy, although a half or nearly the whole appeared to have been swallowed up. This happy result is doubtless viewed with much complacency by the parties engaged to bring it about.—*From Social Life of the Chinese, by Rev. Justus Doolittle.*

HALF-TIME SCHOOLS have recently been established by the school committees of several manufacturing towns in Massachusetts. This plan, it is asserted, advances the pupils more rapidly and thoroughly than the common all-day schools. In the mills it has been ascertained that such pupils do better work, and earn more money than they would by being in the factory all day. The children and their parents were at first afraid of the scheme, but as a proof of the popularity of the plan, it is asserted that the average daily attendance in the half-time schools is 97 per cent.—so high an average being unknown in the all-day schools.

WILLIAM SHAKESPEARE was not the only Shakespeare, at least of King Charles' time. There was a "John Shackspeare," who was bitmaker to the King. After his death, a warrant was issued, in 1637, to pay his widow ("in regard of her present necessities") £1,612.11s., "for wares by him" (John Shackspeare) "delivered for his Majesty's service in the stables." The warrant is calendered in Mr. Bruce's last volume of *Domestic Papers of the Reign of Charles I.*

PROFESSOR LYELL says that 1,500,000 cubic feet of water pass over Niagara Falls every minute. Dr. Dwight, former President of Yale College, says 100,200,000 tons pass over the Falls every hour. A distinguished engineer has computed the power of Niagara Falls to be sufficient to perform all the manual labor of the Empire State.

A MANUSCRIPT has been found at Bury St. Edmonds, which it is said contains an interesting account, addressed by Newton himself to Folkes, of the discovery of the power of gravitation. Nothing is here said about the fall of an apple having anything to do with it; in fact, the account differs in many respects from the ordinary tradition, and as coming from Newton's lips is worthy of belief as the true account. This volume, with other MS. treasures, is now in the possession of William Rayabird.

Public School Buildings erected since 1866-'67.

Name of Building.	Location.	Material used.	Date of Contract.	Architect.	Grade of School.	Capacity.			Contract price of Building.	Cost, per Class-room.	Cost, per seat.
						No. C asses.	Number of Seats.*				
						Gr.	Pr.				
Spring Valley	Broadway, bet. Polk and Larkin	Wood	1865 Sept. 30	S. C. Bugbee	Grammar	4	240	.....	\$7,800 00	\$1,950 00	32 50
Market Street Primary	Corner of Fifth and Market....	Wood	1866 May 29.	S. C. Bugbee	Primary	12	.....	720	5,744 00	470 66	7 97
Tehama	Tehama, bet. First and Second..	Brick	June 30	S. C. Bugbee	Primary	17	.....	1020	25,850 00	1,520 58	25 33
Synagogue	Broadway, bet. Powell and Mason	Brick	Aug. 31.	Wm. Patton	Primary	12	.....	720	12,910 00	1,075 83	17 93
Spring Valley Addition	Broadway, bet. Polk and Larkin	Wood	Oct. 15.	S. C. Bugbee & Son.	Primary	4	.....	240	4,975 00	1,243 75	20 71
Filbert Street	Filbert, bet. Jones and Taylor..	Wood	Oct. 26.	Wm. Patton	Primary	11	.....	660	16,000 00	1,500 00	25 00
Union Alteration	Union, bet. Kearny and Dupont.	Brick	Dec. 3. .	Wm. Craine.....	Grammar	2	120	.....	1,811 00	905 50	15 08
Post Street (Cohn Building). Center Building	Post, bet. Dupont and Stockton Shotwell, between 22nd and 23d	Brick	1867 Jan. 10.	Wm. Patton.....	Gram. and Prim.	15	360	540	13,227 00	881 80	14 70
Eighth Street Building	Eighth, bet. Harrison and Bryant	Wood	Mar. 26.	S. C. Bugbee & Son.	Gram. and Prim.	8	240	240	8,000 00	1,000 00	16 66
Pine and Larkin Streets	SW corner of Pine and Larkin..	Wood	April 8.	S. C. Bugbee & Son.	Primary	8	.....	480	8,000 00	1,000 00	16 66
Filbert and Kearny	NW cor. of Filbert and Kearny..	Wood	April 9.	S. C. Bugbee & Son.	Primary	8	.....	480	8,000 00	1,000 00	16 66
State Normal School Addit'n West End	Market, bet. Fourth and Fifth..	Wood	April 25	S. C. Bugbee & Son.	Primary	8	.....	480	8,000 00	1,000 00	16 66
Tyler Street .....	.....	Wood	Mar. 14.	S. C. Bugbee & Son.	Primary	4	.....	240	2,700 00	675 00	11 25
	.....	Wood	July 22.	S. C. Bugbee & Son.	Primary	1	.....	75	1,585 00	.....	21 13
	.....	Wood	July 24.	S. C. Bugbee & Son	Primary	4	.....	240	4,370 00	1,092 00	18 30
South San Francisco	Cor. L. st. and 14th av. S San Fran	Wood	1869 June 26	Wm. Craine.....	Gram. and Prim.	8	.....	444	12,470 00	1,558 75	.....
Girls' High School.	SE corner Bush and Stockton...	Wood	July 27.	Wm. Craine.....	High and Train'g	12	.....	480	26,390 00	2,199 17	.....

* Full capacity, without reference to the present number of pupils.

Total number of classrooms provided in new buildings, 138; total number of seats, 8,019; at a total cost of \$167,832, exclusive of valuation of Post street and Synagogue Buildings, which were obtained by the Board of Education in exchange for a part of the School lot, corner of Fourth and Harrison streets.

DEPARTMENT OF PUBLIC INSTRUCTION.

SEMI-ANNUAL APPORTIONMENT OF SCHOOL FUND.

OFFICE OF CONTROLLER OF STATE,
SACRAMENTO, California, Feb. 1st, 1870. }

To the Superintendent of Public Instruction of the State of California:

SIR: In accordance with the provisions of an Act to provide for a system of Common Schools, approved March twenty-first, eighteen hundred and sixty-eight, I hereby report as follows:

The securities belonging to the Common School Fund consist of bonds of the State of California, bearing interest at seven per cent. per annum, held by the State Treasurer in trust for the School Fund, and amount to nine hundred and seventy-two thousand five hundred (\$972,500 00) dollars.

The sum of twelve thousand (\$12,000 00) dollars, of this amount, was invested in bonds on the fourth of January, 1870, and did not, as a matter of course, carry interest due on the first of January, 1870.

The amount of money in the School Fund this day, subject to apportionment, is two hundred and thirty eight thousand six hundred and twenty dollars and forty-two cents (\$238,620 42).

The statement showing the balance subject to apportionment is as follows:

Interest on bonds (\$960,500 00) held in trust.....	\$ 33,617 50
One-half of amount received per poll taxes since August, 1860..	25,077 62
Interest on State School Lands.....	40,449 92
Property tax (eight cents on each one hundred dollars).....	143,566 28

Total.....\$ 242,711 32

From which deduct as follows:

Certificates of Register of State Land Office, of lands. proved not to be the property of the State, re- ceived from County Treasurer.....	\$ 396 40
Paid California Teacher.....	3,694 50
	4,090 90

Amount subject to apportionment.....\$ 238,620 42

Very respectfully, your obedient servant,

ROBERT WATT, Controller.

APPORTIONMENT.

Total number of school census children, between five and fifteen years of age, entitled to receive money, 112,743. Amount per child, \$2 11.

ALAMEDA COUNTY.—Alameda, 122; Alvarado, 98; Alviso, 39; Bay, 40; Brooklyn, 457; Centreville, 107; Cosmopolitan, 41; Eden Vale, 39; Encinal, 102; Eureka, 82; Laurel, 240; Lincoln, 35; Livermore, 113; Lockwood, 46; May, 44; Mission San José, 56; Mission Peak, —; Mowry's Landing, 44; Murray, 155; Oakland, 1,328; Ocean View, 102; Palmyras, 42; Peralta, 109; Pleasanton, 71; Redwood, 24; San Lorenzo, 90; Summit, 59; Suñol, 69; Temescal, 131; Townsend, 71; Union, 293; Vallecito, 49; Washington, 77; Warm Springs, 74. Total, 4,440; amount, \$9,368 40.

ALPINE.—Everett, 27; Franklin, 11; Lincoln, 26; Webster, 22. Total, 86; amount, \$181 46.

AMADOR.—Amador City, 80; Aqueduct City, 32; Buckeye Valley, 79; Buena Vista, 70; Clinton, 35; Copper Hill, 22; Drytown, 76; Fiddletown, 88; Franklin, 19; Forest Home, 29; Ione Valley, 90; Jackson, 193; Jackson Valley, 38; Lancha Plana, 80; Mountain Echo, 33; Mountain Springs, 18; Milligan's, 45; Muletown, 51; New York Ranch, 40; Oneida, 78; Puckerville, 61; Pine Grove, 54; Sutter Creek, 253; Stony Creek, 18; Union, 85; Union Church, 28; Upper Rancharia, 38; Vanwinckle, 7; Volcano, 40; Williams', 37; Willow Springs, 30; Washington, 85. Total, 1,872; amount, \$3,949 92.

BUTTE.—Bangor, 29; Butte Valley, 84; Bidwell, 38; Cañon Creek, 35; Central House, 27; Cherokee, 107; Chico, 334; Clipper Mills, 24; Dayton, 76; Delaplain, 67; Eureka, 42; Evansville, 39; Forbestown, 54; Hamilton, 43; Kimschew, 77; Live Oak, 42; Lone Tree, 29; Manzanita, 24; Meridian, 37; Messilla Valley, 41; Morris' Ravine, 22; Mountain Spring, 48; Mud Creek, 43; Oroville, 284; Oregon City, 37; Pine Creek, 60; Rio Seco, 67; Rock Creek, 42; Salem, 27; Sandy Gulch, 29; Stoneman, 10; Union, 16; Upham, 9; West Liberty, 25; Wyandott, 78; Wyman's Ravine, 43. Total, 2,099; amount \$4,428 89.

CALAVERAS.—Angels, 198; Altaville, 89; Brushville, 89; Black Hills, 26; Camanche, 89; Campo Seco, 88; Cave City, 53; Chili Gulch, 80; Copperopolis, 156; Douglas Flat, 42; Eureka, 45; Fourth Crossing, 72; Mokelumne Hill, 192; Mosquito Gulch, —; Murphy's, 181; Negro Gulch, 51; Petersburg, 74; Pleasant Springs, —; San Andreas, 161; Salt Spring Valley, 25; Sheep Ranch, 28; Telegraph City, 65; Upper Calaveritas, 60; Union, 38; Vallecito, 76; West Point, 81; Washington Ranch, 53; Spring Valley, 57. Total, 2,159; amount, \$4,555 49.

COLUSA.—Butte Creek, 18; Bridgeport, 33; Colusa, 201; Dry Slough, 60; Franklin, 102; Fresh Water, 49; Grand Island, 63; Grindstone, 53; Indian Valley, 87; Jackson, 23; Marion, 39; Princeton, 38; Plaza, 48; Stony Creek, 58; Union, 35; Washington, 32. Total, 939; amount, \$1,981 29.

CONTRA COSTA.—Alamo, 45; Amador, 27; Antioch, 128; Bay Point, 44; Carbondale, 94; Central, 64; Danville, 30; Excelsior, 73; Eden Plain, 61; Green Valley, 43; Iron House, 35; Lafayette, 42; Liberty, 79; Lime Quarry, 64; Lone Tree, 50; Martinez, 184; Moraga, 42; Morgan Territory, 36; Mount Diablo, 92; Mount Pleasant, 92; Oak Grove, 67; Pinole, 81; Pleasant Hill, 36; Pacheco, 210; Rodeo Valley, 84; San Ramon, 38; San Pablo, 193; Somersville, 149; Tessajara, 35; Wilson Springs, 44; Sycamore, 35. Total, 2,297. amount, \$4,846 67.

DEL NORTE.—Crescent, 149; Rowdy Creek, 25; Bradford, 33; Happy Camp, 22; Ocean, 14. Total, 246; amount, \$519 06.

EL DORADO.—Buckeye Flat, 76; Bear Creek, 21; Blair's, 61; Carson Creek, 28; Cold Spring, 44; Coloma, 123; Coon Hollow, 71; Diamond Springs, 99; El Dorado, 153; French Creek, 49; Garden Valley, 33; Georgetown, 144; Greenwood, 43; Green Valley, 30; Gold Hill, 53; Indian Diggings, 41; Jay Hawk, 64; Kelsey, 55; Latrobe, 81; Missouri Flat, 23; Mountain, 31; Mount Aukum, 48; Mosquito, 14; Natoma (part of), 11; Negro Hill, 17; Newtown,

28; Oak Hill, 69; Pilot Hill, 33; Placerville, 401; Pleasant Valley, 44; Reservoir, 76; Salmon Falls, 44; Smith's Flat, 43; Spanish Dry Diggings, 36 Tennessee, 48; United, 44; Uniontown, 57; Wild Goose, 12. Total, 2,348; amount, \$4,954 28.

FRESNO.—Alabama, 29; Chowchilla, 63; Dry Creek, 56; Fancher, 98; Fresno, 47; Hazleton, 104; Kingston, 57; Lake, 43; Millerton, 98; Mississippi, 24; New Idria, 79; Scottsburg, 70. Total, 768; amount, \$1,620 48.

HUMBOLDT.—Union, 238; Eureka, 330; Bucksport, 96; Table Bluff, 85; Slide, 45; Eel River, 71; Hydenville, 116; Van Dusen, 37; Grizzly Bluff, 71; Island, 55; Ferndale, 62; Centreville, 16; Bear River, 28; Mattole, 102; Yager Creek, 27; Knealan's Prairie, 16. Total, 1,395; amount, \$2,943 45.

INYO.—Independence, 16; Milton, 18; Union, 44. Total, 78; amount, \$164 58.

KERN.—Havilah, 75; Kern Island, 76; Linn's Valley, 89; Tiachipe, 64. Total, 304; amount, \$641 44.

KLAMATH.—Klamath, 56; Trinidad, 99; Orleans, 55. Total, 210; amount, \$443 10.

LAKE.—Cinnabar, 26; Morgan Valley, 25; Lower Lake, 89; Burns' Valley, 28; Excelsior, 49; Loconomi, 76; Rincon, 61; Uncle Sam, 36; Kelsey Creek, 41; Big Valley, 63; Lakeport, 70; Pleasant Grove, 72; Blue Lake, 24; Upper Lake, 100. Total, 760; amount, \$1,603 60.

LASSEN.—Susanville, 143; Richmond, 31; Susan River, 37; Janesville, 40; Lake, 39; Soldier Bridge, 10; Milford, 47. Total, 347; amount, \$732 17.

LOS ANGELES.—Alameda, 103; Anaheim, 222; Azuza, 123; Ballona, 129; Bog Dale, 68; Cienega, 132; El Monte, 69; Green Meadows, 241; La Puente, 110; Los Angeles, 1,477; Los Nietos, 152; Maizeland, 108; New River, 49; Old Mission, 191; Santa Ana, 275; San Antonio, 65; San Fernando, 63; San Gabriel, 225; San José, 136; San Juan, 152; Silver, 55; Solidad, 98; Spring, 29; Wilmington, 152. Total, 4,424; amount, \$9,334 64.

MARIPOSA.—Mariposa, 142; Hornitos, 159; Coulterville, 107; Bear Valley, 85; Quartzburg, 62; Princeton, 21; Sherlock's, 40; Sebastopol, 33; Cathay's Valley, 94; Hunter's Valley, 56. Total, 799; amount, \$1,685 89.

MARIN.—San Rafael, 132; San Quentin, 32; San Antonio, 62; Chileno Valley, 33; American Valley, 16; Saucelito, 83; Aurora, 64; Olima, 29; Bolinas, 27; Halleck, 35; Dixie, 165; Novatto, 51; Franklin, 32; Tomales, 57; Ross' Landing, 57; Nicasio, 60; Clark, 26; Garcia, 75; Bay District, 49; Estero, 25. Total, 1,110; amount, \$2,342 10.

MERCED.—Jefferson, 388; Jackson, 98; Merced Falls, 80; Mariposa, 52; Pioneer, 56; Dry Creek, 16; McSwain, —; Bear Creek, —; Lone Tree, —. Total, 690; amount, \$1,455 90.

MONO.—North Antelope, 12; Antelope, 21; Bridgeport, 30; Bishop Creek, 63; Round Valley, —. Total, 126; amount, \$265 86.

MENDOCINO.—Anderson, 54; Albion, 20; Big River, 72; Buchanan, 108; Counts, 64; Coyote, 31; Central, 48; Calpella, 33; Cuffe's Cove, 38; Casper, 42; Eel River, 62; Fish Rock, 21; Gualala, 26; Gaskill, 37; Indian Creek, 29; Little River, 20; Little Lake, 66; Upper Little Lake, 66; Long Valley, 100;

Mill Creek, 42; Manchester, 71; Navarro, 23; Oriental, 48; Potter Valley, 61; Round Valley, 98; Rancheria, 46; Red Wood, 51; Sanel, 87; Sherwood, 39; Union, 58; Ukiah, 237; Walker Valley, 16. Total, 1,814; amount, \$3,827 54.

MONTEREY.—Alisal, 77; Carneros, 46; Carmello, 76; Carrolton, 87; Castroville, 143; Lindley, 67; Mountain, 57; Monterey, 417; Natividad, 140; San Felipe, 67; San Antonio, 97; San Juan, 272; Spring, 124; Springfield, 53; Tembledero, 90; San Benito, 132; Santa Rita, 112; Salinas City, 145; Hollister, 62. Total, 2,264; amount, \$4,777 04.

NAPA.—Berryessa, 53; Buchanan, 72; Capell, 37; Carneros, 31; Cherry Valley, 28; Chiles, 62; Chiles Valley, 19; Calistoga, 98; Franklin, 12; Howard, 48; Jefferson, 33; Liberty, 38; Mountain, 33; Napa City, 445; Oak Grove, 41; Oakville, 40; Putah, 35; Pope Valley, 32; Redwood, 53; Salvador, 37; Soda Cañon, 35; Suscol, 58; St. Helena, 224; Tucker, 39; Upper Cope, 41; Wooden Valley, 33; Yount, 48. Total, 1,727; amount, \$3,643 97.

NEVADA.—Altamont, 15; Allison Ranch, 143; Birchville, 56; Blue Tent, 26; Bear River, 30; Chalk Bluff, 60; Clear Creek, 52; Cherokee, 54; Columbia Hill, 58; Forest Springs, 168; French Corral, 86; Grass Valley, 976; Graniteville, 50; Indian Springs, 40; Kentucky Flat, 46; Little York, 37; Lime Kiln, 39; Liberty Hill, 23; Lake City, 28; Moore's Flat, 85; Moony Flat, 38; Nevada, 641; North San Juan, 157; North Bloomfield, 48; North Star, 97; Oakland, 115; Omega, 39; Pleasant Valley, 49; Quaker Hill, 32; Rough and Ready, 81; Relief Hill, 22; Spenceville, 35; Sweetland, 84; Selby, 41; Truckee, 257; Union Hill, 104; Washington, 57; Willow Valley, 26. Total, 3,995; amount, \$8,429 45.

PLACER.—Auburn, 133; Bath, 50; Blue Cañon, 31; Cisco, 30; Coon Creek, 45; Christian Valley, 18; Dry Creek, 22; Deadwood, 11; Dutch Flat, 177; Damascus, 18; Excelsior, 23; Franklin, 32; Forest Hill, 167; Fairview, 14; Gold Hill, 27; Gold Run, 114; Iowa Hill, 75; Illinois town, 163; Last Chance, 23; Lisbon, 24; Lincoln, 69; Lone Star, 16; Michigan Bluff, 79; Mt. Pleasant, 38; Neilsburg, 29; Newcastle, 39; Norwich, 39; Ophir, 65; Pleasant Grove, 11; Rattlesnake, 66; Rock Creek, 39; Rocklin, 100; Roseville, 44; Smithville, 25; Stewart's Flat, 35; Todd's Valley, 65; Union, 12; Wisconsin Hill, 44; Washington, 28; Yankee Jim's, 69. Total, 2,109; amount, \$4,449 99.

PLUMAS.—Antelope, 10; Beckworth, 34; Crescent, 30; Genesee, 10; Greenville, 54; La Porte, 89; Mohawk, 31; Pioneer, 36; Pilot Peak, 25; Plumas, 11; Quincy, 52; Rocky Point, 10; Spanish Peak, 34; Summit, 30; Seneca, 51; Taylor, 77; Union, 14. Total, 598; amount, \$1,261 78.

SACRAMENTO.—Alabama, 65; American, 36; American River, 69; Ashland, 44; Brighton, 32; Buckeye, 34; Carson Creek, 36; [Centre, 21; Davis, 19; Dry Creek, 36; Eagle Point, 10; Elk Grove, 44; Elder Creek, 42; Enterprise, 58; Excelsior, 38; Franklin, 63; Georgiana, 32; Granite, 190; Grant, 32; Hicksville, 54; Jackson, 43; Katesville, 20; Kinney, 73; Laguna, 20; Lincoln, 45; Michigan Bar, 90; Mokelumne, 24; Natoma, 37; Oak Grove, 27; Onisbo, 37; Pacific, 37; Pleasant Grove, 88; Point Pleasant, 29; Prairie, 25; Richland, 29; San Joaquin, 49; Stone House, 52; Sutter, 80; Sylvan, 75; Union, 61; Viola, 48; Washington, 63; Walnut Grove, 13; West Union, 49; White Rock, 30; Wilson, 28; Sacramento, 2,909. Total, 5,036; amount, \$10,625 96.

SAN BERNARDINO.—American, 76; City, 246; Chino, 85; Central, 52; Juape, 60; Mill, 22; Mission, 104; Mount Vernon, 114; Riley, 76; Santa Ana, 67; San Salvador, 173; San Timoteo, 67; Temescal, 62; Warm Springs, 149; Total, 1,353; amount, \$2,854 83.

SAN DIEGO.—San Diego, 491; Milquate, 53; New San Diego, 82; San Jacinto, 74. Total, 700; amount, \$1,477 00.

SAN FRANCISCO.—Total, 25,785; amount, \$54,406 35.

SAN JOAQUIN.—August, 46; Athearn, 28; Alpine, 42; Burwood, 33; Brunswick, 41; Calaveras, 23; Corral Hollow, 61; Castle, 51; Chartville, 29; Charity Dale, 22; Columbia, 43; Davis, 37; Douglass, 64; Dry Creek, 60; Delphi, 59; Elkhorn, 29; Everett, 44; Enterprise, 30; French Camp, 54; Franklin, 27; Fairview, 29; Greenwood, 40; Grant, 38; Henderson, 39; Harmony Grove, 32; Houston, 61; Linden, 107; Liberty, 88; Live Oak, 28; Lincoln, 31; Lone Tree, 23; Lafayette, 34; Lockeford, 77; Moore, 40; Madison, 42; Mokelumne, 47; Mount Carmel, 39; McKamy, 64; New Jerusalem, 51; North, 125; Pacific, 62; Pittsburg, 55; Rustic, 30; River, 25; South, 122; Stockton, 1,312; Salem, 23; Shady Grove, 27; San Joaquin, 34; Telegraph, 54; Tulare, 49; Turner, 39; Union, 41; Vineyard, 166; Van Allen, 47; Woods, 67; Wheatland, 22; Washington, 35; Weber, 57; Willow, 68; Zinc House, 57. Total, 4,304; amount, \$9,081 44.

SAN LUIS OBISPO.—Arroyo Grande, 96; Santa Fé, 118; Mission, 350; Excelsior, 57; Central, 60; Cayucas, 48; Franklin, 32; Olmsted, 25; Mammoth Rock, 41; Santa Rosa, 33; Hesperian, 57; San Simeon, 83; Nacimiento, 49; Salinas, 55; San José, 41. Total, 1,145; amount, \$2,415 95.

SAN MATEO.—San Bruno, 103; San Mateo, 105; Belmont, 51; Redwood City, 322; Searsville, 90; Greensburg, 66; Laguna, 85; Half Moon Bay, 222; Purissima, 48; West Union, 42; Jefferson, 65; Milbrae, 51; Tunis, 51; San Gregorio, 50; Pescadero, 97; Bell, 103. Total, 1,551; amount, \$3,272 61.

SANTA CLARA.—Adams, 61; Alviso, 130; Berryessa, 75; Braly, 62; Burnett, 49; Calaveras, 29; Cambrian, 55; Carneadera, 76; Encinal, 55; Evergreen, 76; Franklin, 62; Gilroy, 272; Guadalupe, 64; Hamilton, 50; Hester, 131; Highland, 28; Hill, 280; Jackson, 67; Jefferson, 60; Laguna, 29; Lexington, 43; Lincoln, 47; Los Gatos, 69; Live Oak, 45; Mayfield, 201; Millikin, 55; Milpitas, 55; Mision Peak, 4; Moreland, 76; Mountain View, 151; Mount Pleasant, 37; New Almaden, 178; Oak Grove, 81; Orchard Street, 88; Pala, 39; Pioneer, 105; Redwood, 85; Rhodes, 50; San Antonio, 48; Santa Clara, 497; San Felipe, 27; San José, 1,549; San Ysidro, 114; Sierra, 32; Silver Creek, 67; Summit, 23; Union, 65; Willow Glen, 81; Collins, 25. Total, 5,648; amount, \$11,917 28.

SANTA CRUZ.—Santa Cruz, 751; Pajaro, 471; San Andreas, 28; Mountain, 46; Oak Grove, 132; Petroleum, 17; Happy Valley, 35; Hazel Brook, 19; El Jarro, 37; Railroad, 43; Scott's Valley, 41; San Lorenzo, 59; Bay View, 81; Green Valley, 74; Carlton, 75; Soquel, 209; Union, 74; Grant, —; Aptos, 51; Roache, 116; Boulder Creek, 18; Summit, 26. Total, 2,403; amount, \$5,070 33.

SHASTA.—Shasta, 168; Roaring River, 17; Millville, 87; Clear Creek, 46; Eagle Creek, 31; Pitt River, 56; Fall River, 52; Burney Valley, 14; Cañon House, 23; French Gulch, 71; Little Cow Creek, 41; Whiskeytown, 30; Cotton-

wood, 18; Texas Springs, 17; Stillwater, 28; Middletown, 16; Piety Hill, 49; Buckeye, 15; American Ranch, 17; Parkville, 34; Oak Run, 14; Clover Creek, 43; Oak Knoll, 27; Sierra, 72. Total, 987; amount, \$2,082 57.

SANTA BARBARA.—Santa Barbara, 848; Rafaela, 118; Pleasant Valley, 58; Montecito, 108; Carpenteria, 149; Pedregose, —; San Buenaventura, 330; Santa Paula, 79. Total, 1,690; amount, \$3,565 90.

SIERRA.—Downieville, 202; Goodyear's, 62; Forest City, 37; Alleghany, 73; Table Rock, 191; Gibsonville, 57; St. Louis, 31; Union, 68; Eureka, 34; Morristown, 14; Sierraville, 53; Loyalton, 42; Plum Valley, 33; Mount Pleasant, 22; Alpine, 17; Antelope, 12; Washington, 27; Alta, 31; Butte, 19; Rocky Point, 18; Minnesota, 24. Total, 1,067; amount, \$2,251 37.

SISKIYOU.—Ash Creek, 50; Big Valley, 25; Butteville, 50; Cedar Park, 14; Centre, 54; Cottonwood, 46; Deep Creek, 40; Douglas, 24; Eagleville, 22; East Fork, 20; Franklin, 30; Gordon Valley, 25; Goose Lake Valley, 24; Hawkinsville, 24; Humbug, 32; Lincoln, 42; Little Shasta, 50; Mill Creek, 60; Mount Bidwell, 14; Mount Shasta, 22; Oro Fino, 46; Quartz Valley, 24; Scott River, 60; Scott Valley, 94; Shasta Valley, 24; South Fork, 32; Surprise Valley, 20; Table Rock, 30; Union, 20; Vineland, 30; Washington, 46; Willow Creek, 60; Yreka, 286. Total, 1,440; amount, \$3,038 40.

SOLANO.—Alamo, 41; American Cañon, 42; Benicia, 340; Binghampton, 56; Bunker Hill, 58; Crystal, 127; Centre, 66; Dover, 44; Denverton, 21; Dickson, 27; Esmaralda, 44; Egbert, 72; Fairfield, 107; Grant, 67; Green Valley, 72; Gomer, 28; King, 41; Mountain, 16; Maine Prairie, 75; Montezuma, 68; Oak Dale, 33; Owens', 39; Pitt's, 69; Pleasant Valley, 16; Putah, 18; Pleasant Hill, 12; Rio Vista, 79; Rockville, 68; Suisun, 74; Solano, 44; Silveyville, 185; Salem, 32; Fremont, 65; Ulatis, 154; Union, 54; Vallejo, 864; Wolfskill, 15. Total, 3,233; amount, \$6,821 63.

SONOMA.—American Valley, 35; Alexander, 23; Alpine, 22; Big Valley, 16; Burnside, 36; Bloomfield, 96; Bodega, 63; Burns, 51; Canfield, 26; Cinabar, 40; Court House, 463; Cloverdale, 86; Copeland, 29; Coleman Valley, 31; Dry Creek, 79; Dunbar, 95; Dunham, 60; Enterprise, 31; East Petaluma, 77; Eureka, 38; Eagle, 27; Fisk's Mill, 23; Guallala, 30; Geyserville, 51; Green Valley, 36; Guillicos, 15; Guilford, 46; Hearn, 30; Hall, 49; Hill, 46; Healdsburg, 318; Hamilton, 87; Harvey, 39; Iowa, 61; Independence, 39; Knight's Valley, 32; Laguna, 62; Liberty, 39; Lafayette, 54; Lake, 35; Lewis, 35; Lakeville, 38; Lone Redwood, 42; Miriam, 155; Mill Creek, 50; Manzanita, 43; Mark West, 52; Mountain, 28; Mount Vernon, 24; Maacama, 25; Monroe, 38; Oriental, 40; Occidental, 60; Oak Grove, 92; Payran, 53; Petaluma, 689; Pacific, 37; Piner, 55; Pleasant Hill, 48; Potter, 101; Redwood, 74; Russian Kiver, 36; Rincon, 48; Strawberry, 45; Santa Rosa, 33; Scotta, 54; Stony Point, 39; Salt Point, —; Stewart's Point, 23; Steuben, 36; Sonoma, 235; Sotoyome, 58; San Antonio, 39; Star, 30; Tarwater, 31; Todds, 35; Washington, 37; Windsor, 90; Walker, 33; Waugh, 34; Watmaugh, 27; Wallace, 40; Wilson, 29; Wrights, 34. Total, 5,361; amount, \$11,311 71.

STANISLAUS.—Adamsville, 129; Bachelor Valley, 48; Belpassi, 27; Branch, 81; Bonita, 47; Buena Vista, 53; Dry Creek, 30; Emery, 83; Empire, 29; Farm Cottage, 38; Garner, 38; Grant 39; Haight, 37; Jackson, 57; Jones, 48;

Junction, 89; McHenry, 46; Orestimba, 44; Paradise, 67; Rowe, 23; Tuolumne, 38; Washington, 74; White Oak, 36; White Crow, 28; Davis, 75. Total, 1,305; amount, \$2,753 55.

SUTTER.—Auburn, 81; Barry, 36; Bear River, 32; Brown's 44; Buttesylvania, 18; Brittan, 67; Central, 30; Columbia, 18; Fairview, 17; Franklin, 26; Gaither, 48; Grant, 64; Illinois, 44; Jefferson, 29; Knight's, 23; Lee, 31; Lincoln, 38; Live Oak, 55; Marcum, 24; Meridian, 22; Nicolaus, 27; North Butte, 28; Rome, 34; Salem, 18; Slough, 26; Sutter, 27; Union, 49; Vernon, 32; Washington, 40; West Butte, 46; Winship, 36; Yuba, 56. Total, 1,166; amount, \$2,460 26.

TEHAMA.—Red Bluff, 264; Coast Range, 45; Stony Creek, 31; Lassen, 39; Paskenta, 40; Cottonwood, 46; Red Bank, 12; Antelope, 66; Sierra, 62; Oat Creek, 27; Tehama, 83; Toomes, 33; Reed's Creek, 20. Total, 768; amount, \$1,620 48.

TRINITY.—Weaverville, 155; North Fork, 35; Lewiston, 43; Bates, 12; Douglas, City, 68; Trinity Centre, 30; Hay Fork, 37; Oregon Gulch, 49; Cox's Bar, 19. Total, 448; amount, \$945 28.

TULARE.—Cottonwood, 83; Deep Creek, 65; Elbow, 24; Elbow Creek, 44; Fitzgerald, 41; Farmersville, 79; Kaweah, 88; King's River, 40; Outside Creek, 41; Oak Grove, 84; Packwood, 42; Rock Ford, 59; Tule River, 108; Union, 40; Visalia, 246; Venice, 28; Vandalia, 76; Willow, 39. Total, 1,227; amount, \$2,588 97.

TUOLUMNE.—Sonora, 411; Columbia, 370; Shaw's Flat, 87; Springfield, 102; Tuttle town, 95; Jamestown, 141; Poverty Hill, 79; Curtis Creek, 86; Summerville, 50; Confidence, 36; Montezuma, 55; Chinese Camp, 74; Don Pedro's Bar, 37; Green Springs, 66; Big Oak Flat, 150. Total, 1,839; amount, \$3,880 29.

YOLO.—Woodland, 350; Buchanan, 51; Washington, 96; Cottonwood, 57; Prairie, 52; Cache Creek, 35; Grafton, 145; Franklin, 39; Putah, 42; Buckeye, 48; Cacheville, 60; Grand Island, 9; Merritt, 56; Fillmore, 53; Plainfield, 87; Willow Slough, 35; Monument, 20; Pine Grove, 47; Cañon, 53; Union, 54; Woodland Prairie, 14; Richland, 5; Sacramento River, 31; Monitor, 61; Eureka, 43; Gordon, 70; Capay, 49; Fairfield, 34; Enterprise, 26; Liberty, 29; Vernon, 21; Pleasant Prairie, 58; Fairview, 65; Spring Lake, 23; Yolo, 55; Mount Pleasant, 25. Total, 1,998; amount, \$4,215 78.

YUBA.—Bear River, 53; Brophy, 38; Brown's Valley, 67; Buckeye, 25; Cordua, 40; Dobbin's Ranch, 40; Elizabeth, 28; Garden Valley, 18; Greenville, 29; Hansonville, 24; Honcut, 39; Indiana Ranch, 53; Junction, 14; Linda, 49; Long Bar, 21; Marysville, 797; McDonald, 22; New York, 87; Oak Valley, 31; Oregon House, 56; Park, 36; Peoria, 33; Plumas, 83; Rose Bar, 109; Slate Range, 95; Spring Valley, 42; Strawberry Valley, 41; Timbuctoo, 77; Virginia, 34; Yuba, 46. Total, 2,127; amount, \$4,487 97.

“NORMAL TRACT ON COMMON FRACTIONS.”—We would call the attention of the readers of the *TEACHER* to the series of articles with this caption commencing in the present number. Among the many good things the author

has given to the public through the pages of this journal, the TALK ON FRACTIONS will not be the least valuable or the least appreciated, and we are glad that the difficulty in printing was so far overcome that the articles can appear, contrary to the announcement of the author in our last issue.

SACRAMENTO COUNTY TEACHERS' INSTITUTE.

THIS body met on the morning of February 15th and held a four days' session. The proceedings, which were of a particularly interesting character, will appear in the TEACHER for next month. The State Superintendent was present during the last day, and caught the *spirit* and saw something of the exercises of one of the very best Institutes ever held in California. There was less *talk*, and more *work*, than usual. Class exercises and illustrations of methods took the place of the wordy and prosy essays so common on such occasions. There was no lack of professional enthusiasm among the teachers, while County Superintendent, Trafton, and City Superintendent, Hill, worked together with admirable harmony and efficiency. A judicious programme had been pre-arranged, and was faithfully followed. When we come generally to have working, instead of talking, Institutes, all question and discussion as to their utility will cease.

TEXT BOOKS.

THIS is the one annoying subject to a State school officer. Text books in the several branches of common school learning are so numerous; opinions as to their merits are so various; publishers and agents are so active and persevering; and the public mind is so sensitive with regard to changes, that it requires sound judgment, careful examination and moral courage to deal with the matter properly. The principles which should govern the State Board are plain enough: Adopt the best books; adopt no more than are absolutely necessary, make changes when needful, but not otherwise. It is bad policy to retain a bad book on any terms, as it is a wrong against the purses of the people to make any change that is not for the better.

MONTEITH'S GEOGRAPHIES.

By vote of the State Board of Education, Monteith's Geographies are not to be introduced into the Public Schools until July 1st, 1870, after which date three months will be allowed, for their introduction, according to the published terms, in the last TEACHER. The *Pacific Coast Edition* of the books will not be ready for distribution until about the time named. Those interested will do well to bear this in mind, and not order supplies from the old stock now on hand. Before the time for introduction, a circular containing full instructions will be issued.

DORVILLE LIBBY,
Agent for the Publishers.

STATE SERIES OF TEXT BOOKS.

ARITHMETIC.—Eaton's Primary; Eaton's Intellectual; Eaton's Common School; Eaton's Higher.

GEOGRAPHY.—Nos. I, II and III of the Monteith series of Geographies have been adopted by the State Board, and will go into use on the first of July next. (See TEACHER for last month.) Those now authorized are Allen's Primary; Cornell's Primary; Warren's Intermediate; Warren's Physical; Shaw and Allen's; Cornell's Outline Maps; Guyot's Wall Maps of Physical Geography. (The adoption of a single series instead of all this *jumble*, is certainly a *reform* movement.)

GRAMMAR.—Brown's Series.

READERS.—Willson's entire series, with Charts.

PHYSIOLOGY.—Cutter's Elementary; Hooker's Larger.

HISTORY OF THE UNITED STATES.—Quackenbos' Primary; Quackenbos' Larger.

NATURAL PHILOSOPHY.—Quackenbos' Natural Philosophy.

ALGEBRA.—Robinson's Series.

MORAL TRAINING.—Cowdery's Moral Lessons.

PENMANSHIP.—Payson, Dunton & Scribner's.

ENGLISH COMPOSITION.—Bonnell's Manual.

DRAWING.—Burgess'.

 INDIAN CHILDREN.

REV. DR. T. O. ELLIS, *Co. Supt. Schools, Fresno County*:

DEAR SIR:—In your communication of Jan. 22d you ask me to define specifically the proper meaning and construction of section 56 of the Revised School Law, relating to Indian children. I will endeavor to comply with your request, prefacing my opinion with the respectful suggestion that in a case like this, where the language of the law is sufficiently ambiguous to lead to honest differences of opinion, a spirit of compromise and patience should govern all who are concerned in the matter, officially or otherwise.

There is, of course, no difficulty about what is meant by "half-reed Indian children, and Indian children who live in white families." The difficulty is concerning those "under guardianship of white persons." The meaning to my mind must be this:

White persons have "guardianship" of such Indian children when they stand *in loco parentis* to them—that is, when they have them under their control and are responsible for their management and support. The mere fact that the parents of Indian children live on land belonging to white persons, or are employed by white persons, does not, in my judgment, constitute "guardianship."

This construction seems to me clear and sound, and by it I should think any particular case may be determined.

Yours truly,

O. P. FITZGERALD,
Supt. Public Instruction.

SPECIAL LEGISLATION IN SCHOOL MATTERS.

In California, we have had too much special legislation in school matters. A general school law should be sufficiently comprehensive and flexible in its features to cover the wants of the whole State, without the interminable special legislation to which we have become accustomed. Every little town wishes to become an *imperium in imperio*, and our statute book is made plethoric with special acts, embracing provisions in many instances already comprehended in the general school law of the State, and in others conflicting therewith. Special legislation is a curse in every department of the government, always creating confusion and often leading to corruption.

THE RAW-HIDE.

THE Principal of a Grammar School in one of our large interior towns purchased a *raw-hide* for use among his pupils. The Trustees hearing of this, remonstrated against its use. Notwithstanding this remonstrance, the raw-hide was used. Result: Principal dismissed. Right—the dismissal. A teacher who cannot maintain order in his school without the use of a raw-hide would suit better some other occupation.

FIRST STEPS IN MUSIC. By GEORGE B. LOOMIS. Indianapolis: 1869.

We receive from the author the first and second numbers of the series, which when complete, is to have five or six. The work is designed to present the rudiments of music simply and progressively, so that a teacher with no musical education,—only ability to sing the scale correctly and beat time regularly,—can teach his pupils to sing. The two numbers received are suited to the primary grade—and have variety, clearness, and adaptability to the field they are to occupy. The moderate cost will also commend them to the public.










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The Second Term of the current year will commence on the 8th day of November, 1869. All candidates for admission must be present at that time.

COURSE OF STUDY.

REQUISITES FOR ADMISSION.

To secure admission to the Junior Class, Second Division, applicants must pass a written examination on the following subjects, viz.:

Eaton's Common School Arithmetic—to percentage.

Eaton's Intellectual Arithmetic.

Greene's Introduction to English Grammar.

Willson's Fourth Reader.

Spelling; Penmanship.

Applicants for an advanced Class will be required to pass an examination on the studies previously pursued by that Class.

JUNIOR CLASS—*First Session.*

Arithmetic—Eaton's Common School—complete.

Grammar—Quackenbos'—begun.

Geography—Guyot's Common School.

Reading—Willson's Fifth Reader.

Moral Lessons—Cowdery's.

Spelling—Willson's Larger Speller.

JUNIOR CLASS—*Second Session.*

Arithmetic—Eaton's Higher.

Grammar—Quackenbos'—complete.

Rhetoric—Boyd's.

Physiology—Cutter's Elementary.

History—Quackenbos'.

Vocal Culture—Russell's.

Book-keeping—Payson & Dutton's Single Entry.

General Exercises throughout the Junior Year—Penmanship; Object-Lessons; Calisthenics; Methods of Teaching; School Law; Composition and Declamation.

SENIOR CLASS—*First Session.*

Arithmetic—Eaton's Higher—reviewed.

Algebra—Robinson's Elementary.

Grammar—Greene's Analysis.

Natural Philosophy—Quackenbos'.

Physiology—Cutter's Larger.

Rhetoric—Boyd's.

Natural History—Tenney's.

SENIOR CLASS—*Second Session*

Botany—Gray's.

Physical Geography—Warren's, with Guyot's Wall Maps.

Normal Training—Russell's.

Geometry—Davies' Legendre—five books.

English Literature—Shaw's.

Book-Keeping—Payson & Dunton's Double Entry.

General Exercises—Same as in Junior Year.

REGULATIONS OF THE STATE NORMAL SCHOOL.

Adopted by the Board of Normal School Trustees, March 28, 1868.

1. All pupils, on entering the School, are to sign the following declaration of intention:

"We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State."

Male candidates for admission must be at least eighteen years of age; and female applicants at least fifteen years of age; and all must possess a good degree of physical health and vigor.

2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

GENERAL INFORMATION.

The time for completing the Normal School course is two years, each divided into two terms of five months.

There will be Written Examinations and Public Exercises at the close of each term. The Graduating Exercise will be in May.

Pupils will be required to furnish their Text Books. Books for reference will be furnished by the State. Good boarding can be procured at about twenty-five to thirty dollars per month.

Applicants will please read attentively the "Regulations" as given above, particularly the Fourth and Fifth.

All graduates will be required to pass an examination on the entire course. Those who complete the studies of the Junior Class will be entitled to certificates of qualification, for teaching schools of Second and Third Grade.

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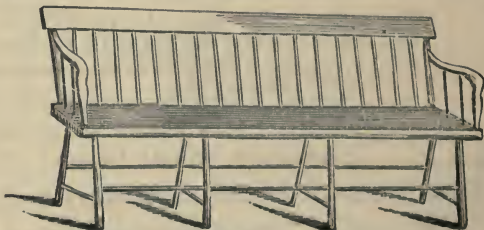
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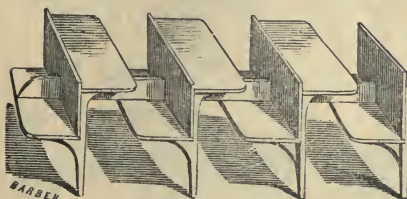
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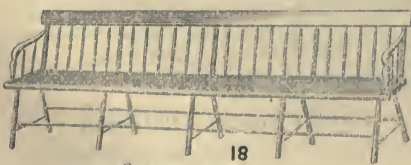
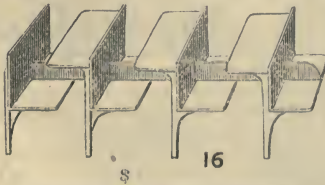
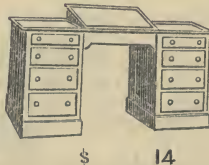
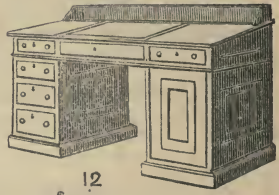
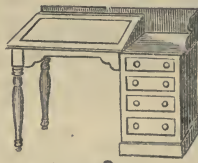
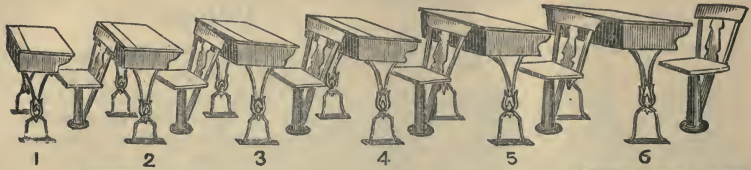
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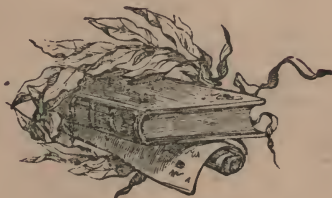
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SACRAMENTO COUNTY TEACHERS' INSTITUTE.

TUESDAY, February 15, 1870.

THE Sacramento County Teachers' Institute met pursuant to the call of Dr. A. Trafton, County Superintendent, at two o'clock yesterday afternoon, in the High School building. Dr. Trafton called the meeting to order. Prayer by the Rev. W. R. Gober. Music—singing, "The Old Oak Tree," Miss McCormick presiding at the piano.

The following is a list of those present who are members of the Institute:

City Teachers, Ladies—Katie Burns, Mrs. Southworth, Emma Hoit, Mrs. L. H. Wells, Mary Keegan, Anna R. Pond, E. A. Story, Clara Garfield, E. A. Aubry, Mercy Waters, Belle Taylor, Jennie A. Gourlie, M. J. Watson, Fannie Dennis, Mattie Gilmer, S. J. Wier, Jennie Burke, Marietta Hall, Sarah J. Landon, Laura Templeton, Nellie Sprague, Alida Payne, Belle Kemble, Sarah C. Marvin, Ella Coombs, N. J. Mills, Mary E. Wall, Fannie E. Bennett, Mary E. Saunders, Clara Jones, Hattie McCormick, Louisa Rudolph, Julia Jones, Maggie Woodland.

Gentlemen—A. H. McDonald, W. H. Crowell, Milo Templeton, H. W. Brown, A. Dulón.

County Teachers—S. H. Jackman, C. Q. Martin, F. Cogswell, J. H. Shannon, John Bagnall, John Young, W. B. Wallace, H. Fitch, H. S. Austin, Bishop E. Watkins, A. Spooner, Wm. Connor, Maggie Kilgarif, Louisa B. Cary, S. J. Pullen.

After which the Institute proceeded to business, and elected Rev. William H. Hill, Isaac Upham, H. W. Brown and S. H.

Jackman Vice-Presidents; Charles E. Bishop, Secretary, John Young and Miss Belle Taylor Assistant Secretaries.

A motion by Rev. William H. Hill that all the private as well as public teachers in the county be made honorary members of the institute, was carried.

Upon motion of Rev. Mr. Hill, all Clergymen and School Trustees in the county were made honorary members.

Superintendent Trafton appointed a committee on introduction, consisting of W. H. Crowell, Cyrus Wilson, Miss Clara Jones, Miss Ella Coombs and Miss N. J. Miller.

A committee on music was appointed, consisting of Miss Hattie McCormick, Clara Jones, Maggie Woodland, J. Weir and Fannie Dennis; Messrs. A. H. McDonald, F. Cogswell, Lafayette Miller, E. H. Fitch and J. H. Shannon.

A committee on resolutions was appointed, as follows: F. Cogswell, J. H. Shannon, Mrs. Southworth, Misses J. Weir, Hattie McCormick, Fannie E. Bennett and H. W. Brown.

On motion of Mr. Jackman, Messrs. Upham and Bissell were elected honorary members.

Dr. Trafton then delivered his opening address, which was highly commended.

The Secretary received a communication that the Superintendent be requested to furnish a copy of his address for publication in the CALIFORNIA TEACHER, and a motion to that effect was adopted. The Institute then adjourned.

The Superintendent selected from teachers a class to enable Mr. Shannon to demonstrate his method of teaching spelling. He seemed very earnest and enthusiastic in regard to his system. Mrs. Southworth, Mr. Hill and the Superintendent criticised the system. Mr. Hill made a few remarks on composition, and advised the Institute that the preparation of matter for the press was the severest test. A motion to appoint a critic was voted down very emphatically, the ladies being heard at that time, at least. The Institute then adjourned till 7 o'clock p. m.

At the evening session the roll was called, quite a number failing to respond. The reading of the minutes was dispensed with. A class in spelling was selected to enable Mr. Martin to demonstrate his style of spelling, which was very ably performed, and did much credit to Mr. Martin, who is a young teacher. Mr. Cogswell adversely criticised Mr. Shannon's spelling method, to whom the latter replied in justification. Miss Weir thought his system too lengthy for a large class—would occupy too much time. Mr. Bagnall was opposed to any set method—thought that pupils should be presented with a variety in an exercise. Mr. Goethe spoke of the manner in which spelling was taught in Europe—by written exercises. Mrs. Southworth concurred with the latter, and spoke of the superiority of German children in this line of education. The Institute adjourned to meet at half past nine o'clock.

SECOND DAY.

WEDNESDAY, February 16, 1870.

The Institute met pursuant to adjournment. The roll was called and all the members found to be present. Minutes of preceding day were read and approved. Prayer was offered by Rev. H. W. Brown. Music by Misses McCormick, Rudolph and others.

An address by S. H. Jackman on "School Discipline" followed. The speaker made the following points: First—Considered that any method tending to the discomfort of the pupil was corporeal punishment. Second—That pupils frequently misrepresented facts to their parents, and thus created a false impression concerning their teachers, in order that they might have a change of teachers out of a spirit of revenge; they, (the teachers,) well knowing this to be the case, were slack in discipline to avoid trouble. Third—That teachers must have practice, and that theory could not supply the place of it. Fourth—Teachers must seek to gain the esteem of both pupil and parent in order to be successful.

M. L. Templeton agreed with Jackman as regarded theory and practice; teachers might be theoretical and yet not successful.

Mr. Fitch argued that the system of engaging teachers for short periods was likely to make them easy in discipline.

J. Bissell and A. H. McDonald approved of a system in which the scholars were prevailed upon to sign resolutions binding them to diligence and discipline.

Mrs. Southworth then brought before the Institute a class of her own pupils in Analytical Manual; the exercises were quite interesting and were highly commended. A recess of ten minutes was then given, during which an animated and general social conversation was maintained until again called to order.

Rev. Mr. Hill then proceeded to discourse upon "How to Teach Composition," and gave many valuable suggestions upon the most difficult subject to teach. The criticism and comment which followed was entirely commendatory and all felt that they had been benefitted by the discourse. Mr. Hill maintained that the highest standard of composition was that required for the press, and proposed that every member of the Institute write a short article with a view to publication, and ventured to say that he would find something to correct in every one. The proposition, however, was not acted upon. Some additional singing exercises were given, when the Institute adjourned until two o'clock.

* AFTERNOON SESSION.

The exercises opened with singing, after which Mrs. Wells gave, with a class of her own pupils, illustrations of her method of teaching Practical Arithmetic, but confining the exercises particularly to "interest." Her system had abundant vindication in the proficiency of her pupils, and which was generally allowed

to be extraordinary; some catch questions were promptly answered by one of the class. This exercise was followed by a class in Calisthenics, in uniform, from Miss Watson's department of the Grammar School, and their performance was excellent, every movement being made with the utmost promptness and precision. This exercise elicited well merited and generous applause. A recess of ten minutes followed, which was occupied in general conversation and merriment. Upon being called to order, a general discussion on the preceding exercises was carried on, until a call was made for Mr. W. H. Crowell to illustrate his method of Composition, for which a class was formed of members of the Institute, when a subject was given on the blackboard, and one pupil required to write a sentence upon it, then another and another, until all the class had written and quite a composition was formed. The advantage claimed for this method was, that it induced pupils to think for themselves and made it seem easy to each to do what another had just done. Discussion followed until the Institute adjourned, to meet at seven o'clock.

EVENING SESSION.

The President called the Institute to order promptly at seven, and found most of the members present; a few came in afterwards however, and were marked "tardy," under a rule which the Superintendent seems determined to rigidly enforce. The regular order being an address on "Language," by Mr. Dulon, that gentleman favored the audience with a brief and tersely written address on "Language," and was followed by Mr. N. Slater in an off-hand discourse upon the same subject. Some comment and criticism followed, mostly commendatory, however, when the Institute adjourned to meet at half past nine o'clock.

THIRD DAY.

THURSDAY, February 17th, 1870.

THE Institute was called to order by the President at half-past nine o'clock, and was opened with an appropriate prayer by Rev. H. W. Brown. Music—singing—"The Star Spangled Banner."

Upon calling the roll, sixty-eight members were found to be present, and after some singing exercises the class of Fannie E. Bennett, in Mental Arithmetic, was called, and solved the various problems given, in a manner alike creditable to themselves and teacher, the general verdict being that the performance could hardly be excelled. A general vote of thanks was then tendered to the teacher and class who had favored the Institute with exercises. Mr. Bagnall followed with a few facetious remarks upon the practice of speaking so low as not to be heard, and urged members to abandon it and speak louder.

A recess of ten minutes followed.

Upon being again called to order, a little Miss, of ten years,

whose name we afterwards learned was Annie Stovall, came forward and sang in admirable style, accompanying herself on the piano, the popular song entitled "Long, Long, Weary Days."

C. D. McNaughton then read an original poem, which elicited general commendation.

THE MODERN TEACHER.

I.

When God sent forth his ministers of fate
 To rear for fallen man a better state,
 He bade them in their walk among mankind
 In mercy go unto the halt and blind:
 Go seek the sorrowing afar and near,
 And stop the widow's and the orphan's tear.
 Not this alone, but by the great command
 Was proudly borne aloft in either hand
 The lamp of wisdom and the lettered page,
 To warn the erring soul from youth to age;
 To mark the cold and lonely path of night,
 And ever teach mankind to walk aright.

II.

So go the ministers of every land,
 Who hold a nation's fate at their command.
 The lamp is burning brighter every year,
 And broader structures their proportions rear,
 With ample doors thrown open to secure
 The willing homage of the rich and poor.
 What more can Time unto the future yield?
 What more the reaper gather from the field?
 The work speeds on, approved and blessed of God—
 The Teacher and his genius are abroad;
 The march of empire and the march of mind,
 With equal pace encompass all mankind;
 Exult o'er every land and every sea,
 And nations rise exalted, proud and free!

III.

Eternal Change controls material things,
 And o'er the world of thought his sceptre flings;
 The ocean slumbers at his careless nod,
 Or swells in madness when he lifts his rod;
 He wakes to life the little smiling flower,
 Or cuts it down in some unhappy hour.
 So all things yield to his unique demands,
 The transient playthings of his royal hands.
 The dull routine, by which the pedant sought
 To elevate the scope of youthful thought,
 Is wrought into a short and ardent zeal
 By arts that *many* praise, but *few* reveal.
 The weary practice once pursued in schools,
 That clogged the mind with arbitrary rules,
 And checked the teeming mind with irksome tasks,
 A sprightly mode and happier method asks.
 The stores of nature now are brought to view,
 And all the faculties awake anew;
 And images upon the wall extend
 A festal welcome to each little friend.

The captious pedagogue has left the stage.
 A liberal and more enlightened age
 Demands what Science long had vainly sought :
 A plan to elevate the soul of thought—
 A system that can yield in one short hour
 The prestige of a more exalted power,
 Than all the antique schemes could hope or claim,
 Or wring from toil in search of praise or fame.

IV.

What see we now when looking out abroad
 Upon this brotherhood of nature's God?
 The wreath that decks the brow of honest fame
 Is woven, Wisdom ! in thy holy name.
 Not always in the glories of an hour,
 The field, the forum nor the pomp of power.
 But ah ! thine emblem droops beside yon weed,
 Yon casual offspring of a vital creed,
 That flings abroad the keen didactic weight
 Of all its sentient fruits of love and hate.
 But hark ! some spirit whispers draw the veil
 And never dare one guileless heart assail,
 Nor smite Conviction while its teeth remain,
 Nor darling Faith's proud heritage profane.

V.

The being that imparts intelligence
 Should be a man of culture and of *sense*;
 A dauntless and devoted pioneer
 Who tills the soil of progress year by year;
 A man of independent mind in aught
 That needs originality of thought;
 Not one to sell his manhood at the call
 Of pride, or passion, from the great or small;
 Not one to bend to caste the pliant knee—
 Obedient to some false or base decree
 The crowd is ready to applaud or hiss
 As feeling prompts—but that is oft amiss.
 Then heed this maxim: Ever prompt and just,
 Be firm but not vindictive in your trust;
 True to yourself and to your fellow-man,
 And Hope will smile auspicious on the plan.

The Institute then adjourned until two o'clock.

AFTERNOON SESSION.

President Trafton called the Institute to order promptly at the hour, with nearly all the members present. Singing exercises followed, after which a motion was made and carried that all resident teachers be declared members of the Institute. This was done to include several Legislators who had been teachers.

Mr. Templeton, of the High School, then gave a series of experiments in Natural Philosophy, confined, however, to the department of Electricity. His assistant was Master Haswell, of the same school. These experiments comprised most of the leading features of this division of the science; action of the battery, the principle of Morse's telegraph, etc., and were highly

interesting. This was followed by a class in Geography of Primary scholars, under Mrs. E. A. Stacy, by which all the prominent questions in their usual lessons were answered with a readiness and a general correctness which gave evidence of thorough drill in that study. Indeed, for pupils so young, their proficiency was remarkable. A. H. McDonald, of the Grammar School, then gave illustrations of a method of teaching analysis of sentences by diagrams, which were interesting, and elicited some comment. Here, Superintendent Hill announced that he would grant leave of absence to the city teachers for Tuesday and the forenoon of Wednesday, in order that they might attend the musical festival at the Bay.

Mr. Bishop then occupied about half an hour in a discourse upon penmanship, when the Institute adjourned, to meet at half past nine o'clock.

FOURTH DAY.

FRIDAY, February 18th, 1870.

The Institute met at half-past nine A.M., and was called to order by the County Superintendent. Prayer was offered by Rev. William H. Hill. Minutes of the previous day were read and approved.

A class in Willson's Third Reader was then exercised by Miss F. E. Bennett. The scholars displayed great proficiency and received warm applause.

A class in Willson's Third Reader, Miss Clara Jones, teacher, was next introduced. Miss Jones explained her method of teaching, which consisted mainly in reading the lesson herself, and then requiring the pupils to imitate her. The scholars read in concert and singly, and showed a culture of which they and their teacher may feel proud.

Miss Lucy O'Brien, a young lady of ten years, read the "Old Arm Chair" in a manner which "brought down the house."

Discussion followed in regard to the proper method of teaching Reading. Mr. Brown called the attention of the teachers to the mispronunciation of the word "God." The morning session then closed.

AFTERNOON SESSION.

The State Superintendent, Dr. O. P. Fitzgerald, was introduced and presided during the session.

Miss Mary Keegan brought her class in Willson's Second Reader, and after reading in concert, questions in Geography were answered in concert and with a general correctness showing great familiarity with this study. Exercises in colors on color charts were given, which were highly interesting and creditable to teacher and pupils. Upon the whole the efforts of this class were eminently satisfactory and received general commendation and applause. An essay on the usefulness of Calisthenics in country schools was then read by Mr. Miller, in which the advan-

tages of this exercise were fully set forth. A class in Calisthenics from Miss Sarah Landon's primary school then took the floor and went through the various movements without music in a manner which elicited the heartiest applause.

Rev. Mr. Hill then said a few words in favor of Calisthenics, maintaining that a half hour each day spent in this exercise, would benefit scholars more than an hour exercising in the usual way, and that it tended greatly to improve the discipline of the schools.

Mr. Drake and others followed, maintaining substantially the same view.

Dr. Fitzgerald stated that the Sierra County Institute had adopted a resolution in favor of Calisthenics, and hoped this one would.

RECESS.

Upon reassembling, Mr. Cogswell moved that vocal music be recommended to be taught in all the schools. Adopted.

The Committee on Resolutions made the following report, which was read and adopted:

Resolved, That as Teachers we take a high view of the dignity of our profession, and a broad view of its scope; that we feel it our duty to promote the moral as well as the intellectual culture of our pupils, and especially to encourage in them truthfulness, kindness and enthusiasm for the right.

Resolved, That the Teachers' Institute is of great value, and that teachers should not only attend, but do all in their power to make the meetings of the Institute profitable and pleasant.

Resolved, That the teachers should be allowed one day, in a term of three months, for the purpose of visiting other schools in the county, without deduction of salary.

Resolved, That spelling should be taught by the method of writing, as far as practicable.

Resolved, That composition should be taught after the manner suggested by the City Superintendent, and that the method of spelling by writing would afford a good opportunity for the desired method of composition.

Resolved, That the thanks of the Institute are tendered to the County Superintendent, for his successful efforts in managing and conducting the present meeting; to the City Superintendent, for his valuable services; to the Board of Education, for the use of the High School building; to teachers of private schools and other persons who have taken part in the exercises; to the Central Pacific, Sacramento Valley and Western Pacific Railroad Companies, for facilities furnished the members of this Institute; to the press of the city, for their reports of the proceedings.

The resolutions were unanimously adopted.

Adjourned until seven o'clock P.M.

The main feature of the evening session was an excellent address by State Superintendent Fitzgerald, on the subject of teachers and teaching. The audience gave him close attention, and applauded the prominent points heartily.

The following resolutions were adopted:

Resolved, That it is desirable that Calisthenics should be taught in all our public schools.

Resolved, That the thanks of the Institute are tendered to the Rev. Messrs. Ober, Brown and Hill, for their services as Chaplains.

Resolved, That the thanks of this Institute are hereby tendered to the Secretary, C. E. Bishop, and his assistant, Miss Belle Taylor.

A resolution of thanks to State Superintendent O. P. Fitzgerald for his address was adopted.

After reading the minutes of the day's proceedings, the Institute adjourned *sine die*.

Directly after the adjournment, willing hands commenced the work of clearing the floor, and in a few moments it was occupied by a gay party of ladies and gentlemen, the teachers and their friends, who, to the music of a band led by J. P. Melchior, tripped the "light fantastic" till midnight, and finally separated with the feeling that they had enjoyed a very pleasant time.

NORMAL TRACT ON COMMON FRACTIONS.

BY BERNHARD MARKS.

b. $2\frac{1}{2} =$ how many $\frac{2}{2}$?

OPERATION.

$$\begin{array}{r} 2 \\ 2 \text{ (To be read, 2 times } \frac{2}{2} \text{)} \\ \hline 4 \\ 1 \\ \hline \frac{5}{2} \end{array}$$

SOLUTION.

$$\begin{aligned} 1 &= \frac{2}{2} \\ 2 &= \frac{2}{2} \times 2 = \frac{4}{2} \\ \frac{4}{2} + \frac{1}{2} &= \frac{5}{2}. \end{aligned}$$

MENTAL.

- $2\frac{1}{3} =$ how many $\frac{1}{3}$? $2\frac{1}{3}$? $1\frac{1}{3}$? $3\frac{1}{3}$? $3\frac{2}{3}$? $5\frac{2}{3}$? $6\frac{2}{3}$?
 $1\frac{3}{4} =$ how many $\frac{1}{4}$? $2\frac{1}{4}$? $2\frac{3}{4}$? $3\frac{1}{4}$? $3\frac{3}{4}$? $4\frac{3}{4}$? $5\frac{3}{4}$?
 $2\frac{1}{5} =$ how many $\frac{1}{5}$? $2\frac{2}{5}$? $3\frac{1}{5}$? $3\frac{3}{5}$? $4\frac{1}{5}$? $6\frac{3}{5}$? $8\frac{1}{5}$?
 $4\frac{3}{6} =$ how many $\frac{1}{6}$? $3\frac{5}{6}$? $4\frac{2}{6}$? $5\frac{3}{6}$? $6\frac{4}{6}$? $7\frac{5}{6}$? $8\frac{1}{6}$?
 $1\frac{7}{8} =$ how many $\frac{1}{8}$? $2\frac{3}{8}$? $3\frac{3}{8}$? $4\frac{5}{8}$? $5\frac{5}{8}$? $6\frac{7}{8}$? $7\frac{7}{8}$?
 $2\frac{5}{10} =$ how many $\frac{1}{10}$? $5\frac{3}{10}$? $7\frac{1}{10}$? $9\frac{3}{10}$? $10\frac{6}{10}$? $8\frac{7}{10}$? $3\frac{9}{10}$?

WRITTEN.

- $6\frac{1}{7} =$ how many $\frac{1}{7}$? $9\frac{1}{7}$? $15\frac{5}{7}$? $25\frac{5}{7}$? $100\frac{3}{7}$?
 $8\frac{7}{10} =$ how many $\frac{1}{10}$? $10\frac{3}{10}$? $19\frac{9}{10}$? $43\frac{5}{10}$? $123\frac{7}{10}$?
 $3\frac{8}{15} =$ how many $\frac{1}{15}$? $8\frac{14}{15}$? $10\frac{13}{15}$? $15\frac{2}{15}$? $25\frac{11}{15}$?
 $5\frac{1}{20} =$ how many $\frac{1}{20}$? $9\frac{11}{20}$? $30\frac{19}{20}$? $38\frac{9}{20}$? $28\frac{7}{20}$?
 $2\frac{45}{64} =$ how many $\frac{1}{64}$? $8\frac{1}{64}$? $16\frac{60}{64}$? $64\frac{63}{64}$? $200\frac{50}{64}$?
 $3\frac{121}{125} =$ how many $\frac{1}{125}$? $7\frac{1}{125}$? $45\frac{28}{125}$? $99\frac{100}{125}$? $342\frac{124}{125}$?

c and d. $\frac{4}{2} =$ how many ones ?

OPERATION.

SOLUTION.

$$2 \overline{) 4} \left\{ \begin{array}{l} \text{To be read, as many ones as } \frac{2}{2} = 1. \\ \text{there are times } \frac{2}{2} \text{ in } \frac{4}{2}. \end{array} \right\} \frac{2}{2} = \frac{4}{2} \div \frac{2}{2} = 2.$$

MENTAL.

- $\frac{12}{4} =$ how many ones? $\frac{8}{4} ? \frac{6}{3} ? \frac{12}{3} ? \frac{15}{3} ? \frac{18}{3} ? \frac{20}{2} ? \frac{21}{7} ?$
 $\frac{25}{5} =$ how many ones? $\frac{45}{5} ? \frac{36}{6} ? \frac{42}{7} ? \frac{72}{6} ? \frac{20}{10} ? \frac{20}{4} ? \frac{20}{5} ?$
 $\frac{13}{4} =$ how many ones? $\frac{11}{4} ? \frac{10}{4} ? \frac{8}{4} ? \frac{5}{4} ? \frac{5}{3} ? \frac{7}{3} ? \frac{13}{3} ?$
 $\frac{25}{3} =$ how many ones? $\frac{23}{3} ? \frac{20}{3} ? \frac{14}{3} ? \frac{10}{3} ? \frac{11}{3} ? \frac{9}{3} ? \frac{12}{5} ?$
 $\frac{14}{6} =$ how many ones? $\frac{20}{6} ? \frac{25}{6} ? \frac{15}{7} ? \frac{22}{7} ? \frac{25}{7} ? \frac{9}{8} ? \frac{24}{8} ?$
 $\frac{20}{10} =$ how many ones? $\frac{50}{10} ? \frac{10}{10} ? \frac{25}{10} ? \frac{75}{10} ? \frac{12}{8} ? \frac{33}{11} ? \frac{56}{11} ?$

WRITTEN.

- $\frac{58}{2} =$ how many ones? $\frac{100}{4} ? \frac{256}{2} ? \frac{256}{4} ? \frac{256}{8} ? \frac{256}{16} ? \frac{256}{32} ?$
 $\frac{50}{24} =$ how many ones? $\frac{100}{50} ? \frac{96}{48} ? \frac{250}{125} ? \frac{250}{25} ? \frac{250}{5} ? \frac{375}{50} ?$
 $\frac{64}{16} =$ how many ones? $\frac{96}{16} ? \frac{72}{18} ? \frac{537}{537} ? \frac{2475}{1237} ? \frac{4000}{1000} ? \frac{3600}{1800} ?$
 $\frac{15}{7} =$ how many ones? $\frac{16}{7} ? \frac{17}{7} ? \frac{27}{7} ? \frac{78}{7} ? \frac{96}{7} ? \frac{127}{7} ?$
 $\frac{20}{10} =$ how many ones? $\frac{31}{10} ? \frac{71}{10} ? \frac{140}{10} ? \frac{149}{10} ? \frac{256}{10} ? \frac{2000}{10} ?$
 $\frac{96}{25} =$ how many ones? $\frac{96}{94} ? \frac{127}{120} ? \frac{296}{200} ? \frac{558}{558} ? \frac{596}{595} ? \frac{178}{100} ?$
 $\frac{327}{17} =$ how many ones? $\frac{327}{27} ? \frac{327}{36} ? \frac{327}{96} ? \frac{327}{125} ? \frac{327}{300} ? \frac{327}{1} ?$

2.

Write $\frac{1}{2}, \frac{3}{4}, \frac{7}{8}$, etc.

$\frac{13}{304}, \frac{348}{1040}$, etc.

$\frac{121}{5}, \frac{3468}{20}$, etc.

$20\frac{5}{7}, 356\frac{28}{29}$, etc.

$100\frac{5}{3}$ and $\frac{107}{9}, \frac{2002}{7}$ and $2000\frac{2}{3}$, etc.

3.

a. $2 =$ how many $\frac{2}{3}$?

OPERATION.

SOLUTION.

$$\begin{array}{r}
 2 \\
 3 \\
 \hline
 \frac{6}{3}
 \end{array}
 \quad
 \left[\text{To be read 2 times } \frac{2}{3}. \right]
 \quad
 \begin{array}{l}
 1 = \frac{3}{3} \\
 2 = \frac{3}{3} \times 2 = \frac{6}{3}
 \end{array}$$

MENTAL.

- $3 =$ how many $\frac{3}{5}$? $5 ? 7 ? 10 ? 12 ?$
 $5 =$ how many $\frac{5}{7}$? $2 ? 4 ? 6 ? 8 ?$
 $4 =$ how many $\frac{4}{10}$? $6 ? 8 ? 9 ? 10 ?$
 $=$ how many $\frac{4}{3}$? $9 ? 10 ? 11 ? 12 ?$

WRITTEN.

$$8 = \text{how many } \frac{1}{5} ? \quad 18 ? \quad 23 ? \quad 93 ? \quad 104 ?$$

$$19 = \text{how many } \frac{1}{7} ? \quad 17 ? \quad 28 ? \quad 96 ? \quad 125 ?$$

$$7 = \text{how many } \frac{1}{13} ? \quad 12 ? \quad 18 ? \quad 25 ? \quad 46 ?$$

$$8 = \text{how many } \frac{1}{25} ? \quad 15 ? \quad 22 ? \quad 45 ? \quad 109 ?$$

$$19 = \text{how many } \frac{1}{90} ? \quad 15 ? \quad 44 ? \quad 100 ? \quad 400 ?$$

$$12 = \text{how many } \frac{1}{250} ? \quad 19 ? \quad 65 ? \quad 400 ? \quad 555 ?$$

4.

$$a. \quad \frac{2}{3} + \frac{2}{3} + \frac{1}{3} = \text{What?}$$

OPERATION AND SOLUTION.

$$\frac{2}{3} + \frac{2}{3} + \frac{1}{3} = \frac{5}{3} = 1\frac{2}{3}.$$

MENTAL.

$$\frac{1}{3} + \frac{1}{3} = \text{what?} \quad \frac{2}{4} + \frac{1}{4} ? \quad \frac{2}{5} + \frac{2}{5} + \frac{1}{5} ? \quad \frac{1}{6} + \frac{2}{6} + \frac{2}{6} ? \quad \frac{3}{10} + \frac{2}{10} + \frac{1}{10} ?$$

$$\frac{1}{2} + \frac{1}{2} = \text{what?} \quad \frac{2}{3} + \frac{2}{3} ? \quad \frac{3}{4} + \frac{3}{4} ? \quad \frac{1}{4} + \frac{2}{4} + \frac{3}{4} ? \quad \frac{3}{5} + \frac{2}{5} + \frac{4}{5} + \frac{1}{5} ?$$

$$\frac{4}{5} + \frac{4}{5} = \text{what?} \quad \frac{1}{5} + \frac{2}{5} + \frac{3}{5} + \frac{4}{5} ? \quad \frac{4}{5} + \frac{4}{5} + \frac{4}{5} ? \quad \frac{1}{7} + \frac{2}{7} + \frac{3}{7} + \frac{4}{7} ? \quad \frac{6}{7} + \frac{6}{7} ?$$

$$\frac{7}{10} + \frac{6}{10} = \text{what?} \quad \frac{9}{10} + \frac{8}{10} + \frac{7}{10} ? \quad \frac{6}{10} + \frac{5}{10} + \frac{4}{10} + \frac{3}{10} ? \quad \frac{9}{10} + \frac{9}{10} ? \quad \frac{3}{12} + \frac{4}{12} + \frac{5}{12} ?$$

WRITTEN.

$$\frac{5}{13} + \frac{7}{13} + \frac{8}{13} = \text{what?} \quad \frac{12}{13} + \frac{11}{13} + \frac{10}{13} ? \quad \frac{14}{15} + \frac{10}{15} + \frac{8}{15} + \frac{1}{15} ? \quad \frac{8}{20} + \frac{7}{20} + \frac{13}{20} ?$$

$$\frac{21}{25} + \frac{23}{25} + \frac{17}{25} = \text{what?} \quad \frac{35}{30} + \frac{18}{30} ? \quad \frac{7}{30} + \frac{12}{30} + \frac{18}{30} + \frac{25}{30} ? \quad \frac{15}{35} + \frac{20}{35} + \frac{25}{35} ?$$

$$\frac{18}{40} + \frac{21}{40} + \frac{35}{40} = \text{what?} \quad \frac{7}{40} + \frac{13}{40} + \frac{3}{40} ? \quad \frac{18}{40} + \frac{12}{40} + \frac{10}{40} ? \quad \frac{25}{40} + \frac{25}{40} + \frac{25}{40} + \frac{5}{40} ?$$

$$\frac{45}{75} + \frac{35}{75} + \frac{70}{75} = \text{what?} \quad \frac{43}{80} + \frac{17}{80} + \frac{36}{80} ? \quad \frac{48}{121} + \frac{75}{121} + \frac{88}{121} ? \quad \frac{115}{120} + \frac{119}{120} + \frac{95}{120} ?$$

$$b, c, d \text{ and } e. \quad 5\frac{2}{3} + 4\frac{2}{3} = \text{What?}$$

OPERATION.

5

4

1
310 $\frac{1}{3}$.

$$\frac{2}{3} + \frac{2}{3} = \frac{4}{3} = 1\frac{1}{3}.$$

MENTAL.

$$5 + \frac{2}{3} = \text{what?} \quad 5\frac{2}{3} + \frac{1}{3} ? \quad 6\frac{3}{4} + \frac{2}{4} ? \quad 7\frac{3}{5} + \frac{4}{5} ? \quad 10\frac{7}{8} + \frac{5}{8} ?$$

$$5\frac{2}{3} + 3 = \text{what?} \quad 5 + 3\frac{2}{3} ? \quad 6\frac{3}{4} + 4 ? \quad 4 + 6\frac{3}{4} ? \quad 7\frac{5}{8} + 7 ?$$

$$5\frac{2}{3} + 3\frac{1}{3} = \text{what?} \quad 4\frac{3}{4} + 2\frac{1}{4} ? \quad 3\frac{3}{5} + 2\frac{2}{5} ? \quad 8\frac{5}{6} + 3\frac{1}{6} ? \quad 10\frac{6}{7} + 1\frac{2}{7} ?$$

$$1\frac{1}{2} + 1\frac{1}{2} = \text{what?} \quad 2\frac{1}{2} + 2\frac{1}{2} ? \quad 3\frac{1}{2} + 3\frac{1}{2} ? \quad 4\frac{1}{2} + 4\frac{1}{2} ? \quad 5\frac{1}{2} + 5\frac{1}{2} ?$$

$$1\frac{1}{4} + 1\frac{1}{4} = \text{what?} \quad 2\frac{1}{4} + 2\frac{1}{4} ? \quad 3\frac{1}{4} + 3\frac{3}{4} ? \quad 4\frac{2}{8} + 4\frac{1}{8} ? \quad 5\frac{5}{6} + 7 ?$$

$$10 + 3\frac{1}{2} = \text{what?} \quad 8\frac{1}{2} + 10 ? \quad 11\frac{1}{2} + 5\frac{1}{2} ? \quad 12\frac{3}{4} + 4\frac{1}{4} ? \quad 6\frac{5}{10} + 3\frac{5}{10} ?$$

WRITTEN.

$$4\frac{2}{3} + 1\frac{2}{3} + 3 = \text{what?} \quad 5\frac{3}{5} + \frac{3}{5} + 2\frac{2}{5} ? \quad 6\frac{4}{5} + 3\frac{1}{5} + 5 + \frac{3}{5} ? \quad 6\frac{1}{7} + 8\frac{4}{7} ?$$

$$\begin{aligned}
& 7^5 + 6^4 + 5^3 + 3^2? \quad 10^3 + 13^5 + \frac{7}{8} + 6? \\
& 12^3 + 10^3 + 9^3 + 13? \quad 8^9 + 13^7 + 11^1 + \frac{9}{10}? \\
18^3 + 25^4 + 13^2 = \text{what?} & \quad 20^5 + 31^6 + 43^7? \quad 25^5 + 31^3 + 46^7? \\
& 33^3 + 44^4 + 55^5? \quad 65 + \frac{8}{10} + 17^9 + 1^3? \\
& 123^5 + 149^5? \quad 103^6 + 48^3 + 73^1? \\
& 144^3 + 93^7 + \frac{9}{10} + 100? \quad 648^3 + 102^3? \\
7^6 + 6^4 + 5^3 + 11^1 = \text{what?} & \quad 3^1 + 2^1 + 1^1? \quad 1^9 + 5^7 + 8? \\
& 4^2 + 2^4 + 8^3? \quad 6^1 + 7^4 + 8^1? \\
& 8^3 + 12^2 + 15^3? \quad 9^2 + 9^2 + 10^2? \\
& 7^2 + 13^2 + 14 + \frac{10}{35}? \quad 19^7 + 20^3? \\
43^2 + 78^3 + 128^3 = \text{what?} & \quad 128^3 + 386 + 5^5 + \frac{20}{21}? \\
& 347^1 + 196^2 + 705^4? \quad 300^2 + 20^2? \\
7^{\frac{1}{2}} + 7^{\frac{1}{2}} + 7^{\frac{1}{2}} = \text{what?} & \quad 8^{\frac{3}{4}} + 8^{\frac{3}{4}} + 8^{\frac{3}{4}}? \quad 9^{\frac{2}{3}} + 9^{\frac{2}{3}} + 9^{\frac{2}{3}}? \\
& 125^{\frac{3}{4}} + 17 + \frac{3}{4} + 1^{\frac{1}{4}}? \quad 300^1 + 3^7 + 1^9? \\
& 38 + 46 + \frac{7}{8} + \frac{7}{8}? \quad 23^4 + 46 + 17? \quad 18 + \frac{1}{2}? \\
& 1^{\frac{1}{2}} + 1^{\frac{1}{2}} + 1 + \frac{1}{2} + \frac{1}{2} + 1? \quad 30^{\frac{3}{4}} + 20 + \frac{1}{4} + 10?
\end{aligned}$$

 PESTALLOZZI IN AMERICA.

WE propose to show, in this article, something of the working of the Methods of Pestalozzi, or the Objective Methods, in this country. In an article, written for a daily journal, we have shown what the system is doing in other States, and urged the introduction of these methods in all our primary schools in this State. We believe the paramount duty of all teachers at this moment to be—an earnest effort to establish those principles and methods in all the primary schools of our State, as soon as it can be done, *under trained teachers*. The teachers must be trained in the practice and model rooms of the State Normal and Training School. There should be, in the building erected for that purpose, a sufficient number of those rooms to accommodate all the grades of primary classes, so that pupils of the advanced classes in the Normal and Training School may, each one, teach every grade, more or less, while connected with the school. Those rooms should have a permanent head superintendent; and a permanent assistant for each room, and pupils, detailed to teach, should teach under their constant criticism. We purpose to devote a future article to “Normal School Work”—and in it show more fully what is the true purpose of a Normal School. We understand, well enough, what the arguments are against the so-called “Objective Methods.” We expect to meet with them all the time. Our only anxiety is to know if the principles and methods are *true*. If they can be shown to be true, rational, natural,

philosophical, we shall not hesitate to labor for their advent and establishment. We suppose that experience in the school-room will be admitted to be as good test of a principle or method as can be adopted. We will take that test. Then perhaps we shall not be charged—by everybody, at least—with “running wild after new methods,” with being an enthusiast, without ballast, &c., &c. These principles and methods have been in successful practice in the schools of Switzerland more than fifty years. But those schools are too far away, and they were in too crude a state, to afford convincing proof to people in our midst to-day, perhaps. They were so eminently good, practical and successful, however, as to excite the attention of both English and American travelers, and the principles and methods which were the soul of them, were imported to England, and have been in successful operation, and been exerting a reforming influence there for more than thirty years, in the Home and Colonial School, London. This school and those similar to it, of which it is the parent, have done more for true primary education than all other schools of England. In our own country, there has been no thorough test of these methods, except at Oswego, New York, and in schools which have been taught by graduates of that school. As this school is sufficiently near home to claim our interest and attention, and to also verify our statements, we can refer to its history and experience with some hope of obtaining a respectful hearing.

This school has had an experience of about ten years in these methods. They were introduced from the London School, by importing a trained teacher, because a previous experience of many years had shown conclusively that the methods would not be successful when copied from books and used by a teacher untrained in any school. We well know that many claim to use the “Object System,” and insist upon its being nothing new; that they and every good teacher uses it more or less. Well, we are not disposed to dispute that they use something of that kind, but we do dispute emphatically that the system is used as a system, and applied to every branch of primary instruction, as it should be, undoubtedly. And using it piece-meal, and according to any one’s individual notions, without system or form or regularity, is much like being a scientist, and standing aloof from all scientific bodies, from all organization and union—like being a Christian, and standing apart from all church relations—because one can do just as well alone as in union and sympathy with others. Well—perhaps so—only we don’t think so. We repeat—if these principles and methods are true, rational, philosophical and according to natural development, we think they should be adopted in all our primary classes, *in full*. Why not? They should be made the basis of training in every model and practicing class, in every State Normal and Training School in the country. These schools should furnish the trained teachers for all our primary schools throughout the State. These

principles and methods cannot be introduced and carried out successfully by teachers who have had no training in them, and have very little true knowledge of them, who do not more than half-believe in them. We may as well expect to make a soldier of one who does not believe it his duty to fight—or who does not believe he is fighting for truth, right and justice. It is not “running wild after new notions,” to adopt methods that have been proved eminently valuable after an experience of ten years. Such an experience ought to be worth something;—such names as William Russell, President Hill, Prof. Green, B. G. Northrup, Horace Mann, and many others of the best educators in the country, ought to have some weight upon a subject of this kind. The Normal and Training School of Oswego is doing the best work for primary education in the United States. This is not an individual opinion. We can refer to many names of prominent men holding a similar opinion, whose printed testimony is before* the public. The success of that school is remarkable. It has become within a few years the largest school in the State. Its success has resulted from the use of these methods mainly. It has passed through its dark days, through all the objections that can be brought against the methods, through envy, jealousy, passion, and come out clear, and in honor. Five or six schools have been started since it began—on the same basis—to be taught by its* graduates—to advocate and extend these same principles and methods. More than half a million of dollars have been spent to further their interests, and still more is to be spent the following year, and yet *we question* their value; we hesitate to adopt them. It is time we looked into the face of these methods honestly and earnestly. We give an extract from a letter of E. A. Sheldon, President of the Oswego School, which will still further show the progress of the work:

[Extract from a letter received from E. A. Sheldon, Esq., Superintendent of Oswego Normal and Training School.]

OSWEGO, February 28, 1870.

* * * * * “You will see by the report I send you what is the organization and classification of our school. From this you will see that the *whole of the last term* is spent by the pupils in teaching, under criticism—two weeks, five days in a week, and five hours a day. They also have two daily recitations in methods throughout the whole of this term.

“The term next to the last is wholly spent in a discussion of *principles and methods*, and this is the *hardest worked* of all the classes in the school. This makes one year devoted exclusively to strictly professional training. All the subjects must be thoroughly mastered before entering upon this last year’s course. We regard this, by far, the *most important* work of the school. I can recommend no better plan, and should be satisfied with

nothing short of this. I send you such papers as I have on the subject of 'Object Teaching.' I send also three valuable English books, which discuss the philosophy of these methods (Those used in Oswego Normal and Training School). I know of nothing better on the subject. These methods are taught in the following State Normal and Training Schools, by *graduates from our own school*:

"Winona, St. Cloud, Mankato, Minn.; Indianapolis, Terre Haute, Ind.; Leavenworth, Kansas; Davenport, Iowa; Blue Island (Cook county), Aurora, Chicago, Ill.; Cincinnati, Ohio; State Normal, Mich.

"Also in the following private Normal schools:

"Boston, Cambridge, Worcester, Northampton, Framingham, Westfield, Salem, Springfield, Mass.; Castleton, Vt.; Lewiston, Me.; New York City, Buffalo, Albany, Genessee, Fredonia, Brockport, Cortland, Potsdam, N. Y.; Trenton, N. J.; White-water, Wis.

"The four schools in New York—at Fredonia, Potsdam, Brockport, Cortland—have been established within the last two years, at a cost of not less than \$400,000, and have all adopted our course of instruction and plan of organization, and methods of teaching, throughout; and the teachers of methods in these schools are all graduates of our own school, unless it be the one Brockport school; but they also have one of our pupils, and have for some months past been seeking another. * * * The Principal of the new State Normal School at Terre Haute, Ind., is earnestly seeking to obtain some of our teachers. He is fully in sympathy with us, and will doubtless adopt our methods throughout in his school as fast as he is able to do so. He has written to us for three teachers. He may find difficulty in securing all he wants, for the demand for these teachers is far beyond our ability to supply. He introduced these methods into his school at Aurora, Ill., (with teachers whom we sent him) which is said to have been the best school in that State. The State Superintendent so speaks of it in his annual report. He is very enthusiastic in his praise of it. The building at Terre Haute is said to be the finest in the whole country. When completed it will have cost \$200,000 to \$300,000. The Second State Normal School of Minnesota wrote to us for teachers, but we could not send them. I enclose an extract from a letter of Miss Lee, Preceptress of the Winona school, which will give you some idea of what is being done in that State. Miss Lee was a graduate of our second class. She has a salary of \$1,500. They have been compelled to pay her this in order to keep her.

"These principles and methods are fast finding their way into all the old Normal schools, while all the new ones, established since our own, have adopted them. The Framingham, Mass., State Normal School sent one of their teachers here last term, who spent some weeks in making herself acquainted with them.

The Westfield, Mass., State Normal School teaches essentially on the same plan; and I think the Salem, Mass., State Normal School is strongly in sympathy with us, and is introducing the objective methods. A graduate of our last class has just gone to Castleton, Vt., as a teacher of methods. This school has just opened. The principal was with us several days. The Michigan State Normal School, and in fact, I think nearly all, *claim* to teach the objective methods. They have just opened a Training School at Cambridge, Mass., and a graduate of the Boston school has charge of it. They are just opening a city Normal Training School in New York city, on a grand scale. The President and Vice President paid us a visit last week. I have just received a letter from Mrs. S. in which she says they have examined over 1,200 candidates for the school. They wish to introduce our methods, and have written to us for teachers. You see the work is going on gloriously. Our school has become the largest in the State, and grows steadily in strength from year to year. All the new schools work with us heart and hand. Two more will be organized within a year."

[Extract from Miss Mary V. Lee's Letter of July 6, 1869.]

"I feel that all who have been connected with the school [the Oswego Normal and Training School], either as pupils or teachers, have reason to rejoice in the rapid adoption of its principles and methods. It shows that the great mass of educators were ripe for something better than they had known.

"The Training School at Davenport, Iowa, with which I was connected when first leaving Oswego, continues to send out a yearly class of thoroughly drilled teachers.

"The Minnesota State Normal School at Winona, from the very first has had no teachers who were not drilled either in Oswego or in schools conducted by Oswego graduates. The Principal, Prof. Phelps, would hardly engage others. The graduates of this school, about seventy in number, are well imbued with the Pestalozzian spirit; and their almost universal success as teachers proves them masters of their art. Some of the finest graded schools in the State of Minnesota are furnished almost entirely with our graduates.

"The Third Normal School of the State, located at St. Cloud, opens next [last] September. Three ladies who have completed the Winona Training course, have been employed there.

"I think it is but just to say that the Pestalozzian methods are being adopted all over Minnesota with astonishing rapidity. There is every reason for thanking God and taking courage."

If the above statements do not convince any and every one of the importance of these principles and methods of teaching, and of their eminent success when introduced and properly carried out, we respectfully ask what will convince. Can any stronger argument be offered for any methods? Is it to be supposed that

the educational men interested in all these schools, who have just expended more than one million of dollars upon them, are infatuated and carried away by any false doctrine, new notion, or meteor light? Is the ten years experience, with a constantly increasing faith and widening influence, of the Oswego school, of no value? The teachers of these methods—graduates of the State Normal and Training School of Oswego—are receiving salaries from \$1,000 to \$1,800, and the demand for them at those salaries cannot be supplied. "We have repeated orders which we cannot fill." The buildings erected for all the new schools are first-class, and cost not less than from \$75,000 to \$100,000. The building at Winona is said to have cost \$200,000, and the one at Buffalo will cost about the same. The one at Terre Haute will cost \$250,000 probably. The plan for the building at Winona has been copied by several States. It was planned and erected under the constant supervision of Prof. Phelps, the Principal, and formerly Principal of the New Jersey State Normal School, and their Normal Board manifested a laudable pride in it, from the fact that New York and Illinois could find nothing so good.

C.

SHOULD TEACHERS STUDY LATIN.

In the *TEACHER* for March is an article from the pen of our ever wakeful friend, A. F. Hill, which has given rise to the thoughts presented below. It is a fact not to be denied, that the great majority of our people are ignorant of the meaning of words, phrases and symbols, which from common use have become a part of our language; this ignorance arising principally from want of access to the means of knowledge. This, therefore, the faithful teacher must remedy, as far as possible, by imparting to the children under his care a thorough critical knowledge of their own language. Not only should every child be taught the definitions of words but also their derivations; he should be so taught that he can distinguish words of Saxon origin from those of classical derivation as readily as he can spell them when pronounced; and if there is any difference between the original significations and those attached to them in English, this difference, with its cause, should be distinctly impressed upon him. Thus he will be trained to a thorough knowledge of his own language, and after obtaining this he can, if so disposed, pass intelligently to the study of other tongues. By the exercise of a little ingenuity a teacher may form numberless exercises by means of which this will be a source of unfailling delight to himself and his pupils. The only materials required are a spelling book, a dictionary, and originality on the part of the teacher. To impart this knowledge properly, however, requires an intimate acquaintance with the English language and some knowl-

edge of its originals, both of which, it is to be feared, many teachers sadly lack. Again, matters of general interest are constantly brought up in the school-room, as for example, the abbreviations mentioned in last month's *TEACHER*. No pupil should leave the district school without knowing the origin and use of these, and teachers find exercises upon these and kindred subjects most useful in breaking the monotony of recitation and exciting the interest of pupils and parents. If, however, the teacher has no knowledge of the languages, he should use great care lest his exercise may bring himself to shame. Pupils are quick to detect, and no less quick to improve the confusion of a teacher, and they persistently improve any advantage gained. For instance, the abbreviation U. C. is given to a class, who report as its definition, "The founding of the city," and also that it is the translation of *Urbs Condita*. They have also found another A. U. C.—*Ab Urbe Condita*—and some one asks why there are two so nearly the same. The teacher explains that U. C. is only a still further abbreviation of A. U. C., meaning "From the building of the city," said city being Rome, and the "Year of Rome" being the historical era from which the Romans computed time; thus, they said A. U. C. *Annus* 94, in much the same sense in which we say, "Of the Independence of the U. S. the 94th." Again the pupil's mind outstrips his teacher's explanation; but to make assurance doubly sure he asks, "Which word means city?" and is again informed that *urbe* means city, and *condita* founded or established. Not yet satisfied, he asks, "What part of speech is *condita*?" If you are unacquainted with the Latin you would answer "from the conditions of the question," "A participle." "Why is it placed after the noun?" persists the young seeker after truth. The teacher (yourself, my doubting friend) says that he supposes the Romans used it thus. Did they always use it thus? says the pupil, and here the discomfited teacher is obliged either to answer at hazard or to confess his ignorance; and in either case the pupils retire with the impression that one of their number has "questioned the teacher down," and the benefit of the exercise is lost. Again, he will be questioned concerning the meaning of M. D., L. L. D., and kindred terms, the principal trouble being the position of the words. With a slight knowledge of the Latin, this construction can be easily explained; without it, the teacher must fail to satisfy the expectations of his pupils. Similar remarks may be made respecting the names of studies—as Geography, Rhetoric, Geometry, &c. In many other cases, every faithful teacher must find a knowledge of the original tongues necessary to the full discharge of his duties. Some teachers object that they have not the time necessary to acquire a knowledge of these languages, and others, with strange inconsistency say, (as did one to the writer not long since) that they are not expected to know everything. Never was a greater mistake made than the last. Teach-

ers are expected, by the pupils at least, to know everything about the subjects they attempt to teach; and the moment that a teacher fails to explain a subject fully to his pupils, in that moment he loses a portion of their respect and confidence; therefore, if a knowledge of the Greek, Latin or Saxon languages is required to enable a teacher to explain subjects of general interest to his (or her) pupils, it is obviously his duty and interest to acquaint himself with them; besides this, a person who is unwilling to labor to obtain a high position in the profession, deserves no place whatever in it. Nor is much time required. A knowledge of the principles of Latin or Greek can be obtained by studying a half hour daily for a year, and this once gained, the path is easy. Certainly we cannot in that time read the classic works of Cicero or Livy; the ravings of Medea, or the philosophy of Socrates; but we can acquire a knowledge which will be of lasting benefit to ourselves and others. If members of other professions are required to possess such a knowledge, surely we should not be found wanting in it, being members of a profession second only to the ministerial in importance, and superior even to that in the access it gives us to the young. Many Normal Schools already recognize this fact, Oswego and its scion Brockport, nobly leading the way—let us hope that through the influence of their trained teachers, the day will soon come when our profession will no longer deny the necessity of a knowledge of the languages by its members.

A. S. J.

 REPORT OF PUBLIC SCHOOLS.

 ROLL OF HONOR.

NORTH SAN JUAN GRAMMAR SCHOOL. *Nevada County.* G. W. Stoddard, Teacher. Term ending March 11th, 1870.

Masters Oscar E. Hill, Thomas Evans, and Willie H. Chapman.

Misses Lizzie Banks, Kate Downey, Mary Banks, Edith White, Emma Angier, Olive White, and Gracie Hesseltine.

MOHAWK DISTRICT, *Plumas County.* James A. Ford, Teacher. For the Term commencing Sept. 27th, 1869, and ending Feb'y 16th, 1870. For unexceptionable deportment, Annie Smith. For good deportment, regular attendance and marked improvement, Eliza Hurley, Benjamin F. Hurley, Willard P. Sutton, John B. Sutton, Florence Woodward, Alice Woodward, Frank Woodward, and Annie Smith. For extraordinarily rapid improvement, Demetra Cortes. For good deportment, William Penman, John Penman, Martha Penman, Lydia Penman, Mary Penman, Belle Penman, Ella Penman, Chas. Smith, and Fannie Woodward.

ROCKLIN PUBLIC SCHOOL. *Placer County.* James R. Wilkins,

Teacher. Term ending February 11th, 1870. *First Grade.* For highest standing in classes: Misses Ida Kelly, Emma Hawes, Addie Crosby, and Emie Smith. Masters Albert Kinkade, Henry Rogers, and Frank Crosby. For unexceptional deportment: Misses Sallie Ryan, Ellen Ryan, Isabel Smith, and Laura Smith; Masters Charles Butterfield, and Thomas Carlton. *Primary Department.* M. Francis Wixon, Teacher. Misses Lillie Madden, Ida Buzzell, Mary Freeman, Jockie Butterfield, Elizabeth Royal, and Martha Carlton; Masters Willie Logan, John Frost, John Jones, Freddy Jones, Thos. Hickey, Chas. Connor, Jos. West, Lee Butterfield, Washington Madden, and John Kinkade.

AN OBJECT LESSON.—“One day [in Pestalozzi’s school] the master having presented to his class the engraving of a ladder, a lively little boy exclaimed, ‘but there is a real ladder in the court-yard; why not talk about it rather than the picture!’ ‘The engraving is here,’ said the master, ‘and it is more convenient to talk about what is before your eyes than to go into the court-yard to talk about the other.’ The boy’s observation, thus eluded, was for that time disregarded. Soon after, the engraving of a window formed the subject of examination; ‘but why,’ exclaimed the same little objector, ‘why talk of this picture of a window, when there is a real window in the room, and there is no need to go into the court-yard for it?’ Again the remark was silenced, but in the evening both circumstances were mentioned to Pestalozzi. ‘The boy is right,’ said he, ‘the reality is better than the counterfeit; put away the engravings, and let the class be instructed by means of real objects.’”

ADDITIONAL LIGHT ON AN INTERESTING ASTRONOMICAL QUESTION.—Sir W. Herschel once asserted, that, just as a person traveling through a wood observes the trees in front of him to be opening out, while those left behind seem to be gradually closing in, so if the solar system is advancing through space, a like phenomenon would be observed among the stars. A recent paper, read before the Royal Society in Great Britain, claims that further observation has confirmed this supposition, and that our system is rushing through space with enormous velocity toward a certain point in the constellation Hercules. The rate of motion is estimated to be about 150,000,000 miles per annum.

HITHERTO no Jews have been admitted to any Austrian University as professors. This prohibition has now been removed, and the first Jewish professor has been appointed in the person of Dr. Mauthner, who has obtained the Chair of Ophthalmic Surgery in the University of Innsbruck.

EDITORS' DEPARTMENT.

REVOCATION OF CERTIFICATES.

WHILE matter and mode; who are to be taught; the time they are to be taught; and many other fruitful topics have been discussed by teachers themselves, and others who have an inclination to pedagogical pursuits, if not actual participation therein, legislators, too, have stepped in to assist in the grand enterprise of making a nation of educated men and women. Of all that has been done by this class of our fellow-citizens, we do not intend to speak. One point only demands a remark, because it has a significance from its extraordinary character, and from the abuse or irregular use of a power granted—we mean the REVOCATION OF CERTIFICATES. The Legislature of California grants to the State Board of Examination and also to County Boards of Examination, the power to revoke Certificates for “immoral or unprofessional conduct.” This is a power that involves a great deal. It is the severest punishment the profession can inflict upon one of its members, and certainly none could wish its severity greater, involving, as it does, the reputation and often the means of support of the offender (or *offendress*). So far as we know, it is a power that exists by legal enactment in no other branch of business, guild, or profession. The teacher’s teaching is his *business*, the whereby he earns, and hopes to get, his daily bread; the body of teachers constitutes the *guild* to which he belongs; and again, teaching is the profession of his choice (or his necessity). Now, when a blacksmith, carpenter, or merchant is guilty of “immoral or unprofessional conduct”—(by the way, what would it be in any one of the three departments mentioned?) have his fellow blacksmiths, carpenters or merchants—as the case may be—a legal right to meet in solemn conclave and pass sentence, that he has no right to shoe horses, work in wood, or measure tape? When a lawyer, or a doctor, or a prestidigitateur is guilty of “immoral or unprofessional conduct”—(again, what would “immoral or unprofessional conduct” be in any one of these three departments of human industry?) have his fellow lawyers, doctors, or prestidigitateurs the legal right to say: He shall not plead at the bar of justice, bring soothing and help to the bed of sickness, or amusement and

amazement to the hungry minds of the multitude? But when the teacher steps aside from the path of morality, or descends from the plane of professional conduct, his fellow pedagogues have, by legislative enactment, the right to meet to try him, and condemn him, and to pass sentence: Thou art immoral and unprofessional, and art no longer—if thou ever wert—worthy to teach the young idea how to shoot; go hence and *keep sinning*, and never defile by thy immoral and unprofessional presence our most moral and professional ranks!

Thus you see, gentlemen of Boards of Examination, you have a vast power, the exercise or non-exercise of which is indeed a solemn responsibility. You have a power possessed by men in no other branch of business; and there are reasons patent to all, and therefore it is unnecessary to mention them here, why teachers should be thus empowered. However, this does not alter the facts that it is an extraordinary power, and that it is a great responsibility, and that the exercise of it can only be justified after a fair trial, complete investigation, patient hearing of evidence, and a condemnation of the offender, resulting from no pre-judged or hastily formed opinions of guilt.

We make these remarks because numerous revocations of certificates have taken place in this State, in none of which do we bring the charge of haste, prejudice, impatience, incompleteness or unfairness, but simply state an *informality* which might result in some one or more of these objectionable qualities of a trial, to wit: IN NUMEROUS INSTANCES, THE OFFENDING PARTY WAS NOT SUMMONED TO TRIAL. INDEED, IF THE REPORTS TO THE STATE SUPERINTENDENT'S OFFICE BE CORRECT, THE ACCUSED, IN SEVERAL INSTANCES, KNEW NOTHING OF THE TRIAL UNTIL A NOTICE WAS SERVED THAT CERTIFICATES HAD BEEN REVOKED! This is not our idea of justice, or of the manner of obtaining justice. We therefore suggest that local boards of examination act with more care and regularity in future.



MATTER AND MODE.

WHAT education ought to be acquired, and the manner of getting it—matter and mode—seem to be the problems that have engaged the attention of thinking men, perhaps more than any others, for some years past. Theory-working seems to have fallen into disrepute in school matters as in other departments of

human life. Men, knowing that men can only know facts, demand the facts in regard to teaching. They have ceased to say:—Mind is made up of certain kinds and a certain number of organs, and certain studies,—aggregated into a dull, dry curriculum—develop those organs; and therefore, when a student has gone over a certain amount of given kinds of studies, he must have a certain amount of a certain kind of development. This has been tried too often, and by men who thought in harmony with the mode that they were using, and were enthusiastic in the “leading out” of the pupils’ minds. The pupils, with the utmost facility and *precision*, have answered the questions put to them on examination days, but on leaving the grammar school, the high school, and even the college, have gained all expected to be gained by them—certificates, diplomas, a good name, much praise—the teacher also achieving the last-mentioned, making a “*local reputation* and a name,” gained, we repeat, all, but the main point, namely, the amount and kind of mental development. That is provokingly invisible. Fathers, being a little disappointed with the after-results, have begun to look about them—but as it requires more than a life-time for a father to learn that his own boy is not smart, he dies before realizing that unpleasant fact, and in consequence no good has yet come from the doubt that is forcing its way into their minds. However, the detached instances of this kind, in this mind, that mind, and so on, have accumulated and aggregated into a pretty strong conviction that *something* is unsound in the educational Denmark. They have thought best to leave the theories to the “*eminent educator*” of the land, for institute seasons and lecture occasions, that he may make reputation thereby. Of the latter they care but little, having been taught somewhat of the value of the same. They (the fathers) though having much faith in the division of the human mind into “*organs*,” and also in the theory that those organs should be developed; and still further in the doctrine that certain studies will develop them—yet begin to have, as one would suppose, a reasonable desire to perceive that development. In other words, *they want facts*. They no more desire so much to know what education *can* do, but they wish to see what education is doing for the youth of the land. They begin to suspect that possibly there are some departments of the mind that even the “*eminent educator*” has not explored—some or-

gans that have not been discovered; organs, too, that in some minds with suitable stimulus, would be the most pronounced, and consequently be the chief power; and would therefore assume the place of guide, modifier, chastener and *quickener* of all the other organs. They find no fault with the curriculum or its working up in the school day after day—matter or mode—provided the application of it is made to minds so constituted that it suits them. In other cases, they fear it will be trying to make a land machine run in water, or water machine in air; the medium can not sustain it, and a collapse is the result. What must they do? A few ideas of “Procrustean beds” occur to them, but they are stale and “polarized,” and would either fall from the first cause as an *imbelle telum*, or from the latter create an erroneous impression. Again, we ask, What must be done? They wish to go at the matter *Romano more*, but dislike to interfere with matters arranged with such benevolent intentions, and *that ought to produce such splendid results!* And still more do they dislike to disturb the amiable administrator of such a benevolent system—we mean “ye pedagogue” or “ye eminent educator.” Here, then, is a Rubicon—to go forward or not to go forward—that is the question. What will they do? Cross the Rubicon—go forward or not go forward? Often they adopt the easiest known method of getting rid of a difficult question, to wit: DROP IT! And through fear of wearying ye reader as much as going forward would weary ye “eminent educator,” or ye pedagogue, we, too, will adopt that easy mode, and for the present, drop the subject. Another time, perhaps, we may discuss

THE REMEDY.

“BY WHAT AUTHORITY”

Did W. A. Robertson whip the boy Goldsmith? The authority of a teacher, is no answer; because the relation of teacher and taught does not of itself involve such power. This is seen in by far the greater part of the teaching and learning of life—as instances: Students of law, medicine, or divinity, require no such aids for the completion of their tuitionary course. Then the authority to whip in school is a delegated power, and has, as we can conceive, no possible origin except in one of two sources,

viz: the parent or the State, or perhaps, to put the case more strongly, in the two combined. The teacher, therefore, flogs by virtue of standing in *loco parentis*, or in *loco civitatis*. If the former alone is the origin of his authority, the case that calls forth these remarks—as no injury was done, the skin of the boy not being broken even in a single place, and not an hour having been lost from school—is merely a matter that involves the happiness or misery of a parent; and it is mainly that parent's fault or weakness if it prove to be misery instead of happiness. If it is by virtue of the State that flogging is justified, then vastly much more is involved in the matter. Verily, in this case, we might say, *salutis comunis interest!* And it is in the latter light that we are compelled to view the matter. For if the State educates, that educating and all pertaining thereto are done in its name and by virtue of its power. In private schools, the teacher's power to enforce obedience is evidently limited—if it extends that far—to the extent of the parent's power in the same direction. In ancient times this would have been great, when the parent had the authority to take the life of his child. In modern times he has no such power, and the exact legal limit of his power over his child is not determined. But in the public schools, as intimated above, the teacher derives his power to enforce obedience from the State. What, then, is its limit? The State has the power to take the life of the subject when its safety demands it—even, it is claimed, when its “interest is concerned in it.” Of course, the teacher's power is limited by this power of the State; but no one ever claimed that it went that far. Now, the question is, how far *does* it extend? Since the State claims the right to the entire allegiance of its subject—its body and its ideas; in other words, the State forms an ideal mental and physical man, looks up the exact education necessary to make this ideal, and then forcibly—if he attends the public schools—sets the boy on the path to the ideal. How far, therefore, does the State's agent—the teacher—have the right to use the State's power in pushing the child on towards the ideal man which the State has formed, procured material for the work, and required him to make? This is certainly a grave question, and it is one that we do not propose to attempt to answer. But it is one of such vital importance to schools, to society and to government, that its discussion would seem to demand, on the part of the

press, a spirit of moderation, fairness and truth. The press and people should remember that though the multitude is pleased with the sensation of the hour it must pay for it dearly in the future.

This affair of Mr. Robertson, unfortunately, seems to put the question of—IN WHOM CENTERS THE RIGHT TO EDUCATE, VERY STRONGLY BEFORE THE PUBLIC? The case, briefly stated, stands thus: Mr. Robertson is a gentleman of mild, amiable manners; kind in feeling and obliging to all; so much so, that during the brief stay of fifteen months no man in the School Department has taken stronger hold upon the friendship and esteem of his associates teachers, or more thoroughly gained the good will and respect of the pupils under his charge, to say nothing of an unmistakable appreciation with a large number of the best citizens of the city. He bore a similar character, too, in his native State, as is shown by letters and people from the neighborhood of his birth. Now, such a man as this, doing what it is puerile to suppose he considered aught more than his duty, flogs a boy in a manner that a portion of the press characterizes as "brutal," and for which a Judge, clothed in all the sanctity and solemnity of the ermine, sentences him to "Six months' imprisonment in the County Jail!" Men who have justice in your hearts, either the SYSTEM or the SENTENCE is atrocious! In all candor we speak it—one or the other is a blot on our civilization! We do not propose to speak here of the manner of the Judge in trying the case, which has been severely criticised, but we do say that *such* a sentence on *such* a man, under such circumstances, if there is a legal tribunal in California competent to do so, ought to be totally reversed. And we think, when the justly minded citizens of the city know all the facts in the case, they will, as the teachers of the Department who know the necessities of the schools and the circumstances of this case now do, unanimously say: The sentence should be reversed.

There is certainly some questionable element in that humanity which weeps over the few discolorations of a boy's skin, and apparently exults in taking liberty, reputation and hope, from a good man. We have no sympathy for the puling sentiment which extols a system and clamors for the direst punishment on him who in conscientiously doing his duty, carries out a corollary to that system. The discharge of such a duty is painful—and,

as we have reason to know, is more painful to none than to Mr. Robertson—yet if the State, through its judicial officers, punishes the *man*-criminal with years of hopeless imprisonment, so the State, through its teachers—to prevent so great a calamity in after life—has the right to punish its *boy*-criminal with a correspondingly severe penalty.

Though the punishment in the case under consideration is not by a great deal as severe as the public has been led to believe, and in justice to many good citizens who have condemned Mr. Robertson the truth of the matter should be given. We cannot, of course, state all the details, but the following is sufficient to show how grossly the public has been misled. The whipping was characterized as “terrible,” “brutal,” etc. It was administered with a small rattan; the boy’s skin was not broken in a single place; he lost not an hour from school because of it; and in ten days afterwards scarcely a sign of the whipping remained! Think of such circumstances and *six months’ imprisonment in the County Jail!*

We have purposely abstained from bringing in the character of the boy, or his special offence at the time, though both were proven to be bad, the latter aggravated. Our object not being to show whether Mr. Robertson was guilty of a misdemeanor, but that a far deeper question is involved.



DEPARTMENT OF PUBLIC INSTRUCTION.

STATE BOARD OF EDUCATION.

THE State Board of Education met at the office of the State Superintendent on Wednesday, March 9th, 1870. *Present*—Messrs. Swezey, Trafton, Sibley, Denman, Leadbetter and Fitzgerald.

Life Diplomas were granted to the following teachers on the recommendation of the State Board of Examination: Mrs. P. C. Cook, of San Francisco; Miss Carrie L. Hunt of San Francisco; Samuel H. Jackman, Sacramento; J. G. Johnson, Sonoma.

Moved by Mr. Denman, that “the State Superintendent be

requested to have the School Law so amended as that uniformity of text books shall be required only in the following branches of study, viz: Arithmetic, English Grammar, Reading, Spelling, Geography, History, Physiology." Adopted unanimously.

Moved by Dr. Trafton, that the State Board "recommend that Calisthenics be adopted as a part of the regular daily exercises in all our public schools." Adopted unanimously.

Moved by Mr. Denman, that "the State Board of Education has no legal right to adopt a text book in Drawing." Adopted unanimously.

[It will be seen that the resolution of Mr. Denman with regard to text books leaves out "Penmanship." This of course does not affect the action already taken with regard to Payson, Dunton & Scribner's System and Series.—STATE SUPERINTENDENT.]

◆◆◆◆◆

STATE BOARD OF NORMAL SCHOOL TRUSTEES.

The State Board of Normal School Trustees met at the office of the State Superintendent on Wednesday, March 9th, 1870. Present—Messrs. Swezey, Trafton, Sibley, Denman, Leadbetter and Fitzgerald.

On the recommendation of the Faculty of the State Normal School, State Diplomas were granted to the following pupils, who had successfully compassed the course of study:

Miss Amanda Allison, Santa Cruz Co.,	Miss Loleta Graffelman, Alameda Co.,
" Sarah J. Boyle, San Francisco,	" Mary Emma Greer, San Fran.,
" Alice Burrill, San Francisco,	" Abbie A. Garland, San Francisco,
" Anna A. Gibson, Solano Co.,	" Katie Green, San Francisco,
" Adella Marvin, Santa Clara Co.,	" Annie Haas, Alameda Co.,
" Anna McKean, Santa Clara Co.,	" Mary Jane Henderson, San Fran.,
" Alberta Montgomery, Santa Clara Co.,	Mr. Alvin J. Howe, Solano Co.,
" Ruth Royce, Marin Co.,	Miss Deborah Hardeman, San Fran.,
" Frances Sherman, Contra Costa Co.,	" Isabella Murphy, Solano Co.,
" Helen Stone, Alameda Co.,	" Mary Matthews, San Francisco,
" Alice Snow, Santa Cruz Co.,	" Katie O'Leary, San Francisco,
" Emma Stincoen, Sacramento,	" Rosa Randall, San Francisco,
" Sarah Shuey, Alameda Co.,	" Nellie Savage, Santa Clara Co.,
Mr. Henry I. Tillotson, Solano Co.,	" Georgia Stackpole, San Fran.,
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Miss Joanna T. Carey, Shasta Co.,	" Cynthia Turner, Santa Clara Co.,
" Leonora Carothers, Contra Costa Co.,	" Maggie Sprott, San Francisco,
" Isabella Carruthers, San Franc'o,	Mr. Emmet L. Wemple, Sutter Co.,
Mr. James E. Clark, Washington T'y,	Miss Jessie Wilson, San Francisco,
Mrs. Mary A. Colby, Nevada Co.,	" Marie Withrow, Santa Clara Co.,
Miss Amanda Eastman, San Francisco,	" Edith Wetmore, Contra Costa Co.,
	" Jennie Yates, Sonoma Co.

On motion, "the State Superintendent was requested to have

inserted in the Amended School Law a provision requiring that no female pupil shall be admitted into the State Normal School under sixteen years of age, and no male pupil under seventeen years of age."

On motion of State Superintendent Fitzgerald, "a committee of three was appointed to prepare a plan for the organization of a Training School as an integral part of the State Normal School." Committee: Fitzgerald, Denman and Trafton.

The matter of employing another teacher for the ensuing year was referred to the Executive Committee.

After some other business, not of general interest, the Board adjourned.

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STATE NORMAL SCHOOL ANNIVERSARY.

THE anniversary exercises of the State Normal School took place at Platt's Hall, San Francisco, on the evening of March 10th. The programme was well chosen, and the exercises gave great satisfaction to the intelligent and appreciative audience that crowded every part of the house. We give the readers of THE TEACHER a glance at the programme:

Opening March, by the Band; Prayer, Rev. Dr. Scott; Chant, by the School; Address to Graduates, Senator Pendergast; Essay, with Salutatory, The Artist's Implements, Isabel Caruthers; Essay, The Shady Side of Teaching, Leonora M. Carothers; Song, Hail, Happy Day, by the School; Essay, Mythology, Ancient and Modern, Joanna T. Casey; Essay, Localisms, Abbie A. Garland; Oration, Teachers and Teaching, Henry I. Tillotson; Song, The Gondolier's Evening Song, by the School; Essay, Music and its Votaries, Marie Withrow; Essay, The Seen and the Unseen, Alberta S. Montgomery; Vocal Solo, Ave Maria, Marie Withrow; Essay, Let in the Sunshine, Mary Alice Burrill; Essay, with Valedictory, Another Day, Araminta E. Allison; Address, and Distribution of Certificates, by Dr. Fitzgerald, State Superintendent; Song, "The Maying Party," by the School; Address and Distribution of Diplomas, by Dr. Lucky, Principal of the School; Doxology; Benediction, by Rev. L. Walker.

These are the names of the graduating class, *forty-four* in number:

Araminta E. Allison, Santa Cruz; Bertha A. Bicknell, Santa

Clara; Sarah Jane Boyle, San Francisco; Mary Alice Burrill, San Francisco; Joanna T. Casey, Shasta; Isabel Carruthers, San Francisco; Leonora M. Carothers, Contra Costa; James E. Clark, San Francisco; Mary A. Colby, Nevada; Augusta R. Eastman, San Francisco; Abbie A. Garland, San Francisco; Anna A. Gibson, Solano; Katie Green, San Francisco; Mary L. Greer, San Francisco; Loleta Graffelman, Alameda; Anna E. Haas, Alameda; Deborah W. Hardman, San Francisco; Mary J. Henderson, San Francisco; Alvin J. Howe, Solano; Adella Marvin, Santa Clara; Mary Mathews, San Francisco; Annie M. McKean, San Francisco; Alberta S. Montgomery, Santa Clara; Isabel M. Murphy, Solano; Katy R. O'Leary, San Francisco; Ruth Royce, Marin; Rosa Randall, San Francisco; George A. Stackpole, San Francisco; Nellie Alice Savage, San Francisco; Fannie A. Sherman, Contra Costa; Sarah I. Shuey, Alameda; Alice R. Snow, Santa Cruz; Maggie Sprott, San Francisco; Helen M. Stone, Alameda; Estelle E. Stincen, San Francisco; Annie M. Stockton, Sacramento; Henry I. Tillotson, Emma Tillotson, Solano; Cynthia Turner, Santa Clara; Emmet L. Wemple, Sutter; Jessie E. Wilson, San Francisco; Marie Withrow, Santa Clara; Edith L. Wetmore, Contra Costa; Jennie Yates, Sonoma.

The next term of the State Normal School will commence on the 23d of May.

DECISION.

SAN FRANCISCO, March 14th, 1870.

S. F. AYER, Esq., (in behalf of Trustees of Milpitas School District, Santa Clara county.)

Sir: You enquired in yours of this date, "whether the omission of the word 'Tax' on the ballots cast under Section 98 of our School Law, would justify the Judges of the election in throwing them out in the count."

My decision is, that such omission would *not* invalidate such ballots. Where the intent of the voter is so obvious and unmistakable as in this case, to throw out the ballot would be to nullify the action of a majority, and to sacrifice the spirit of the Law to a petty technicality.

Very respectfully,

O. P. FITZGERALD,
Supt. Public Instruction.

 SAN FRANCISCO INDUSTRIAL SCHOOL.

THE State Superintendent, in his Biennial Report, felt it to be his duty to speak in terms of deserved condemnation of the mismanagement of this Institution under the administration of a former Principal. He spoke not from newspaper accounts, but from actual observation, and therefore knows that his strictures of the former management were just.

Recent visits to the School have discovered such a gratifying improvement that the State Superintendent feels it to be a duty and a pleasure to note the fact. A better principle of government and discipline obtains under Mr. Pelton and his assistants, and the institution is pervaded by a different atmosphere. There is less of the *prison*, and more of the *home* and *school*. The intrinsic difficulty of managing such an institution is great, and these difficulties are in this case enhanced by peculiar circumstances, to which it is unnecessary now to refer. The presence of Mrs. Pelton in the school will be attended with a happy influence—she being just such a lady as you would feel safe in intrusting with any orphaned or neglected child.

 BOOK TABLE.

PRINCIPLES OF DOMESTIC SCIENCE: As applied to the Duties and Pleasures of Home. A Text-Book for the use of Young Ladies in Schools, Seminaries and Colleges. By CATHERINE E. BEECHER and HARMET BEECHER STOWE. New York: J. B. Ford & Co. 1870.

This book is likely to very much disappoint the reader, and yet result, as disappointment very often does, in benefit. It discusses the "much-vexed Woman Question," from a new stand-point:—that of stoves, chimneys, furnaces, good cooking, health, clothing, antidotes, ventilation, nursing the sick, making shoe-bags, and keeping things generally and decently in order about a house. The conclusion is very satisfactorily arrived at, that woman needs a varied knowledge of many things, in many directions, but not an exhaustive one of any. She needs the something-of-everything sort of education, but not the everything-of-something. Again, we have here presented a new study for the curricula in our "Young Ladies' Seminaries:" Woman should be trained for her duties as well as man—an unquestionable truth—and when she is so trained, perhaps "Society" will not be lead by young girls, because the young girls will themselves see that they are not competent to lead something so important *as society ought to be*. With these views, the authoresses do not demand the ballot for their sisters, but they do demand something vastly important to them: a training for their duties in life. This volume will aid in the movement for such training; whether as a text-book or not, can only be determined by the test of successful use in the school-room. Price, \$2.00.

THE BIBLE IN THE PUBLIC SCHOOLS. Arguments in the case of John Minor et al. *versus* The Board of Education of the City of Cincinnati et al.—Superior Court of Cincinnati—with the Opinions and Decisions of the Court. Cincinnati: Robert Clarke & Co. 1870.

This handsome octavo of four hundred and twenty pages is (all) about two resolutions, passed by the Board of Education of Cincinnati. The result of those resolutions was to banish the Bible from the Public Schools. The matter was brought before the Superior Court, and there some of the best legal talent of Ohio discussed "The Bible in the Public Schools." Judges Taft, Storer and Hagans gave opinions—the last named in the minority. The Court nullified the action of the Board. A motion was made for a new trial and overruled. The defendants excepted to the overruling and to the judgment of the Court, and there the matter rested. We certainly would recommend that all school officers and teachers, and those of the general public interested in educational affairs, read this volume. There is in it much of ability and learning brought to bear on one of the most vital of the practical educational questions of the day. Price, \$2.00; sent, prepaid, on receipt thereof.

THE MODEL SPEAKER. Consisting of Exercises in Prose and Poetry. For the use of Schools, Academies and Colleges. By PHILIP LAWRENCE, Professor of Elocution. Philadelphia: Eldredge & Brother. 1870.

No "system of elocution" is exemplified in this work. There are seven pages of brief explanations and hints for those wishing to learn how to utter their thoughts properly—all good. The selections are numerous; in character—good, medium, objectionable, bad—varied in time from Tubal Cain to A. Lincoln, bringing in most of the soul-stirring questions of the day, Women's Suffrage excepted.

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Abou Ben Adhem.	God.	Oration against Catiline.
A Defence of Poetry.	God Everywhere.	Our Defenders.
After the Battle.	Grandeur of the Trackless Sea.	Our Duty to Our Country.
America's Contribution to the World.	Green Apples.	Our Heroes Shall Live.
American Laborers.	Guilt cannot Keep its Own Secret.	Outward Bound.
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Apostrophe to Water.	Hamlet's Soliloquy.	Passing Under the Rod.
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Bernardo Del Carpio.	It Snows.	Rum's Maniac.
Bill and Joe.	Justice to the Whole Country.	Scenes of Childhood.
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Bright Water.	Labor is Worship.	Shamus O'Brien.
Bring Flowers.	Landing of Pilgrim Fathers.	Sheridan's Ride.
Brutus on the Death of Caesar.	Laus Deo.	Shylock to Antonio.
Catiline's Defiance.	Liberty and Union.	Softly Murmur.
Cato's Soliloquy on Immortality.	Lincoln at Springfield.	Sorrow for the Dead.
Chamouny.	Lincoln's Address at Gettysburg.	South Carolina and Massachusetts.
Charge of the Light Brigade.	Lincoln's Second Inaugural Address.	Spartacus to the Gladiators at Capua.
Charity.	Lint.	Speech in Defence of America.
Chills and Fever.	Little Jim.	Speech of Patrick Henry.
Christ in the Tempest.	Look Aloft.	Speech of Sergeant Buzfuz.
Count Candespina's Standard.	Marco Bozzaris.	St. Pierre to Ferrardo.
David's Lament over Absalom.	Milton on the Loss of his Sight.	Strive, Wait and Pray.
Daniel Webster and Henry Clay.	Mount Vernon.	Stuart Holland.
Death of Little Nell.	Mrs. Candler's Lectures:	Supposed Speech of John Adams.
Death of Paul Dombey.	"On Having Been Made a Mason."	Tell Among the Mountains.
Dies Irae.	"On Having Lent £5 to a Friend."	Thanksgiving Day.
Dirge.	"On Shirt Buttons."	The American Flag.
Dirge for a Sailor.	"Urging the Need of Spring Clothing."	The Angels of Buena Vista.
Drifting.	My Mother's Bible.	The Banner of the Cross.
Emmet's Reply.	Napoleon Bonaparte.	The Baron's Last Banquet.
E Pluribus Unum.	New England's Dead.	The Battle.
Esto Perpetua.	Nobility of Labor.	The Battle of Ivry.
Eugene Aram's Dream.	Oh! Why Should the Spirit of Mortal be Proud.	The Battle of Waterloo.
Evangeline.	Old.	The Bells.
Evening Prayer at a Girls' School.	Old Ironsides.	The Bell at Greenwood.
Excelsior.	Old Tubal Cain.	The Bell of Liberty.
Extract from Sermon on the Death of Abraham Lincoln.	Omnipotence of Jehovah.	The Bell of the Atlantic.
Extract from Thanatopsis.		The Best Sewing Machine.
Farm-Yard Song.		The Black Regiment.
Field Lilies.		The Boy and His Angel.
Fitz James and Roderic Dhu.		The Boys.
		The Bridge of Sighs.
		The Bright Side.
		The Bugle Song.

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The Charnel Ship.	The Order of Nature.	Three Words of Strength.
The Children.	The Patriot's Elysium.	Thy Will be Done.
The Common Lot.	The Pauper's Death-Bed.	Trial Scene in the Merchant of Venice.
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The Curse of Regulus.	The Press.	True Eloquence.
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The Drunkard's Daughter.	The Removal.	Voices of the Dead.
The Dying Christian to His Soul.	The Retort.	Warren's Address.
The Famine.	The Romance of Nick Van Stann.	Washington.
The Fireman.	The Sailor Boy's Dream.	Washington and Lincoln.
The Gambler's Wife.	The Sailor's Funeral.	Washington to the Present Generation.
The Glove and the Lion.	The Seminole's Reply.	Wat Tyler's Address to the King.
The Hardest Time of All.	The Seven Ages of Man.	Webster's Plea for Dartmouth College.
The Hour of Prayer.	The Severest Test of Friend- ship.	We'll All Meet Again in the Morning.
The Inquiry.	The Ship of State.	We've All Our Angel Side.
The Isle of Long Ago.	The Sleeping Sentinel.	Where are the Dead?
The Jolly Old Pedagogue.	The Smack in School.	Why Does Your Hair Turn White?
The Knight's Toast.	The Snow of Age.	Wolsey's Address to Crom- well.
The Land of the Blest.	The Soldier's Dream.	Wolsey's Soliloquy after his Downfall.
The Launching of the Ship.	The Soldier's Funeral.	Woman's Influence on Char- acter.
The Leap for Life.	The Song of the Shirt.	Wounded.
The Life Boat.	The South during the Revo- lution.	
The Light at Home.	The Strength of the American Government.	
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History—Quackenbos'.

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English Literature—Shaw's.

Book-Keeping—Payson & Dunton's Double Entry.

General Exercises—Same as in Junior Year.

REGULATIONS OF THE STATE NORMAL SCHOOL.

Adopted by the Board of Normal School Trustees, March 28, 1868.

1. All pupils, on entering the School, are to sign the following declaration of intention:

"We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State."

Male candidates for admission must be at least eighteen years of age; and female applicants at least fifteen years of age; and all must possess a good degree of physical health and vigor.

2. No person whose age exceeds thirty years shall be admitted to the School, except teachers who are fitted to enter the Senior Class.

3. Whenever the number of applicants from any county shall exceed the number to which that county is entitled by law, the applicants shall pass a competitive examination before the County Superintendent, and the County Board of Examination; which examination shall be conducted in the same manner as county examinations for third grade teachers' certificates. The persons passing the highest examination shall be eligible to admission in the order of their standing in examination.

4. All applicants are required to present letters of recommendation, and certificates of good moral character, from the County Superintendent of the county in which they reside.

5. All new applicants shall present themselves for examination at least three days previous to the regular day of each term commencement; and no pupil shall be admitted during term time, except in case of teachers who hold at least second grade State or County certificates.

6. The Principal of the School shall keep a register of the attendance of pupils, and shall report monthly, to the Secretary of the Board, the whole number enrolled, the average number belonging, the average daily attendance, the percentage of daily attendance, and such other statistics as may be required by the Executive Committee of the Board.

7. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

8. The Normal School shall be divided into two classes: Junior and Senior—each divided into two divisions.

GENERAL INFORMATION.

The time for completing the Normal School course is two years, each divided into two terms of five months.

There will be Written Examinations and Public Exercises at the close of each term. The Graduating Exercise will be in May.

Pupils will be required to furnish their Text Books. Books for reference will be furnished by the State. Good boarding can be procured at about twenty-five to thirty dollars per month.

Applicants will please read attentively the "Regulations" as given above, particularly the Fourth and Fifth.

All graduates will be required to pass an examination on the entire course. Those who complete the studies of the Junior Class will be entitled to certificates of qualification, for teaching schools of Second and Third Grade.

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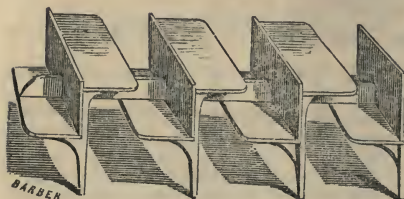
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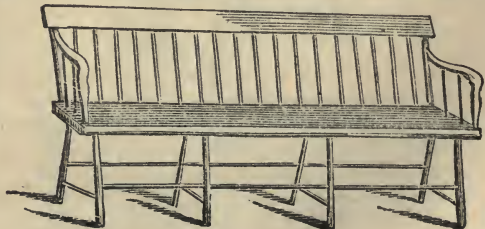
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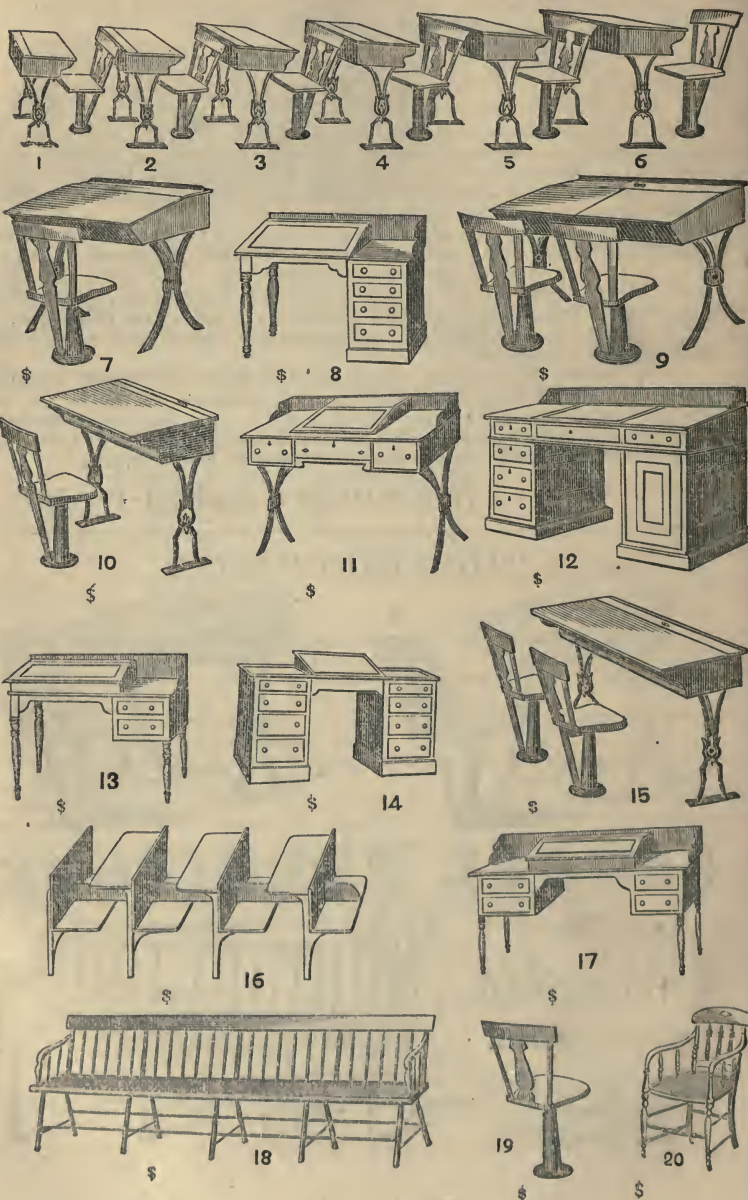
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
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

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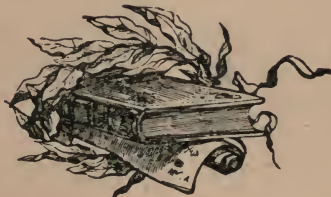
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NORMAL SCHOOL WORK.

IN an article in another journal we have explicitly stated that an academic high school and a normal and training school are two distinct institutions; distinct in purpose, hence distinct, to a large extent, in course of study; distinct in *work*, or should be. We may, perhaps, repeat some of the statements made in that article, but the subject will bear repetition, and as this journal goes to a different class of readers we make the venture. The academic school proposes to extend the range of knowledge beyond what the common school furnishes—to supplement a course in advance of that of the grammar and district schools—to add a story to this humbler structure. The college adds another story, the university still others, and all in the same line of direction—unless there be a divergence in the latter, as there may be. None of these propose to train for special work, until in the university proper we come to the college of law, the college of medicine, etc. Academic schools furnish knowledge as a luxury—something to be enjoyed simply for its own sake—and it carries its own stimulus. If there be those who wish to enter the arena of public action to accomplish a special work, to gain any special glory, to labor for immortality, to write their names on any historic pillar, they must enter a training department, or else train themselves. The strictly academic school does not do this work. The pupil that enters there does not expect it—does not desire it, if he knows its character and knows himself. Unfortunately too many do not get acquainted with themselves until some of the best years of life are wasted. The academic

bookworm feeds upon books as the silkworm feeds upon mulberry leaves—to obtain all the succulent juices—not to furnish silk to the world, but to enjoy the stimulus and the luxury of the living manna. And the teacher gives out the food in abundance to see him grow. He does grow to repletion, weaves his shroud and dies: goes—somewhere—to be trained. The training schools of the world, where the best work is done—the work that tells the story—are not generally connected with the *academus*. They are the dissecting room of the medical student, the mock court of the law student—the theological student unfortunately has none, and the consequence is painfully witnessed everywhere—the office of the engineer, the workshop of the artisan, the counting room of the merchant, the observatory of the astronomer, the *den* of the naturalist. But how, commonly, are young ladies of the academies, and young men too, for that matter, taught such studies as chemistry, geology, mineralogy, botany, astronomy, natural history, philosophy, the higher mathematics? They memorize lessons from text books on those subjects and become acquainted with the subject matter, *really*, long after school life is over—if ever at all, in the training schools of life. Much knowledge can be obtained by close study of books alone, by reading and lectures; and to those who are satisfied with knowing simply—and it is a great satisfaction as there is great enjoyment in simple existence—to those who ask or seek to know more, it is well. But it is evident enough that those who must *do* as well as be—those sealed to labor as well as live—that something else is needed. Academic schools have their peculiar and appointed sphere—they perform their natural work, they fill their place. Training schools have their special work, and no others can properly perform it. Circumstances may arise, conditions may exist which may operate against the successful accomplishment of the legitimate work of a training institution. But this does not, or should not, annihilate the fact of duty, or nullify the obligation to conscientiously do all that can be done in the direction of real technical training. There is one grand difficulty in way of realizing the *ideal* of a training school, and of changing theory into practice. It is a difficulty undoubtedly; the great body of teachers, among them many of our best educators and principals of normal schools in all the States, have constantly pointed at it as a desert from which one should not be expected to bring ripe fruit, and they have almost universally turned aside and gone around it. And the difficulty is this: Want of knowledge prevents all discussion of principles. Wherever a normal school has been started, the fact said to exist is, that the material composing the school is of too low a grade to admit of any intelligent discussion—too great ignorance of subject matter to allow any advance of opinion, any interchange of thought upon methods of teaching or underlying principles. And we readily

admit that little can be said upon any subject when no knowledge of such subject exists. But too much has been made of this objection. We think it has been magnified into an illimitable Sahara. It is not well, perhaps, to specify, but we could name several normal schools where it seems as if almost no discussion of methods is held, no regular daily training or practical teaching and class management, no debate or change of views on plans of education, or course of studies, school economy, organization, government, method of teaching, primary instruction, etc., and the teachers defend themselves on this ground—"Want of knowledge of primary principles precludes all such work. We must first do the work of the common grammar school before any such field can be entered." Hence, we find them doing just this, and next to nothing else. So that normal schools, in these cases, become academic schools under a fictitious title. The policy of establishing normal schools to do precisely the work of a grammar school, may reasonably be questioned. Even if we admit the existence of the fact—the condition of pupils as stated in the objection—still shall we waive the distinctive title of normal and training school, and ignore altogether the peculiar work indicated? We think not; let the distinctive character of a training school be settled in the mind of every teacher, and the special and peculiar work that follows from the premises, then let the principles be embodied in the course of study and be found in the daily programme, and let time be given daily for discussion and for teaching, and if only one pupil can express an opinion before the class, let that one make the beginning, and the teachers do the rest of the talking—the pupils taking notes. Let this be done faithfully every day through the year, at the expense, if it must be of some verbal memorized recitation; let practice classes be formed, and model classes with primary children, and pupil teachers placed in charge at certain hours daily under supervision of experienced *trained* teachers, and time given in the programme for such work, and every pupil be *made* to take his turn teaching *under criticism* daily, and credits allowed as well as for problems in algebra or grammar; let these ideas enter into every training school plan and into every daily programme of instruction; and no longer *assume* that it cannot be done; no longer ignore the work *in toto*. If the material is absolutely so low in grade that no advance class—even of one pupil—can be formed in the outset, still claim the *truth* of the *distinctive character*, and form one as early as possible, working up to it daily. Assume that a normal school is to do preparatory work forever, and the normal school becomes a misnomer, and the school is simply a grammar school. We are aware that these objections are held by good teachers and honestly defended, and were advanced in the Normal School Convention assembled in 1862,⁷ by teachers who still, we believe, are going

on the same line of action, not having been able, in eight years, to form any advance classes for discussion or practice teaching. But we venture to say that this is no valid reason why normal schools should *not* do normal school work, and if there is no distinction between them and other institutions, then it is a grand folly to establish them, at an expense of \$100,000 each, to perform what can be done equally as well by other schools.

♦♦♦

NORMAL TRACT ON COMMON FRACTIONS.

BY BERNHARD MARKS.

5.

a, b, c and *d.* $9\frac{4}{5} - 4\frac{1}{5} = \text{what?}$

OPERATION.

$$\begin{array}{r} 9\frac{4}{5} \\ 4\frac{1}{5} \\ \hline 5\frac{3}{5} \end{array}$$

MENTAL.

$\frac{3}{4} - \frac{1}{4} = \text{what?}$ $\frac{3}{4} - \frac{2}{4}?$ $\frac{3}{4} - \frac{3}{4}?$ $\frac{2}{3} - \frac{1}{3}?$ $\frac{4}{5} - \frac{3}{5}?$ $\frac{4}{5} - \frac{1}{5}?$
 $\frac{5}{6} - \frac{4}{6} = \text{what?}$ $\frac{5}{6} - \frac{2}{6}?$ $\frac{5}{6} - \frac{1}{6}?$ $\frac{5}{6} - \frac{3}{6}?$ $\frac{6}{7} - \frac{5}{7}?$ $\frac{6}{7} - \frac{2}{7}?$
 $\frac{7}{8} - \frac{5}{8} = \text{what?}$ $\frac{7}{8} - \frac{3}{8}?$ $\frac{5}{8} - \frac{5}{8}?$ $\frac{5}{8} - \frac{3}{8}?$ $\frac{8}{9} - \frac{5}{9}?$ $\frac{7}{9} - \frac{3}{9}?$
 $3\frac{1}{2} - \frac{1}{2} = \text{what?}$ $4\frac{2}{3} - \frac{1}{3}?$ $6\frac{5}{7} - \frac{4}{7}?$ $5\frac{3}{5} - \frac{2}{5}?$ $8\frac{7}{8} - \frac{5}{8}?$ $3\frac{3}{4} - \frac{3}{4}?$
 $3\frac{1}{2} - 1 = \text{what?}$ $4\frac{2}{3} - 2?$ $6\frac{5}{7} - 3?$ $5\frac{3}{5} - 4?$ $8\frac{7}{8} - 8?$ $3\frac{3}{4} - 3?$
 $3\frac{1}{2} - 1\frac{1}{2} = \text{what?}$ $3\frac{2}{3} - 1\frac{2}{3}?$ $3\frac{2}{3} - 1\frac{1}{3}?$ $5\frac{3}{4} - 2\frac{1}{4}?$ $6\frac{5}{7} - 3\frac{4}{7}?$
 $5\frac{4}{9} - 4\frac{3}{9} = \text{what?}$ $7\frac{6}{10} - 4\frac{2}{10}?$ $8\frac{5}{8} - 5\frac{3}{8}?$ $10\frac{7}{11} - 4\frac{3}{11}?$ $9\frac{5}{7} - 4\frac{5}{7}?$

WRITTEN.

$\frac{7}{11} - \frac{3}{11} = \text{what?}$ $\frac{10}{12} - \frac{9}{12}?$ $\frac{8}{20} - \frac{3}{20}?$ $\frac{19}{20} - \frac{11}{20}?$ $\frac{17}{20} - \frac{13}{20}?$ $\frac{23}{25} - \frac{18}{25}?$
 $\frac{23}{35} - \frac{17}{35}?$ $\frac{31}{35} - \frac{29}{35}?$ $\frac{31}{35} - \frac{31}{35}?$ $\frac{46}{50} - \frac{27}{50}?$ $\frac{53}{75} - \frac{46}{75}?$
 $13\frac{5}{9} - 4 = \text{what?}$ $13\frac{17}{20} - \frac{11}{20}?$ $14\frac{19}{21} - \frac{12}{21}?$ $8\frac{17}{40} - \frac{13}{40}?$ $21\frac{24}{30} - \frac{24}{30}?$
 $13\frac{5}{8} - 10 = \text{what?}$ $14\frac{7}{9} - 11?$ $21\frac{8}{10} - 13?$ $19\frac{1}{2} - 7?$ $28\frac{7}{12} - 19?$
 $14\frac{5}{8} - 8\frac{3}{8} = \text{what?}$ $19\frac{7}{11} - 10\frac{5}{11}?$ $20\frac{12}{15} - 9\frac{3}{15}?$ $25\frac{7}{13} - 16\frac{5}{13}?$ $28\frac{8}{12} - 18\frac{8}{12}?$
 $48\frac{3}{4} - 47\frac{3}{4}?$ $83\frac{3}{4} - 80\frac{1}{4}?$ $125\frac{2}{3} - 78\frac{1}{3}?$

e, f, and *g.* $5\frac{1}{4} - 3\frac{3}{4} = \text{what?}$

OPERATION.

$$\begin{array}{r} 5\frac{1}{4} \\ 3\frac{3}{4} \\ \hline 1\frac{4}{4} \end{array}$$

MENTAL.

- $1 - \frac{1}{2} = \text{what?}$ $1 - \frac{1}{3}?$ $1 - \frac{2}{3}?$ $1 - \frac{1}{4}?$ $1 - \frac{3}{4}?$ $1 - \frac{1}{5}?$ $1 - \frac{2}{5}?$ $1 - \frac{3}{5}?$
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 $4\frac{1}{3} - 1\frac{2}{3} = \text{what?}$ $5\frac{1}{4} - 3\frac{3}{4}?$ $6\frac{1}{5} - 3\frac{2}{5}?$ $6\frac{1}{5} - 3\frac{3}{5}?$ $6\frac{2}{5} - 3\frac{2}{5}?$ $6\frac{3}{5} - 3\frac{4}{5}?$
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WRITTEN.

- $13 - \frac{4}{7} = \text{what?}$ $18 - \frac{7}{8}?$ $25 - \frac{5}{9}?$ $30 - \frac{1}{10}?$ $30 - \frac{9}{10}?$ $48 - \frac{5}{12}?$ $48 - \frac{7}{12}?$
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 $18\frac{1}{5} - 10\frac{4}{5} = \text{what?}$ $47\frac{2}{3} - 28\frac{2}{3}?$ $50\frac{6}{9} - 49\frac{7}{9}?$ $88\frac{12}{12} - 13\frac{11}{12}?$ $53\frac{1}{3} - 23\frac{2}{3}?$
 $21\frac{1}{4} - 13\frac{3}{4}?$ $38\frac{3}{5} - 27\frac{4}{5}?$ $41\frac{3}{10} - 33\frac{7}{10}?$ $75\frac{1}{10} - 69\frac{9}{10}?$
 $100\frac{1}{8} - 46\frac{3}{8}?$ $125\frac{3}{8} - 111\frac{5}{8}?$ $236\frac{9}{12} - 147\frac{11}{12}?$ $200\frac{7}{13}$
 $- 8\frac{12}{13}?$ $303\frac{7}{20} - 300\frac{19}{20}?$ $346\frac{18}{25} - 173\frac{23}{25}?$ $148\frac{1}{25} - 49\frac{3}{25}?$

6.

a. 2 times $\frac{1}{3} = \text{what?}$

OPERATION AND SOLUTION.

$$\frac{1}{3} \times 2 = \frac{2}{3} \quad [\text{To be read, 2 times } \frac{1}{3}.]$$

MENTAL.

- 2 times $\frac{1}{5} = \text{what?}$ $\frac{2}{5}$ $\frac{1}{6}$ $\frac{2}{6}$ $\frac{3}{6}$ $\frac{4}{6}$ $\frac{2}{7}$ $\frac{3}{8}$ $\frac{5}{9}$
 3 times $\frac{4}{5} = \text{what?}$ $\frac{2}{3}$ $\frac{1}{3}$ $\frac{4}{7}$ $\frac{6}{7}$ $\frac{2}{5}$ $\frac{4}{5}$ $\frac{3}{9}$ $\frac{9}{10}$
 5 times $\frac{1}{3} = \text{what?}$ $\frac{2}{5}$ $\frac{4}{5}$ $\frac{1}{3}$ $\frac{2}{10}$ $\frac{4}{5}$ $\frac{1}{2}$ $\frac{2}{3}$ $\frac{11}{12}$

b. 2 times $\frac{1}{4} = \text{what?}$

OPERATION AND SOLUTION.

$$\frac{1}{4} \times 2 = \frac{1}{2}. \quad (\text{To be read, 2 times } \frac{1}{4}.)$$

MENTAL.

- 2 times $\frac{1}{6} = \text{what?}$ $\frac{3}{8}$ $\frac{5}{8}$ $\frac{7}{10}$ $\frac{5}{12}$ $\frac{9}{12}$ $\frac{13}{20}$ $\frac{1}{2}$
 4 times $\frac{3}{8} = \text{what?}$ $\frac{9}{12}$ $\frac{10}{12}$ $\frac{1}{16}$ $\frac{7}{16}$ $\frac{13}{20}$ $\frac{1}{4}$ $\frac{3}{8}$
 7 times $\frac{5}{7} = \text{what?}$ $\frac{3}{7}$ $\frac{5}{14}$ $\frac{11}{14}$ $\frac{5}{21}$ $\frac{13}{21}$ $\frac{20}{21}$ $\frac{9}{42}$

WRITTEN.

- 5 times $\frac{3}{4} = \text{what?}$ $\frac{3}{5}$ $\frac{4}{5}$ $\frac{3}{7}$ $\frac{4}{7}$ $\frac{5}{7}$ $\frac{7}{10}$ $\frac{8}{11}$ $\frac{9}{12}$
 8 times $\frac{5}{16} = \text{what?}$ $\frac{7}{16}$ $\frac{7}{15}$ $\frac{3}{4}$ $\frac{3}{8}$ $\frac{7}{8}$ $\frac{7}{24}$ $\frac{7}{25}$ $\frac{9}{40}$ $\frac{9}{30}$
 16 times $\frac{5}{7} = \text{what?}$ $\frac{7}{8}$ $\frac{7}{16}$ $\frac{8}{9}$ $\frac{8}{32}$ $\frac{9}{10}$ $\frac{9}{16}$ $\frac{11}{13}$ $\frac{15}{16}$

23 times $\frac{5}{8} =$ what? $\frac{49}{46}$? $\frac{49}{45}$? $\frac{89}{69}$? $\frac{89}{75}$? $\frac{139}{4}$? $\frac{139}{23}$? $\frac{239}{25}$? $\frac{309}{40}$?
 31 times $\frac{6}{9} =$ what? $\frac{39}{30}$? $\frac{39}{31}$? $\frac{99}{40}$? $\frac{99}{62}$? $\frac{159}{18}$? $\frac{159}{93}$? $\frac{279}{93}$? $\frac{389}{50}$?

7.

2 times $2\frac{2}{3} =$ what?

OPERATION.

SOLUTION.

$$\begin{array}{r} 3\frac{2}{3} \\ \underline{2} \\ 1\frac{1}{3} \\ \underline{6} \\ 7\frac{1}{3} \end{array} \quad \left\{ \begin{array}{l} \text{To be read} \\ 2 \text{ times } \frac{2}{3}. \\ 2 \text{ times } 3. \end{array} \right\} \quad \begin{array}{l} \frac{2}{3} \times 2 = \frac{4}{3} = 1\frac{1}{3}. \\ 3 \times 2 = 6 \\ 6 \times 1\frac{1}{3} = 7\frac{1}{3}. \end{array}$$

MENTAL.

2 times $3\frac{1}{3} =$ what? $3\frac{1}{4}$? $5\frac{2}{5}$? $6\frac{2}{7}$? $8\frac{4}{10}$? $2\frac{1}{2}$? $5\frac{1}{2}$?
 3 times $3\frac{1}{3} =$ what? $3\frac{2}{3}$? $4\frac{3}{4}$? $5\frac{2}{5}$? $8\frac{2}{7}$? $7\frac{1}{3}$? $8\frac{1}{4}$?
 2 times $1\frac{1}{2} =$ what? $2\frac{1}{2}$? $3\frac{1}{2}$? $11\frac{1}{2}$? $1\frac{3}{4}$? $12\frac{1}{2}$?
 4 times $1\frac{1}{4} =$ what? $2\frac{1}{4}$? $3\frac{1}{4}$? $5\frac{1}{4}$? $1\frac{3}{4}$? $2\frac{3}{4}$?

WRITTEN.

8 times $9\frac{5}{8} =$ what? $14\frac{6}{7}$? $28\frac{1}{8}$? $43\frac{2}{8}$? $65\frac{4}{10}$?
 16 times $4\frac{1}{4} =$ what? $8\frac{1}{2}$? $15\frac{1}{2}$? $21\frac{1}{4}$? $34\frac{3}{4}$?
 24 times $2\frac{1}{4} =$ what? $5\frac{1}{2}$? $10\frac{3}{4}$? $18\frac{5}{8}$? $24\frac{9}{10}$?
 36 times $20\frac{2}{5} =$ what? $31\frac{2}{5}$? $75\frac{9}{10}$? $120\frac{1}{2}$? $136\frac{2}{5}$?

8

a. $\frac{1}{2}$ of 2 = what?

OPERATION.

SOLUTION.

$$2 \left| \begin{array}{l} 2 \\ \hline 1 \end{array} \right. \left\{ \begin{array}{l} \text{To be read } \frac{1}{2} \text{ of } 2 = 2 \\ \text{divided into 2 equal} \\ \text{parts.} \end{array} \right\} \quad 2 \times \frac{1}{2} = 2 \div 2 = 1$$

MENTAL.

$\frac{1}{2}$ of 6 = what? 8? 12? 10? 16? 20?
 $\frac{1}{4}$ of 8 = what? 12? 4? 16? 36? 20?

WRITTEN.

$\frac{1}{5}$ of 45 = what? 75? 100? 140? 385?
 $\frac{1}{8}$ of 104 = what? 120? 128? 328? 408?

MENTAL.

b. $\frac{1}{2}$ of 3 = what? 5? 7? 9? $\frac{1}{3}$ of 4? 7? 10? 11?
 $\frac{1}{4}$ of 5 = what? 7? 9? 11? $\frac{1}{5}$ of 8? 13? 27? 32?

WRITTEN.

 $\frac{1}{3}$ of 47 = what? 93? 107? 125? 130? $\frac{1}{23}$ of 49 = what? 75? 99? 106? 342?

MENTAL.

c. $\frac{1}{3}$ of 2 = what? (Show how fractions arise from Division.) $\frac{1}{4}$ of 2 = what? 3? $\frac{1}{5}$ of 2? $\frac{1}{5}$ of 3? $\frac{1}{5}$ of 1? $\frac{1}{7}$ of 6 = what? 5? $\frac{1}{8}$ of 5? $\frac{1}{8}$ of 7? $\frac{1}{8}$ of 3? $\frac{1}{13}$ of 11 = what? $\frac{1}{25}$ of 17? $\frac{1}{40}$ of 30?d. $\frac{2}{3}$ of 12 = what?

OPERATION.

SOLUTION.

$$\begin{array}{r}
 3 \overline{)12} \\
 \underline{4} \\
 2 \\
 \underline{8} \\
 4
 \end{array}
 \left\{ \begin{array}{l}
 \text{To be read } \frac{1}{3} \text{ of } 12 = 12 \\
 \text{divided into 3 equal parts,} \\
 \text{To be read, 2 times 4.}
 \end{array} \right\}
 \begin{array}{l}
 12 \times \frac{1}{3} = 12 \div 3 = 4. \\
 12 \times \frac{2}{3} = 4 \times 2 = 8.
 \end{array}$$

MENTAL.

 $\frac{2}{3}$ of 6 = what? 9? 12? 15? 30? 27? 21? $\frac{3}{4}$ of 8 = what? 12? 4? 20? 32? 36? 40? $\frac{1}{5}$ of 10 = what? 5? 20? 40? 35? 55? 25?

WRITTEN.

 $\frac{5}{6}$ of 36 = what? 54? 612? 126? 324? $\frac{7}{9}$ of 81 = what? 108? 189? 279? 900? $\frac{11}{12}$ of 49 = what? 144? 120? 360? 720? $\frac{15}{20}$ of 80 = what? 200? 320? 460? 100? $\frac{21}{36}$ of 72 = what? 144? 432? 864? 4320?

e.

WRITTEN.

 $\frac{2}{3}$ of 20 = what? 25? 29? 37? 41? 100? $\frac{3}{4}$ of 49 = what? 58? 99? 105? 225? 376? $\frac{5}{8}$ of 92 = what? 150? 175? 201? 235? 340? $\frac{17}{25}$ of 99 = what? 130? 165? 188? 243? 503?

f.

MENTAL.

 $\frac{3}{8}$ of 2 = what? $\frac{3}{4}$ of 3? $\frac{3}{4}$ of 2? $\frac{2}{5}$ of 4? $\frac{3}{5}$ of 3? $\frac{5}{6}$ of 4? $\frac{5}{9}$ of 7 = what? $\frac{7}{8}$ of 3? $\frac{5}{8}$ of 1? $\frac{5}{8}$ of 5? $\frac{7}{10}$ of 9? $\frac{7}{10}$ of 7?

WRITTEN.

 $\frac{7}{15}$ of 11 = what? $\frac{19}{20}$ of 13? $\frac{20}{25}$ of 18? $\frac{17}{25}$ of 21? $\frac{3}{30}$ of 25?

CORPORAL PUNISHMENT IN SCHOOLS.

THE question is not whether corporal punishment is lawful or proper; the law, the rules and regulations of the School Department, and the practice under them, have settled the right and the propriety of such punishment in the affirmative; the question is, what is the true rule and limit of punishment, and who is to determine it?

There is not, and cannot be, any invariable written rule, the circumstances, cases and subjects being so variable; it must, therefore, be left to the sound judgment and discretion of the teacher, who must exercise them without fear, malice, prejudice or passion; if, under such circumstances, the child be not permanently disfigured or disabled, no wrong can be imputed to the teacher; but if the child be permanently disabled or disfigured, the true limit of the rule is exceeded, and an offence is committed. Why? Because the law presumes that the natural and legitimate consequences of an act were *intended* by the actor. It will not do to say, in the language of jurists, that the teacher stands in the relation of parent to the child, and may punish to the same extent that a parent, under the same circumstances, might do. The question will still recur, to what extent may a parent punish? To answer—to the same extent that a teacher may punish, is fixing no rule.

The reason of the rule of corporal punishment leads us to the rule itself, viz: to inflict *present* pain on the body, to control the action of the child's mind, is the reason of the rule; now discoloration and ridges on the flesh are inseparable from and a natural consequence of pain thus inflicted on the body; therefore, present pain and passing discoloration and ridges of and on the flesh, in consequence (without permanent injury or disfigurement,) are within, are *the rule itself*, and are no evidence of crime or error; on the contrary, they are *THE RULE*, the natural and to be expected results of the law and the practice of corporal punishment. The best test by which the teacher can govern his action, therefore, is within this rule, to compel the mind of the child to submit to his orders; punishment thereafter would be vindictive and erroneous.

The teacher must, in the first instance, be judge of the sufficiency or insufficiency of the chastisement, as well as inflict it, and no pupil should be permitted to defy the rules of the school, or orders of the teacher, if within the rules above he can be subjected thereto; the pupil's present feelings and convenience must give way to secure the discipline and good order of the school and the future well-being of himself and society.

This, then, is the true rule, limit and measure of punishment, to-wit: When the child, having the ability so to do, yields obedience to the requirements of the teacher and the rules of

the school, irrespective of present pain or appearances, so there be no permanent disability or disfigurement in consequence, the teacher to act without fear, malice, prejudice or passion.

This is the rule and "righteous limitation of the Act," and the reason of the rule has made it *law*, and established its practice.

LEO.

THE CHILDREN'S HEALTH.

BY K. N. OWLTON.

I HAVE spent thirty years with children. Fifteen among them, in their benches, and fifteen in front of them, behind the desk. Children of the far north-east, of the north, of the Mississippi Valley, of the south and of the south-west have been my play-mates and my pupils. From summer to winter, through spring and fall, in rainy season and dry I have watched and studied them with care.

From Tenth Grade, Primary, to Senior Class, High School, they have been my constant companions, always my pupils and often my teachers. In their homes I have played with them,—on their holiday excursions I have romped with them,—through thousands of tough lessons I have guided and helped them,—on many a graduation day I have shared their well-earned pride,—rejoiced with them at their weddings, watched with them in sickness, closed their eyes in death, and wept with their parents at their graves. It has been my business and my happiness to know and love them well, and none can charge me with presumption when I claim as much.

And because I love them thus I try to write of some things concerning them which all good parents *know*, but which few appear sufficiently to heed.

Usually having charge of large numbers of boys and girls, I have repeatedly seen weak constitutions built up into strong ones and strong ones torn down into weak ones by the simple observance or the non-observance of the thousand little daily and hourly influences constantly working in the home and in the school.

The food, the drink, the clothes, the work, the play, the baths, the sleep, the air, the light and especially the blessed *sunshine*, which the child gets or does *not* get, may build up within him a surplus of vital power, which will bear him safely through all sharp and sudden shocks of ordinary sickness, or may keep him constantly run down to the lowest ebb of vital power when the slightest accident or the most trifling sickness may result in death.

A short vacation now and then cannot take the place of the

little five-or-ten-hour vacation twice or thrice a week, or the five-or-ten-minute vacations in every day, nay, almost every hour, which the large-brained, quick-nerved, active, playful, growing child habitually and urgently needs. And the larger the brain, the quicker the nerve, the more imperatively necessary does this frequent vacation become.

Looking back through my own pupil days, and reviewing the history of many of the brightest lads and misses I have known through teaching-years, I cannot help seeing that, in nearly every case, their own tendency, or that of their parents—in many cases both—was to slight the body and exalt the brain, to draw upon the brain-power and keep straining at the nerve fibers as if they could never faint or fail.

I have had, and often do have, to actually *drive* children—the older ones especially, from twelve to sixteen years of age—into the open air and the sunshine and compel them to exercise the body and the limbs. They think it sounds “so nice,” to be called “a young student,” “a regular book-worm,” “remarkably fond of study,” “promising to make such a wonderful scholar,” and to hear the scores of variations played on these and kindred themes by fond and foolish parents who make themselves unwitting accessories to the early murder of their own offspring.

Does this sound too strong? Read this, and remember that it is but one leaf from a teacher's diary.

Only a few weeks since I stood by the dead body of one of my own pupils, while her weeping parents ascribed her death to over-work at school. Beside the dead girl lay her bible. Picking it up and glancing at the fly-leaf I read that she had lately received that bible from her Sunday School, for *committing to memory and reciting two thousand verses in succession!!* And I also learned that she was taking two music lessons a week, practicing an hour a day, and trying to stand above ninety per cent. in her class at school, during the same time!!

Poor child! poor innocent! poor *victim!* I thought; no wonder your poor, young life went out under such a throng of labors, any one of which would have been weight enough for such a nervous, sensitive, delicate organization to attempt to carry. And the simple hearted parents, good christian people, too, sincerely thought and honestly said that her regular day-school duties, in a class averaging two years younger than herself, had greatly hastened, if they had not wholly caused, her untimely death.

Of course, I could not then speak the unwelcome truth they so much needed to hear, but, if this does not meet their eyes, they will soon hear from me in earnest and kindly pleading for the life of a younger sister yet remaining.

Parents seldom thank God for a loud-voiced, noisy, broad-backed, sturdy-limbed youngster, whose deep chest, keen stomach and big lungs fairly throb with such an overplus of physical

life that all the common diseases of childhood and youth glance off him like pistol balls from iron-clads. Very rarely indeed does one mother congratulate another on the healthiness and the robustness of her sons, or pride herself on the life, fun, dash, romp and drive of her own daughters. And yet these simple qualities are by far the most important things, especially in childhood and early youth.

And here comes in the blame, that, by beginning soon enough and taking pains enough, any father or mother may train any son or daughter into limbs, lungs, back and stomach,—into life, health, dash and drive,—such as those already sketched, and which may be, indeed *will* be, the surest life endowment, the richest life insurance that can possibly be had, whose premium must be paid, not in coin or currency, but in simple, hourly attention to the scores of little healthful things that may be done, as well as the dozens of hurtful things that must *not* be done.

The plain fact is that "health is a duty," and that, in nine cases out of ten, "sickness is sin," and the conclusion of the matter is this: children *can* have and *must* have physical health, first of all. If they fail to inherit it, or, to put it more truthfully, if their parents fail to give it to them, before birth, then have those parents a double obligation to secure an endowment of health for their children, *after* birth. Those parents cannot remain guiltless who neglect those priceless years in which the plastic nature of the child may easily be neglected into weakness, deformity, disease and death, or moulded into strength and beauty and trained for health and length of days.

UGH!—A VULGAR SOUND.

BY A. F. HILL.

HAS the reader ever remarked that there is a disposition among Americans to scatter the short sound of *u* broadcast through their conversation? Such a disposition prevails to an alarming extent. I had never observed how general it was till my attention was directed to it recently by the editor of the *TEACHER*. On giving the subject some thought and making a few observations, I arrived at the fact that the short sound of *u* is substituted for other sounds, by the careless speaker, in words innumerable. The reason probably is that it is the most natural vocal sound and the easiest for the mouth; but this should not excuse the vulgarity. Ugh!

The cases in point are so numerous that I will only undertake to cite a few examples. For instance, "the" is oftener pronounced "thuh" than otherwise. "Is that *thuh* man?" is asked. How few persons give the *the* the sound it is entitled to in such

a case. "Enough" is another example. *Uh-nough* is the horrible disguise in which it drops from the mouths of most mortals. "It is ten *uh*-clock," is remarked instead of "It is ten o'clock." "This *ur* that," is the vulgar expression for "This *or* that." "The *Dec-lur*-ation of *Indepen-dunce*," exclaims the patriotic public speaker, as well as almost every one else, instead of "The Declaration of Independence." It is indeed sad to hear this phrase terminated with so suggestive a syllable as *dunce*.

But I could go on giving examples till I should absorb a great deal more space than I have any right to, and still thousands would remain unnoticed. The reader probably has no idea, to use a common expression, how extensively this barbarism is sown through our pronunciation, till he begins to ruminate on the subject. Nearly all the words I can call to mind, of more than one syllable, which end in *an*, *al*, *ance*, *ad*, *ed*, *ess*, *el*, *en*, *ent*, *em*, *id*, *il*, *it*, *in*, and, in fact, with a hundred other terminations which I have not the space to mention, are thus mispronounced by nearly every body—that is, provided the accent is not on the last syllable.

Here are a few examples which I simply write at random as I think of them:

Natal,	mispronounced	Na- <i>tul</i> ,
Peril,	"	Per- <i>ul</i> ,
Linen,	"	Lin- <i>un</i> ,
Ardent,	"	Ar- <i>dunt</i> ,
Alliance,	"	Alli- <i>unce</i> ,
Jewel,	"	Jew- <i>ul</i> ,
Kitchen,	"	Kitch- <i>un</i> ,
Solid,	"	Sol- <i>ud</i> ,
Existence,	"	Exist- <i>unce</i> ,
Ruin,	"	Ru- <i>un</i> ,
Pitted,	"	Pit- <i>tud</i> ,
Nitrate,	"	Ni- <i>trut</i> ,
Picket,	"	Pick- <i>ut</i> ,
Scotland,	"	Scot- <i>lund</i> ,
Witness,	"	Wit- <i>nuss</i> ,
Windlass,	"	Wind- <i>luss</i> ,
Erin,	"	E- <i>run</i> ,
Studded,	"	Stud- <i>dud</i> ,
Per diem,	"	Per di- <i>um</i> ,
Radiant,	"	Radi- <i>unt</i> .

I could thus go on giving examples of this style of slovenly pronunciation till I should cover scores of pages—if not hundreds. One or two eccentricities are worthy of mention: *Subject* and *object* are nearly always pronounced *subjict* and *objict*, by careless speakers. They also say *cun*-struct, instead of *con*-struct; *cun*-tend, instead of *con*-tend; *cun*-venience, instead of *con*-venience, etc.

On the other hand, such words as *splendid*, *ended*, etc., frequently fall victims to another style of mispronunciation, thus: *splen-deed*, *end-eed*, etc. This is almost as barbarous as the other vulgarity. It is worse in one respect, for it changes the

meaning of some susceptible words. For example, it makes *studded*, *studied*; *pitted*, *pitied*; etc. Hence, in saying that one is *pitted*—as with small-pox—they say he is *pitied*, which he is not always, although he ought to be; and it is remarked, with the same impropriety of orthoepy, that the heavens are *studeed* (*studied*), when *studded*—with stars—is meant.

One who has never given this subject a thought will find it necessary to guard his utterances well, if he wishes to rid himself of this habit of continually mispronouncing words of these classes. The short sound of *u*, *uh*, or *ugh*, seems to be a very easy and natural one to produce with the mouth; it has slyly crept into our language in places where it is not wanted, as thickly as weeds grow in a neglected garden; and I assure the reader that an effort is necessary to weed it out.

"CORPORAL PUNISHMENT."

THERE is really great need that some genius in school matters solve the problem of "CORPORAL PUNISHMENT IN SCHOOLS." We doubt whether an Institute was ever held in North America in which this subject was not discussed. Some *idealizers* of the profession, on Institute occasions at least, have the model pupil and the model teacher in the model school, from which the rod is banished. When such theories are stated, all feel that something nice has been said, and the less gifted think that in some manner *they* failed to catch the idea clearly enough to make it practical in their own schools; and with the characteristic wisdom of the philosopher of the nineteenth century, conclude to let it pass for the present. Some are too uncharitable in supposing that the theoretic opponents of the rod resort to its assistance in maintaining discipline more frequently than is reported.

Now, it is just barely possible that a school may be located in just such a neighborhood, be composed of just such pupils, and be under the government of just such a teacher, that the rod would be wholly out of place. But most schools are not of that kind—the rod, or something as effective in maintaining discipline, seems to be indispensable. The management of good boys is comparatively an easy task. It is the mode of dealing with the bad boys that should constitute one of the chief chapters in the book that is yet to be written, the "Science of Pedagogics." The *nux pedagorum* is, what shall be done with

those boys who defy authority, whose attitude towards teachers is always unsatisfactory, who seem to be individualized on the basis of opposition to the right?

Until the light of higher genius is thrown on the subject, the law, in cases of this kind, is set forth in the following decision of Judge Lake, in the case of *The People vs. W. A. Robertson*—a decision which reflects honor on the upright and distinguished jurist who pronounced it, and which possesses more than a merely transient interest:

The People vs. W. A. Robertson.—On March 5th, 1870, the defendant was convicted in the Police Court of assault and battery, committed on the person of one John Goldsmith, and on such conviction was adjudged to be imprisoned in the County Jail for the period of six months. From this judgment the defendant appeals.

It is urged as grounds of error: First, that the evidence was insufficient to justify the conviction; and, secondly, that the Police Court did not acquire jurisdiction of the person of the defendant.

The statement, which contains all the evidence given at the trial, discloses the following state of facts:

At the time of the alleged assault, the defendant was a teacher and sub-master in the Lincoln Grammar School. The complaining witness, John Goldsmith, a boy of about fourteen years of age, and evidently of a somewhat insubordinate disposition, was a pupil in one of the classes of that school, under the immediate charge of Mrs. James. On the afternoon of March 3d, at three o'clock, which is the usual hour for closing the schools, several of the boys in Mrs. James's class, Goldsmith among the number, were detained for imperfect recitations. After having been allowed about an hour for study, they were again called upon to recite, and nine, including Goldsmith, again failed. These nine were granted further time, but Goldsmith neglected to apply himself to his lesson and held his book upside down. This fact having been discovered by Mrs. James, she informed him that he could have twenty minutes longer to complete his task, and that if not perfect at the end of that period he would be punished. After the twenty minutes had elapsed he was again requested to recite, again failed, and evinced a firm determination not even to repeat so much as he really knew. Under these circumstances Mrs. James required him to hold out his hand for punishment, and on his reiterated refusal to obey this direction, in the absence of the Principal, Mr. Marks, she turned him over to the defendant, who happened to be present. The defendant directed him to comply with the demand of Mrs. James, and informed him that his obedience would be compelled; and on his positively refusing to submit to

the authority of his teacher, struck him a number of blows on his back, probably twenty or thirty, with an ordinary rattan. After the first blow had been inflicted, Goldsmith was told that by holding out his hand for Mrs. James, further punishment could be stopped, and the moment he submitted, the beating ceased. Black and blue stripes and spots were left on his back which doubtless occasioned pain for several days, but no permanent injury was inflicted. It does not appear that the defendant lost his temper or exhibited malice during the punishment.

These are the substantial facts of the case. The principles and rules of law applicable to those facts are well settled by numerous authorities, and among others the following:

Anderson *vs.* the State, 3 Head (Tennessee) Rts., 455; State of Iowa *vs.* Bitneau, 13 Iowa Rts., 485; Stephenson *vs.* Hall, 14 Barbour (N. Y.), pp. 222, 230; Hathaway *vs.* Rice, 19 Vermont, 108; Commonwealth *vs.* Randall, 4 Gray, (Mass.), 38; Reeves' Domestic Relations, 288, 289.

The question of the expediency or the in expediency of corporal punishment in schools, it is not within the province of this Court to discuss. It is enough to say, that that mode of enforcing discipline has been adopted among civilized nations, and is authorized by law and sanctioned by custom. It is equally unnecessary to refer to or consider the statutes of this State, or the rules and regulations of the Board of Education, although these at least assume the necessity of corporal punishment as one of the means of controlling refractory pupils.

The authorities above cited clearly establish the following propositions:

First—That within reasonable limits, without malice or passion, without proceeding so far as to inflict permanent physical injury, and for the purpose of enforcing obedience or proper discipline, a parent may punish a child.

Second—That a teacher of a school stands in *loco parentis* to his pupil while he is actually under his charge. There is, however, this circumstantial difference between the relation of the parent and the relation of the teacher to the child; that the latter usually has a large number of children under his control, and is not supposed to be restrained in the enforcement of discipline by the same degree of personal affection as the former.

Third—That in cases of corporal punishment by parents or by teachers, the presumption is that they acted without malice or passion, and within the limits of a reasonable discretion; and the burden of proof is upon those who assert the contrary. The question is not whether the punishment in fact was excessive, but whether it was criminally excessive. The parent or teacher acts in a judicial as well as executive capacity, and is no more to be punished for a mere error of judgment than a judge who, in the exercise of his discretion, perhaps inflicts too severe a penalty upon a criminal.

The human mind cannot work judicially without freedom, and two minds are never exactly alike; and to remove the barriers with which the law protects the exercise of discretion, the existence of malice or passion must be affirmatively and clearly proved.

Fourth—That in the absence of passion or malice, neither the parent nor the teacher is criminally responsible for injuries not amounting to permanent disfigurement, or resulting in permanent damage to health. This is but another form of stating the last proposition.

Applying these propositions of law to the facts of this case, the following deductions necessarily result:

First—That Mrs. James had the legal right to detain the boy Goldsmith after the regular hours for dismissing the school had arrived, and to require him, within a reasonable time, to perfect his recitation.

Second—That until dismissed by Mrs. James, he was within her jurisdiction, and *a fortiori* within the jurisdiction of the principal, or in his absence, of the sub-master of the school.

Third—That having been not only negatively but positively disobedient to Mrs. James in both failing and refusing to study his lesson, she had the legal right to require him to hold out his hand for punishment.

Fourth—That on his peremptory and repeated refusal to hold out his hand, Mrs. James had the legal right to call upon the defendant for his assistance in compelling obedience and in enforcing discipline.

Fifth—That the defendant, having thus been lawfully required to interpose, had the legal right, without malice or passion, and without the employment of means calculated to inflict permanent injury, to chastise Goldsmith to the point of submission to the authority of Mrs. James.

It was not a case of punishment for a past offence. The act of disobedience and insubordination was continuous while the punishment was being inflicted. The object of the defendant was only to bring a refractory pupil within the control of the law to which he was amenable, and thus preserve the discipline of the school, and to teach Goldsmith that most important of all lessons—the necessity of controlling his temper and of subjecting his will to properly constituted authority. The instrument used was a small rattan. The defendant seems to have been entirely self-possessed, and wholly free from malice and from passion—and no permanent injuries were inflicted. At any moment it was within the power of Goldsmith to put an end to the flogging, by simply holding out his hand; but he persisted in a struggle for the mastery, and the punishment was necessarily continued until he yielded.

The effect upon the other pupils, and upon the usefulness of

the defendant as a teacher, in case he had allowed this boy to triumph, may be readily imagined.

On the whole case, much as I regret to differ from the Police Judge, whose general administration of the law justly commands the respect of the community, I am of the opinion that the evidence does not justify the conviction; and if the case rested here the defendant would be entitled to a new trial. But the objection to the jurisdiction of the Police Court is fatal.

The grounds for this conclusion will be briefly stated, for the reason that an Act of the Legislature, passed since this cause was tried, has rendered the point inapplicable to future cases.

Under the general statute, Justices' Courts have jurisdiction of certain minor offences, including assault and battery; but by the Act of January 27, 1864, that jurisdiction within the city and county of San Francisco is exclusively invested in the Police Court. (1 Hittell's General Laws, pp. 218, 323.)

The fifth part of the Criminal Practice Act prescribes the manner in which criminal proceedings in Justices', Recorders' and Mayors' Courts are to be commenced and conducted. The steps required are: First, a complaint; second, an examination of the prosecutor on oath; and third, the issuance of a warrant *returnable before the officer by whom it is issued*. There is no provision for the transfer of the cause to another Justice, except where a fair and impartial trial cannot be had before the Court where the proceeding was instituted. (1 Hittell, p. 310.) In this case the complaint was entertained by a Justice of the Peace, who issued a warrant with his endorsement to the effect that by reason of his inability to hear and try the cause, he transferred it to the Police Court. Under this warrant the defendant was arrested, taken before the Police Court, was there required to plead, was tried, and convicted.

The conviction cannot stand. The Justice had no jurisdiction over the subject matter of the complaint, and no power to issue or transfer the warrant, and the Police Court acquired no jurisdiction by the transfer. The error being jurisdictional was not cured by the appearance and answer of the defendant.

Doubtless the Justice acted under Part 4, Title 3, Chapter 2, of the Criminal Practice Act, which authorizes him in his capacity of magistrate, to hold to answer persons charged with *indictable* offenses; but that chapter confers upon him no power to entertain a criminal action—1 Hittell, pp. 270, 271.

The judgment must be reversed.

REPORT OF PUBLIC SCHOOLS.

ROLL OF HONOR.

CAMPTONVILLE PUBLIC SCHOOL, *Yuba County*. Samuel T. Black,
Teacher. Month ending April 8th, 1870:

Masters H. F. Corey, Jason Meek, Enos Cochran, Harry Brooks, Willie Calvin, Gardy Dickinson, J. W. Groves, Frank Calvin, J. V. McMurray, Wm. Variel, and Jas. Brooks.

Misses Mary Variel, Nellie Newberry, R. A. Miller, Lizzie Crowell, Clara De Cray, Flora Variel, Nellie Miller, Allice Brooks, Fannie Groves, Lily Calvin, and M. J. Price.

WASHINGTON, PUBLIC SCHOOL, *Yolo County*. John C. Wells, Teacher. Names in the order of their standing:

Emily V. VanDusen, Mary Murphy, John Ferren, James Ferren, Marion VanDusen, Solomon Shubener, Maggie Murphy, Mary Ferren, Mary Joseph.

THE NEW NORMAL SCHOOL LAW.

AN ACT to establish a State Normal School.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. There shall be established in the City of San Jose, County of Santa Clara, a School, to be called the California State Normal School, for the training and educating of Teachers in the art of instructing and governing in the public schools of this State.

SEC. 2. The Governor of the State of California, the Superintendent of Public Instruction of the said State, and the Principal of the State Normal School are hereby appointed and created Trustees [Commissioners], with full power and authority to select a site for the permanent location of the State Normal School in the City of San Jose. Said Trustees [Commissioners] shall, within thirty days after the passage of this Act, examine the sites offered by the City of San Jose for the location of the State Normal School building, and select therefrom a suitable location for said State Normal School building, and the site selected by them shall be and remain the permanent site for the State Normal School buildings.

SEC. 3. The Mayor and Common Council of the City of San Jose, are hereby authorized, empowered and directed, immediately after such site shall have been selected by said Trustees, to convey such site by good and sufficient conveyance to the Trustees of the State Normal School, who are hereby authorized and empowered to receive and hold the same and the title thereto, in trust, and for the use of said State Normal School; *provided* that whenever the State Normal School shall be removed from said site selected, the same and the title thereto shall, immediately upon such removal, revert to said City of San Jose, and become the property thereof absolutely.

SEC. 4. The Governor, the State Superintendent of Public Instruction, and five others, to be appointed by the Governor,

shall constitute the Board of Normal School Trustees. The appointed members, at the first meeting of the Board of Trustees, shall determine by lot their respective terms of office, which shall be for two, four, six, eight and ten years.

SEC. 5. Said Board of Trustees shall have power, and are hereby authorized and required to remove to said City of San Jose, County of Santa Clara, the State Normal School, now located in the City of San Francisco, and to continue the same for the gratuitous instruction of such persons residing in this State as may desire to prepare themselves to teach in the public schools of this State. They shall have power to expend all moneys appropriated or donated for building school rooms and boarding houses, and for furnishing the same, as well as all moneys for the current expenses of the School.

SEC. 6. The Board of Trustees shall have power to elect a Principal, and all other teachers that may be deemed necessary, to fix the salaries of the same, and to prescribe their duties.

SEC. 7. It shall be the duty of the Board of Trustees to prescribe the course of study, and the time and standard of graduation, and to issue such certificates and diplomas as may from time to time be deemed suitable. These certificates and diplomas shall entitle the holders to teach in any county in this State for the time and in the grade specified in the certificate or diploma.

SEC. 8. The Board of Trustees shall prescribe the text books, apparatus and furniture, and provide the same, together with all necessary stationery for the use of the pupils.

SEC. 9. Said Board shall, when deemed expedient, establish and maintain a training or model school or schools, in which the pupils of the Normal School shall be required to instruct classes under the supervision and direction of experienced teachers.

SEC. 10. Said Board shall make rules for the government of the boarding house or houses; shall superintend the same, and make all necessary arrangements for conducting the same in the most economical manner that will make them self-sustaining.

SEC. 11. At each annual meeting, the Board shall determine what number of pupils may be admitted into the School; and this number shall be appointed among the counties of this State according to the number of representatives from said counties in the Legislature; *provided* that teachers holding first or second grade certificates may be admitted from the State at large. The County Superintendents and the County Boards of Examination shall hold competitive examinations before the first of May in each year, of all persons desiring to become pupils of the Normal School, which examinations shall be conducted in the same manner as examinations for third grade teacher's certificates. A list shall be made of the applicants thus examined, and they shall receive recommendation in the order of standing in the examination; *provided*, that Superintendents may discriminate in

favor of those whose age and experience specially fit them to become Normal pupils. After the expiration of the year, a new list must be prepared, and those not recommended must be re-examined, or forfeit their right to recommendation.

SEC. 12. To secure admission into the junior class of the Normal school, the applicant, if a male, must be seventeen years of age, or if a female, sixteen years of age. To enter an advanced class, the applicant must be proportionally older. Applicants must also present letters of recommendation from their County Superintendent, certifying to their good moral character, and their fitness to enter the Normal School. Before entering, all applicants must sign the following declaration: "We hereby declare that our purpose in entering the California State Normal School is to fit ourselves for the profession of teaching, and that it is our intention to engage in teaching in the public schools of this State."

SEC. 13. Pupils from other States and Territories may be admitted to all privileges of the School on presenting letters of recommendation from the Executives or State School Superintendents thereof, and the payment of one hundred dollars; the moneys thus received shall be appropriated to the purchase of a library and apparatus. Pupils from other States shall not be required to sign the declaration named in Section 12.

SEC. 14. The Superintendent of Public Instruction shall be the Executive Agent and Secretary of the Board of Trustees of the Normal School. He shall visit the School from time to time, enquire into its condition and management, enforce the rules and regulations made by the Board, require such reports as he deems proper from the teachers of the School and officers of the boarding house, and exercise a general supervision of the same. He shall, in connection with the Executive Committee appointed by the Board, expend all moneys appropriated for salaries and incidental expenses, and shall make a semi-annual statement, in writing, to the Board of all moneys received and expended.

SEC. 15. It shall be the duty of the Principal of the School to make a detailed annual report to the Board of Trustees, with a catalogue of the pupils, and such other particulars as the Board may require, or he may think useful. It shall also be his duty, authorized by the Board, to attend County Institutes, and lecture before them on subjects relating to the public schools and the profession of teaching.

SEC. 16. The Board of Trustees shall have two regular meetings annually, at such time and place as may be determined, but special meetings may be called by the Secretary, by sending written notice to each member.

SEC. 17. The Board shall have power to make all rules and regulations necessary for discharging the duties named above.

SEC. 18. An annual *ad valorem* tax of two cents on each one

hundred dollars' value of taxable property in this State is hereby levied for the twenty-second and twenty-third fiscal years, and is directed to be collected in the same manner as other State taxes are collected, and the money raised by said tax shall be paid into the State Treasury, and said money and the money by this Act appropriated shall be known as the State Normal School Building Fund.

SEC. 19. Said State Normal School Trustees shall, from time to time, as the services herein provided for, or by them ordered and performed, and labor done or materials furnished for said State Normal School buildings, draw orders on the State Controller specifically describing the services rendered, labor performed or materials furnished, together with the amount, and to whom payable. Upon presentation of such orders, the State Controller shall draw his warrant on the State Treasurer for the amounts thereof payable out of said State Normal School Building Fund; and the State Treasurer is hereby authorized and directed to pay such warrants out of said Fund. Said State Normal School Trustees and Controller each shall keep a correct register of the warrants or orders issued, the amount of each warrant, to whom ordered paid, and for what services or materials given. Such registers shall be kept in their respective offices for public inspection.

SEC. 20. The sum of twenty-four thousand dollars is hereby appropriated biennially, out of any moneys in the General Fund not otherwise appropriated, which said appropriation shall be set apart at the commencement of each fiscal year to support the California State Normal School; and the Controller is hereby directed to draw his warrants from time to time on the State Treasurer, payable out of said appropriation, and the unexhausted remainder, if any, of any appropriation for such claims or accounts as have been audited by the Board of Trustees of the Normal School, or the Executive Committee thereof, and the Board of Examiners; *provided*, that the bills for the salaries of regular teachers may be allowed by the Controller without the endorsement of the Board of Examiners; *provided*, also, that the aggregate of warrants drawn shall not exceed in any one fiscal year one-half the appropriation herein made for such year, together with the remainder of unused appropriations, if any, of any previous fiscal year or years; and whenever at the close of any fiscal year a balance remains to the credit of the California State Normal School Fund, such balance shall be carried forward and added to the appropriation for the succeeding year.

SEC. 21. All classes may be admitted into the Normal School who are admitted without restrictions into the public schools of this State.

SEC. 22. The provisions of this Act shall take effect from and after its passage; provided that the removal of the School shall

be made whenever the Board of Trustees decide that suitable accommodations have been prepared for the same.

SEC. 23. All Acts, or parts of Acts passed by the Senate and Assembly of the State of California conflicting with the above are hereby repealed.

Approved April 4th; 1870.

EDITORS' DEPARTMENT.

FIDELITY TO PROFESSIONAL OBLIGATION.

It has sometimes been said that there is a lack of professional sympathy and *esprit de corps* among our teachers in California. Facts have too often seemed to justify this assertion in time past. But the course pursued by the teachers of San Francisco with reference to the case of our friend, the sub-master who has been brought so prominently before the public, exhibited an unselfish generosity and fidelity to professional obligation highly honorable to all concerned. It is a source of pride to us that we hold so close an official and personal relation to such a body of teachers. If we should ever be in want of friends in a time of need, the teachers of San Francisco are just the sort of persons we would desire.

CHANGING ADDRESS.

PERSONS wishing to have the address of their TEACHERS changed, will please remember to mention the *post-office* and *county* from which the change is desired, as well as those to which they wish them sent in future. This will save much trouble, and insure speedy attention to business.

"THE GRAMMAR OF GRAMMARS."

No teacher or scholar ought to be without this book: therefore we offer it as a PREMIUM to any one sending us a club of ten subscribers to the TEACHER.

LETTERS remaining in State Superintendent's office uncalled for: (The parties, or parties knowing the parties, will please call and get them.)

Dr. J. Van De Voost,
Wm. S. Cranmer,
Miss Fannie M. Pattingill,
Miss Fannie M. Pattangall,

E. J. Murphy,
J. C. Nixon,
Mrs. Julia Farrell,
John W. Prentiss.

DEPARTMENT OF PUBLIC INSTRUCTION.

STATE NORMAL SCHOOL.

AFTER an animated contest between Napa and San Jose, the late Legislature located the State Normal School at the latter place. Governor Haight, State Superintendent Fitzgerald, and Dr. W. T. Lucky were appointed Commissioners to choose a site. In discharging that duty, a majority of the Commissioners fixed upon a tract, containing twenty-three acres, just outside of the corporate limits of the city, across the Coyote bridge, at the foot of Santa Clara street. This action of the Commissioners in choosing a site outside the corporate limits of the city is sharply criticized by the press and people of San Jose.

The new Board of Normal School Trustees, appointed under the new Normal School Act, is thus constituted: Governor H. H. Haight and State Superintendent O. P. Fitzgerald are *ex officio* members, and Messrs. John H. Braly, C. T. Ryland, H. O. Weller, Andrew J. Moulder and James Denman members appointed by Governor Haight.

A Normal School Building Fund, of two cents on the one hundred dollars, is provided for in the Act referred to above. The Trustees will initiate preparations for building as soon as practicable.

The next term of the School will commence on the first of June in *San Francisco*—not on the 23d of May, as heretofore announced.

MAGNUM OPUS.

THE Act creating an endowment fund for the University of California of fifty thousand dollars a year, was the crowning performance of the late Legislature. The satisfaction of our citizens is increased by these two facts: First, that this endowment for the University is from the proceeds of the tide lands belonging to the State; that instead of being left as a corruption fund, to be quarreled over and stolen by unscrupulous lobbyists and politicians, this tide land fund is devoted to the grand purpose of furnishing a free University for the youth of California. A second ground of satisfaction is the fact that when the University reaches the point when this fund will no longer be needed to meet its yearly expenses, it reverts to the common school

fund. It is something to rejoice over—that our infant University is thus munificently endowed, without adding a single mill to the taxation of our already heavily taxed people. Whatever may have been the delinquencies of our last Legislature, it certainly made a noble record with regard to education, doing more for that great interest than any preceding Legislature.

TO SCHOOL OFFICERS.

OWING to delays, for which the State Superintendent does not consider himself responsible, the amended School Law did not pass the Legislature and receive the approval of the Governor in time for the new arrangement for estimating, assessing and collecting school revenue to go into operation for the current year. School officers will, therefore, act under the old law. This is the decision of Attorney General Hamilton, who has been consulted on the subject. When the provisions of the amended law are understood, and go into effective operation, it will be generally conceded that the movement made is a forward movement in the right direction.

OMISSION.

AN oversight in making out the list caused the name of Wm. M. McFadden, the present efficient Superintendent of Los Angeles county, not to appear as one of the holders of State Educational Diplomas. Supt. McFaddin is a teacher of too much merit and too long service to be left out in statements of honors conferred.

EXAMINATION OF TEACHERS.—The next examination of teachers by the State Board will be in June—about the first week of June. Notice will be given in the daily papers.

DESIRABLE

THAT the following ladies and gentlemen call at State Superintendent's office and get their certificates (of all grades) or send post office address:

Miss Alice D'Arcy,
Mrs. Hattie B. Alger,
Miss Sarah A. Barr,
Miss Harriet N. Bolton,
Mr. H. N. Burns,
Miss J. Bush,
Adrianna L. Beers,

Miss Mary G. Heydenfeldt,
Miss Alice F. Johnson,
Miss Nellie Knickerbocker,
Miss A. M. Kearney,
William Kermode,
Miss Clara H. King,
Mrs. Mary A. Lowe,

Elisha Broadbent,
 Miss Bertha Bornstein,
 Dr. Thos. Biggs,
 Miss Lizzie Burnett,
 " Annie H. Cathcart,
 " Lizzie E. Carroll,
 " E. N. Cleveland,
 " Lydia A. Clegg,
 " Mary Corkery,
 " Mary P. Clark,
 Mrs. Clifford,
 Miss Fronie T. Clapp,
 Miss Mary E. Clyman,
 Mrs. C. H. Crowell,
 Miss L. H. Crocker,
 Miss Jennie Cox,
 Mrs. Marie Duprey,
 Mrs. C. Van Dusen Drury,
 Miss Julia Ann Doran,
 Miss Mary A. Doyle,
 Miss Ellen A. Evans,
 J. B. Finch,
 Miss D. A. Forsman,
 Miss Carrie P. Field,
 Miss Gazena A. Garrison,
 Miss Mary Virginia Glasgow,
 Miss Ellen G. Grant,
 John Hayes,
 Miss Laura T. Hopkins,
 Mrs. Mary Horton,
 Mrs. M. J. Hamilton,
 Miss Margaret Halley,
 Miss Julia A. Heeney,
 Amy A. Hopkins,

Honorica C. Larkins,
 Miss Mary Louttit,
 Miss Hattie B. Lock,
 Miss Lucy A. Mowrie,
 Mr. H. S. Martin,
 Miss Mary F. Metcalf,
 Miss N. J. Miller,
 Noah Mullendore,
 Miss M. Matthews,
 Henry A. Nelson,
 Miss Mary J. O'Neil,
 Mr. A. F. Olinger,
 Miss Edward C. Perkins,
 Miss Mabel Frances Phelps,
 Miss Jean Parker,
 Mary J. Ritchie,
 Miss Margaret E. Smith,
 Miss E. O. Stephens,
 John A. Smith,
 Miss Susie E. Skidmore,
 " Mary H. Smith,
 " Florence L. Stark,
 " E. A. Shaw,
 " Carrie D. Trask,
 Mr. E. T. Thurston,
 Miss Leonora Teller,
 Isaac Upham,
 Miss Alice L. Wares,
 Miss Lizzie A. Winn,
 Bartlett H. Weston,
 Miss Elizabeth White,
 R. B. Warren,
 Thos. P. Wall,
 Mrs. Delia R. Wheelock.

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 AT LAST.

THE new and really elegant forms for the State Normal School Diplomas are ready. Those of the graduates from the Institution, who have never received their Diplomas, will (unless there is some mistake) find their names in the following list; and those who received at graduation the old forms, are also mentioned here that they may call and get new ones, more handsome in appearance. Then, please call and get your

NORMAL SCHOOL DIPLOMAS.

J. Alexander Louttit,
 Carrie M. Chase,
 Maggie E. Bevans,
 Anna L. Gray,
 Sarah E. Anderson,
 Henrietta Featherly,
 Julia V. Ashley,
 Clara Germain,
 Annie D. Gaddis,
 Hattie I. Estabrook,
 Kate O'Brien,

Marion Stokum,
 Mary Little,
 Annie H. Lewis,
 Anna Hall,
 L. C. Betancue,
 Wm. N. Magoon,
 Lizzie Cope,
 F. A. Day,
 Lizzie McColliam,
 Fannie Jacks,
 Julia B. Brown,

E. Mattie Chapman,
 Hattie B. Locke,
 Nellie M. Owens,
 Mary P. Clark,
 Lizzie A. Newell,
 Maggie Howard,
 Roxa S. Cocks,
 Ada C. Wright,
 Elizabeth York,
 Marion Sears,
 B. E. Hunt,
 Martha Lawless,
 Frances Simon,
 Arthur Rogers,
 M. L. Soulé,
 F. B. Piper,
 C. F. Stevenson,
 Nelson S. Trowbridge,
 Elizabeth White,
 R. Eames,
 Mary Perkins,
 C. D. McNaughton,
 Mary F. Metcalf,
 Lizzie A. Morgan,
 James G. Kennedy,
 Mary G. Heydenfeldt,
 Mary T. Hart,
 Emma Bigsby,
 Ella M. Harvey,
 Chas. W. Childs,
 Adriana L. Beers,
 Mary Smith,
 Annie La Grange,
 Sallie L. Hall,
 Troy Shelley,
 Amelia Joice,
 Truman P. Ashbrook,
 J. S. Hammond,
 Sumner T. Paine,
 David Powell,

J. A. Smith,
 Anna M. Palmer,
 Lillian Crittenden,
 Edward W. Jones,
 Susie S. Lawton,
 Beatrice Lawrie,
 Sarah E. Miller,
 Kate I. Clayton,
 C. M. Lewis,
 Howell Powell,
 Ella A. Roberts,
 Flora L. Smith,
 Grace Smith,
 John C. Shipley,
 Ada E. Wright,
 Hattie L. Wool,
 Mary H. Estabrook,
 Jennie E. Greer,
 Mary E. Hall,
 Nettie Doud,
 Sarah A. Frissell,
 L. J. Megerle,
 Maria O'Conner,
 Jas. F. Kennedy,
 Mary Pasco,
 Sabrina Willams,
 Mary S. Moulthrop,
 Abner F. Olinger,
 Abbie A. Carswell,
 Amy E. Campbell,
 Almira T. Flint,
 Gazena A. Garrison,
 L. E. Gummer,
 Mary J. Morgan,
 E. D. Humphrey,
 John A. Moore,
 Annie Bryant,
 Lucinda L. Allyne,
 A. M. Holmes,
 Sarah E. Frisell.

◆◆◆◆◆

LIFE DIPLOMAS.

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LIFE Diplomas—some duplicates in lieu of the old, and others more recently issued—are ready for delivery to the following persons, who are respectfully requested to make application for them at the office of the State Superintendent, 240 Montgomery street, 3d floor, No. 's 1 and 2:

Bernhard Marks,
 James Stratton,
 A. L. Fuller,
 John H. Baaly,
 Miss Jennie G. Kercheval,
 Henry P. Carlton,
 C. G. Warren,

John Swett,
 Augustus Morse, Jr.,
 Samuel I. C. Swezey,
 Samuel M. Jackman,
 W. I. G. Williams,
 J. G. Johnson,
 Miss C. L. Hunt,

J. M. Kirkpatrick,
 J. P. C. Alsopp,
 Thos. C. Leonard,
 Theodore Bradley,
 John C. Pelton,
 Ellis H. Holmes,
 T. W. I. Holbrook,
 Jos. D. Littlefield,
 H. N. Nutting,
 George Brown,
 Ira G. Hoitt,
 Miss E. W. Houghton,
 Miss Frances Lynch,
 Miss H. M. Clark,
 Mrs. C. L. Atwood,
 Mrs. Mary L. Swett,
 J. B. McChesney,
 M. L. Templeton,
 Caroline Price,
 Kate Kennedy,

Mrs. P. C. Cook,
 D. C. Stone,
 J. M. Sibley,
 George Tait,
 C. C. Cummings,
 Thos. S. Myrick,
 Ebenezer Knowlton,
 W. B. Rowell,
 Geo. F. Morris,
 Wm. T. Lucky,
 Azra L. Mann,
 Mrs. Dorcas Clark,
 John Bagnall,
 Mary E. Clark,
 Mrs. L. A. K. Clapp,
 S. A. Penwell,
 W. N. Granger,
 E. D. Humphrey,
 Wm. White,
 W. L. Sanders,
 C. G. Ames.

EXCURSION FOR NEW YORK.

TEACHERS of the State desiring to join the excursion party to New York are invited to send their names to the office of the Superintendent of Common Schools of San Francisco, without delay. Tickets to Chicago and back will cost \$120 (currency.) Corresponding reduction in price will be made to New York and perhaps other places. Return tickets good for sixty days.

BOOK TABLE.

SKETCHES OF CREATION: A Popular View of some of the Grand Conclusions of the Sciences in Reference to the History of Matter and of Life. Together with a Statement of the Intimations of Science Respecting the Primordial Conditions and the Ultimate Destiny of the Earth and the Solar System. By ALEXANDER WINGHELL, LL.D., Professor of Geology and Botany in the University of Michigan, and Director of the State Geological Survey. New York: Harper & Brothers, publishers. 1870.

This is one of the few successful efforts to "popularize" science,—which is to be appreciated the more because of the numerous failures in that direction. Aside from a tendency in its author to mount on stilts occasionally, the book offers some very pleasant and profitable reading to a thoughtful mind. A chapter on "Will There be a Higher Creation on Earth than Man?" and another on "Is the Sun Cooling Off?"—treated from a semi-scientific point of view—cannot fail to have readers. A. Roman and Company.

A SMALLER HISTORY OF ENGLISH AND AMERICAN LITERATURE FOR THE USE OF SCHOOLS. Edited by WILLIAM SMITH, LL.D., and HENRY T. TUCKERMAN, New York. Sheldon and Company, 498 and 500 Broadway. 1870.

We had just had a conversation with a member of the State Board, in which the subject of literary history in connection with the authors of the extracts given in our higher school readers was discussed, when the book whose title is above given was placed on our table by A. Roman and Company. This is

one of a series of text books on English and American literature, published by Sheldon and Company. As a compend of English literature for general school use, this work is one of great value, and will be welcomed gladly by teachers and students. It strikes us as a little singular that in giving the names of distinguished American writers only an incidental allusion is made to Thomas Jefferson. More space is given to Samuel Eliot or Benson J. Lossing than to the author of the Declaration of Independence. We might justly make other criticisms of this character, but the work as a whole is good and will be of great value to those for whom it is intended.

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I. N. CHOYNSKI,
Antiquarian Book Store

146 SECOND STREET,

SAN FRANCISCO.

CALIFORNIA STATE NORMAL SCHOOL.

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To secure admission to the Junior Class, applicants must pass a written examination on the following subjects, viz.:

Orthography, Reading, Penmanship, Common School Arithmetic, English Grammar, Geography and Composition.

JUNIOR CLASS—*First Session.*

- Arithmetic*—Eaton's Higher.
- English Grammar*—Brown's.
- Geography*—Monteith's.
- Reading*—Willson's Readers.
- Orthography*—Willson's.
- Moral Lessons*—Cowdery's.
- Geometry*—Marks' Elements.

JUNIOR CLASS—*Second Session.*

- Algebra*—Robinson's Elementary.
- English Grammar*—Brown's, and Greene's Analysis.
- Rhetoric*—Boyd's.
- Physiology*—Cutter's.
- U. S. History*—Quackenbos'.
- Vocal Culture*—Russell's.
- Book-Keeping*—Payson & Dunton's.
- Natural Philosophy*—Steele's.
- General Exercises during the Junior Year*—Penmanship; Object-Lessons; Calisthenics; School Law; Methods of Teaching; Vocal Music, Drawing, Composition, Declamation and Constitution of United States and California.

SENIOR CLASS—*First Session.*

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- Physiology*—reviewed.
- Geometry, Trigonometry, and Mensuration*—Davies'.
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- Vocal Culture*—Russell's.
- Book-Keeping*—Payson & Dunton's Double Entry.

SENIOR CLASS—*Second Session*

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Physical Geography—Warren's.

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English Literature—Collier's.

Astronomy—Loomis'.

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General Exercises—Same as in the Junior Class.

REGULATIONS OF THE NORMAL SCHOOL.

1. All pupils, on entering the School, are to sign the following declaration:
"We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State."
2. To enter the Junior Class male candidates must be seventeen years of age; and female candidates sixteen. To enter the Senior Class they must be one year older.
3. All applicants are required to present letters of recommendation from the County Superintendent of the county in which they reside. The holders of first or second grade teacher's certificates will be admitted without the above recommendation.
4. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

GENERAL INFORMATION.

There will be Written Examinations and Public Exercises at the close of each term. The Graduating Exercises will be in March.

Pupils will be required to furnish their Text Books. Books for reference will be supplied by the School.

Good boarding can be obtained in private families at from twenty-five to thirty-five dollars per month.

REMOVAL OF THE SCHOOL.

In obedience to an Act passed by the last Legislature, the Normal School will be removed to the city of San Jose. This removal will not be made until suitable buildings are erected for the accommodation of the School. It is not probable that these will be ready before the end of the next school year.

The next session will commence in the city of San Francisco on the 1st day of June.

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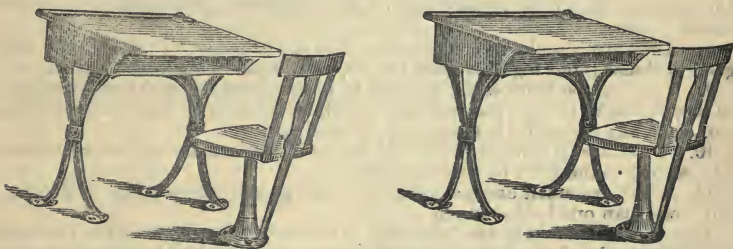
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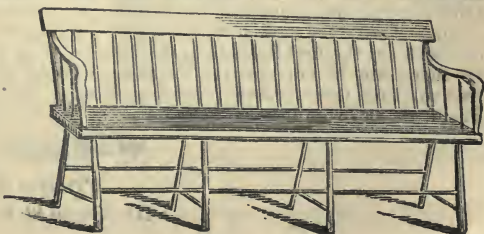
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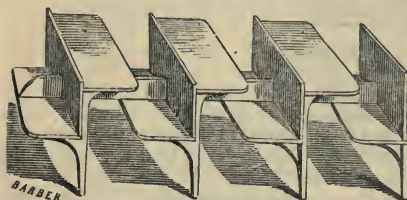
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
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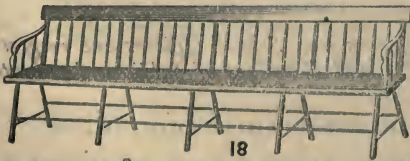
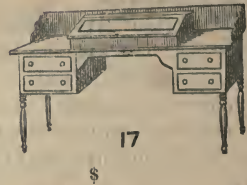
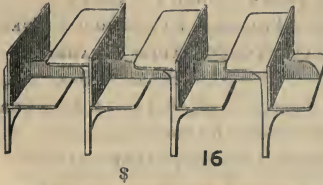
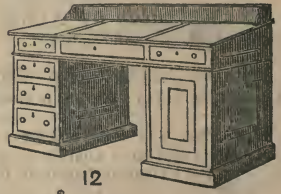
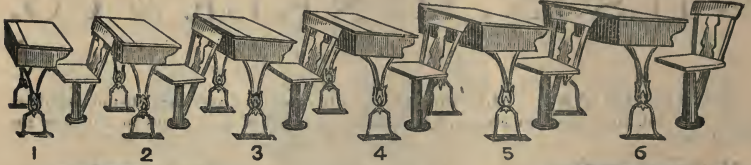
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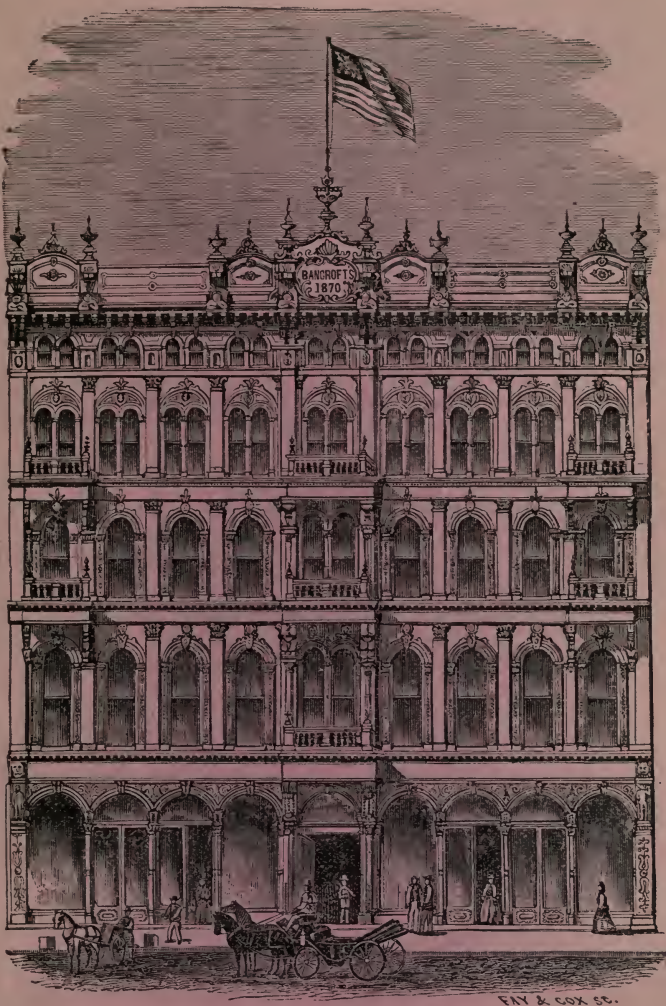
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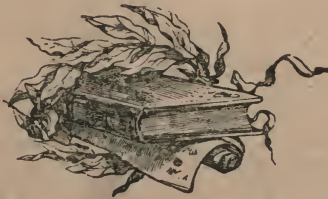
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NOTES ON THE SCHOOL-STUDY OF ENGLISH WORDS.

BY PROF. WILLIAM SWINTON, OF THE UNIVERSITY OF CALIFORNIA.

IF we divide the school-study of the English language into the study of its *forms* and the study of its *matter*, it will be easily perceived that the first is much more adequately provided for than the second.

The study of the *formal* part of the English language—of the inflectional changes of its words and the syntactical relations of words in sentences—is covered by GRAMMAR. It is possible that our elementary treatises on English Grammar may still admit of very great improvements—I am strongly convinced that they do; but that is a question apart: theoretically considered, the art of grammar teaches the *formal* part of the English language.

It is very different in the case of the *matter* or *substance* of the English language. Here it is not so much a question as to possible improvements in the details of an existing study as of *creating* the study itself. The desideratum may be thus stated: it is required to furnish such practical method of instruction and training in the content of our language as will impart to pupils a good knowledge of the English vocabulary—of its stock of words, their meanings and their uses.

I am sure my brother educators will require no argument as to the high value and prime importance of this study. Our English *vocabulary*—that body of three or four thousand words em-

ployed in the ordinary uses of intercourse, that other body of from ten to fifteen thousand words that form the vehicle of all literary expression—is the very *substance* of our speech. And without in the least seeking to underate the importance of the study of the *formal* part of our language, I maintain that its *substantial* part has claims on our attention fully as weighty.

True, the study of the English vocabulary is not wholly neglected. At various points it is impinged on by the spelling-book, the definer, the dictionary, and the practice of composition. But the real deficit is the lack of such systematic treatment of this subject as shall constitute it a regular school *study*—a study so methodized as to be available for class-room drill. It is, perhaps, not very much to be wondered at that this lack still exists. Linguistic science is the creation of our own generation, and the results of this science have not yet found their way down to the level of the text-book—which level, however, they *should* reach; for the study of words is eminently fitted to be a *school-study*. If, in a few rapid outlines, I am able to convey my own ideas of this subject, I hope to make manifest: 1st. That not only is the study of the English vocabulary one of the highest practical utility,—concerning itself, as it does, with the very instrument of all expression; but, 2d. That it possesses singular value as an intellectual discipline, and unrivaled power in stimulating the mental activity of youth.

By way of preface, I may perhaps be allowed to state that my views of this matter are the growth of experience rather than of abstract speculation. While a teacher in New York City, a good time past, I carried several successive classes, during five or six years, through a course of training in the English vocabulary. I had afterwards the pleasure—one of those experiences which are the rich but too rare reward of the teacher—of receiving from my pupils, some of whom have risen to eminence as newspaper men, emphatic testimonials of the value of that discipline. “It was your method of instruction which first gave me a realization of the true nature and living power of words” is the gratifying remark which has, from time to time, been made to me by many of my old scholars. It was my design, at that time, to essay a text-book of Etymology; but a change of career into the field of active journalism interfered. However, since my return to the profession of teaching has again brought me in contact with young minds, I find my estimate of the value of this neglected study increased rather than diminished. But, to the subject matter.

I stated above that this study is not wholly neglected, and I named some branches of the grammar-school curriculum which incidentally bear on it. I purposely omitted that type of text-book which avowedly aims to cover, or, at least, *partially* to cover, this very ground—I mean such works as Town’s “Analysis of

Derivative Words," and the so-called "Scholar's Companion." On each, a word by way of general criticism:

And first, as to Town. The "Analysis" confines itself to derivatives formed by the union of prefixes or suffixes, or both, with existing *English* words; as, from *health* we have such words as *healthy, healthily, healthiness, healthful, unhealthful, etc.* This method is useful as far as it goes, but it does not go very far, seeing that most of our English derivatives come, not from Saxon, but from classical sources; so that whatever succulence there is in such roots is very soon extracted by the pupil. Moreover, Town's manner of treatment is confused and complicated. Thus, to take a single example: under the root *join*, he gives *adjoin*, and *subjoin*, and *rejoin*, and *conjoin*, etc.; which is all very well; but how about *conjunction*, which he adds as one of the derivatives of *join*? It is preposterous to expect pupils, who have not studied Latin, to be able to affiliate *conjunction* with *join*. There is, of course, an etymological relationship between the words, but the perception of it would demand a knowledge of the theory of *jungo, junctum*, and it is not within the scope of Town's method of treatment to impart this knowledge. Town's book displays, throughout, a substantial ignorance of English philology.

The so-called "Scholar's Companion" is, in point of fact, a republication (under a title which exhibits a striking want of tact in nomenclature) of Butler's "Etymological Spelling Book"—an English manual, which, some years ago, had a very considerable currency. The same is true of the "Companion," and the fact of such success, in view of the very lame execution of the work; sufficiently evidences the very deeply-felt need of some elementary text-book on the subject. As I shall presently have occasion to make some fundamental criticism on the very *method* of this book, it will not be possible here to dwell on its many faults of detail. Its numerous egregious blunders of etymology—as, for instance, that of making "posthumous" one of the derivatives of the Latin word *humus*—are only excusable on the ground that the etymology of the book is the etymology of fifty years ago.

The part of the vocabulary with which the "Scholar's Companion," and similar works, undertake to deal is the body of English derivatives from Latin and Greek roots. It is well known that many of these roots are the fruitful progenitors of numerous families of derivatives (*facio* giving us no less than 500; *pono* above 250 English words, etc.); and it was an excellent conception, that of marshaling under specific classical roots all the English words derived therefrom. The classical element of our vocabulary is of the very highest importance, while it is, at the same time, the most difficult; and the attempt to bring this part of our vocabulary within the scope of study by pupils with no knowledge of Latin and Greek was a highly meritorious one. But this exhausts the merits of the plan, for its execution is

marred by some very grave defects—defects which impair and all but destroy its utility. What are these defects?

It will perhaps place us at an advantageous point of view for answering this question if we ask another, to-wit: What might we, *a priori*, think to be the proper method of handling groups of English derivatives from classical roots? Now, I fancy it will need no argument to show that the crowning benefit of such study is in *tracing the force of the root-word throughout its various derivatives*. The advantage of such exercise is two-fold. 1st. That it aids the memory of the pupil, who is able to remember the *definition* (indeed, to *make* the definition,) of the derivative, because it is clearly associated in his mind with the significance of the *root* and with the resulting *primary meaning*. 2d. That it furnishes a genuine intellectual discipline, and substitutes for a dull and difficult task of memorizing a stimulating and refreshing exercise of the analytic faculty.

If it be granted that the method which secures these results is the proper method of treating these groups of English derivatives, it will be recognized by my brother instructors as a very severe condemnation of the "Companion's" method when I recall to their minds the fact that the plan of that work is to do no more than marshal the derivatives under their Latin and Greek roots, and *append the dictionary definitions*—thus making the study one of great difficulty, because a purely arbitrary matter of memorizing, while it empties it of most of its utility and all its stimulus. Of what possible value to the pupil can it be to be informed—under *pes, pedis*, the foot—that the word *impediment* means *hindrance*—the real *nexus* of meaning, so suggestive and interesting, being wholly omitted? He is taught that from the Latin word *vir*, a man, comes, among other words, the English word *virtue*, and he is informed that "virtue" means *efficiency* or *excellence*:—but he is left to surmise what possible connection there can be between the two. Tell him, however, that *virtue* comes from *vir*, a man, through *virtus*, *manliness*, because, among the Romans, "manliness" was *the preeminent virtue*, and is it not manifest that he will have another kind of notion of the word's significance?

This defect—the failure to connect the derivatives in any intelligible manner with their radices—is the first and greatest in the "Companion." There are, however, two others, which add to the imperfections of the method.

1st. A total lack of any *analysis of the composition of the derivatives*. It is too much to expect young scholars to follow the roots and prefixes and suffixes through their complexities of combination. Even those really simple may be a great puzzle to the pupil. Accordingly in arranging under *similis*, like, such words as *assimilate*, etc., it is hardly prudent to rely on the pupil's power of divining that the first syllable, *as*, is really the prefix *ad*. I should write out the analysis in full, thus: *ad + simil(is) + ate*—

to make (*ate*) like (*simil*) to (*ad*). Moreover, there occur other changes, changes of an organic nature, which the young pupil, left to his unaided powers, cannot possibly understand.

2d. The plan of the "Scholar's Companion," and of all similar works, embraces no exercises, no *praxis*, to familiarize the pupil with the actual *uses of words*. Nevertheless, such practical training is of prime necessity, for only thus can the learner acquire so intimate an acquaintance with words as to make them a real *possession* to him.

And now, without further preliminaries, the readiest way of illustrating my view of the improved method of studying English derivatives will be to take a group or two as set down in the "Scholar's Companion," and then develop the same according to the plan above suggested.

Let us, to begin with, take the group of English derivatives from the Latin *corpus, corporis*, the body.

METHOD OF THE SCHOLAR'S COMPANION.

Corpus (corporis), the body.

Corporal, the lowest officer over a body of men.	Corporeal, having a body; not immaterial; relating to the body.
Corporate, united into a body or community.	Corpulent, having a bulky body.
Corporation, a body politic.	Corpse, a dead body.
Incorporate, to embody.	Corps, (Fr., pronounced <i>core</i> ,) a body of soldiers.
Corpuscle, a minute body.	

THE PROPOSED METHOD.

Corpus—corporis: the body.

[*Corporis* is the genitive case of *corpus*, and the stem *corpor(is)* is used in forming many of the derivatives.]

1. **Corporal**, (*a*). ANALYSIS: *Corpor*+*al*=relating to the body: suffix *al* relating to, and *corpor*, the body. DEFINITION: relating to the body; as "corporal punishment," that is, punishment of the *body*. (See *corporeal* below.)

Obs.—The noun "Corporal," meaning a petty officer, is not derived from *corpus*. It comes from the French *Caporal*, of which it is a corruption.

2. **Corporeal**. ANALYSIS: *Corpore*+*al*=of the nature of the body: suffix *al*, of the nature of, and *corpore*, the body. (Through the Latin adjective *corporeus*.) DEFINITION: Having a material body, that is, *bodily*, as opposed to *spiritual*.

Obs.—"Corporeal" is used when there is a contrast, expressed or implied, with *spiritual*; "corporal" means *relating to the body*, without any idea of contrast. We would say "Angels have no corporeal form," because we imply that they *have a spiritual* form.

3. **Corporate**. ANALYSIS: *Corpor*+*ate*=made into a body: suffix *ate*, made into, and *corpor* from *corpus*, a body. DEFINITION: United into a body or corporation; thus, "a corporate company" is an organization of men united into one *body*.

4. **Incorporate**. ANALYSIS: *In*+*corpor*+*ate*=to make into a body: suffix *ate*, to make; prefix *in*, into, and *corpor*, from *corpus*, a body. DEFINITION: 1. To form into a legal body; 2. To unite or blend one substance into another.

5. **Corporation**. ANALYSIS: *Corpor*+*ate*+*ion*=that which is made into a body: suffix *ion*, that which: suffix *ate*, made, and *corpor*, a body. DEFINITION: A body politic, authorized by law to act as a single person.

6. **Corpulent.** ANALYSIS: From *corpus*, through *corpulentus*, fleshy=having a large body. DEFINITION: Stout, fleshy.

7. **Corpuscle.** ANALYSIS: *Corpus*+*cle*=a diminutive body: suffix *cle*, little, and *corpus*, a body. DEFINITION: A minute particle of matter.

8. **Corps.** ANALYSIS: Adopted from the French *corps*=a body. DEFINITION: 1. A body of troops, comprising a certain number of brigades and divisions; 2. A body of individuals engaged in some one profession, as a "corps of professors," "the diplomatic corps."

Obs.—"Corps" is pronounced in the French manner, *core*; the plural is pronounced *cores*:

9. **Corpse.** From *corpus*, through the French *corps*=the body; that is, *only* the body—the *spirit* being departed. DEFINITION: The dead body of a human being.

With reference to these two methods of treating groups of derivative words, a careful inspection of the above will be the best guide to an estimate of their comparative merits: There are many points of detail which I need not dwell on,—as, for example, the insertion (in the extract from the "Scholar's Companion") of the noun "Corporal" as a derivative from *corpus*, which it is not; and at the same time the omission of the important adjective "corporal," which *is* a derivative from *corpus*. Many other minutiae will be observed by the teacher. But the cardinal fact is the essential difference in the mode of treating the derivatives. This difference will be discovered on an inspection of the above.

It will be noted that the "Companion's" method is to do no more than give the derivatives, and then append the dictionary definitions. In the mean time the *structure* of the words is not understood by the scholar, and that which is the one peculiar value of this study—the tracing of the living force of the root-word through all its derivatives—is wholly lost. The study, as presented in the "Companion," reduces itself to no more than the mere memorizing of so many dictionary definitions—chopped straw in place of intellectual pabulum.

The proposed method sets out by exhibiting the actual structure of the derivative words. Of course, it is presupposed that when the pupil has reached that stage in the study of words which is represented by the above example, he will have mastered the meaning of the prefixes and suffixes. (In this he will have been thoroughly drilled in the early part of the course, and the best way to drill in this is to take up composite words made up of prefixes and suffixes, with *English* roots.)

The force of the prefixes and suffixes being understood, the pupil will be prepared to take up the study of classical derivatives in the manner set forth in the group of derivatives from *corpus*. He will have the aid of a precise *analysis* of the composition of the word, so that he will see just how the derivatives *come from the root-word*. This analysis presents the stem part of the derivative detached from its modifying prefixes or suffixes. He knows the meaning of the root, and the force of the prefix or suffix: he is therefore fully prepared to understand the *primary*

meaning of the derivative, which primary meaning (conveniently written after the sign of equality) is *the resultant of the very analysis of the structure of the word.*

With this knowledge of the seminal meaning of the derivative, the pupil brings to the study of its *definition* a lively apprehension of what *must be* the true import of the word. And if the word has undergone transformations of meaning the clear knowledge of the word's *literal* significance will be a wonderful aid to the perception of its *figurative* sense.

With these explanations of the proposed method, let us now take another group. This time we may add to the ANALYSIS and DEFINITION some practical exercises in the use of the derivative words. I select the group under *cor*, *cordis*, the heart.

METHOD OF THE SCHOLAR'S COMPANION.

Cor (cordis), the heart.

Core, the central part, as of a fruit.	Cordiality, sincerity.
Cordial, <i>a</i> , sincere, hearty.	Courage, boldness.
Cordial, <i>s</i> , anything that gladdens the heart.	Discord, disagreement.
	Record, (Latin, <i>recordor</i> ,) to register.

THE PROPOSED METHOD.

Cor (cordis), the heart.

[*Cordis* is the possessive or genitive case of *cor*; the stem *cord(is)* is used in forming many of the derivatives.]

1. **Core.** ANALYSIS: From *cor* (through the old French *core*)=the heart. DEFINITION: The inner part of a thing.

Obs.—“Core” is applied specially to the central part of fruit, as “the *core* of an apple” that part being inside of the fruit, like the heart in the body.

2. **Cordial, (a).** ANALYSIS: *Cordi(s)+al*=having the quality of the heart; suffix *al*, having the quality of, and *cordi*, from *cor*, *cordis*, the heart. DEFINITION: Hearty, sincere.

Obs.—The *heart* is accounted the seat of the affections; thus we speak of “a warm *heart*.” Observe that *cor*=heart, and Latin suffix *al*=Saxon suffix *y'*; hence, cordial=hearty.

3. **Cordial, (n).** ANALYSIS: *Cordi(s)+al*=something having the quality (of) of acting on the heart. DEFINITION: 1. A stimulating medicine; 2. Sweetened spirits, used as a beverage.

Obs.—The term, “a cordial,” is applied figuratively to anything that comforts or gladdens; as “good news is a *cordial* to the mind.”

4. **Cordiality.** ANALYSIS: Cordial+ity=the state or quality of being cordial: suffix *ity*, the state or quality of, and cordial (as above). DEFINITION: Sincerity, heartiness;

5. **Concord.** ANALYSIS: *Con+cord(is)*=heart *with* (*con*) heart. DEFINITION: Unity of sentiment, agreement, harmony.

Obs.—Where *heart* goes *with* heart there is agreement or harmony. “Concord,” in music, is harmony of sound.

6. **Discord.** ANALYSIS: *Dis+cord(is)*=a separation of minds or opinion; prefix *dis*, asunder or apart. DEFINITION: Disagreement, want of harmony.

Obs.—*Discord* is the opposite of *concord*; that is, the hearts or minds of those in discord, in place of being *together* (*con*), are *asunder* (*dis*). In music, “discord” is the clashing of sounds that do not agree; in like manner, “discord” is the clashing of the *chords* of the *mind*.

7. **Record, (v).** ANALYSIS: *Re+cord(is)*=to get by heart (through the Latin verb *recordor*, to remember). DEFINITION: To register.

Obs.—The object of getting a thing *by heart* is to *recall* it; but the surest way of being able to recall a thing is to *regist'r* it; hence, the derivative meaning of *record*.

8. Courage. ANALYSIS: From *cor*, through the French *courage*=heartiness or boldness. DEFINITION: Bravery, intrepidity.

Obs.—The *heart* is accounted the seat of bravery; hence the derivative sense of *courage*.

EXERCISES ON THE ABOVE.

[The numbers refer to words with corresponding numbers in the analysis above.]

1. "The quince was rotten at the *core*." "The preacher touched the *core* of the subject." In which of these sentences is *core* used in its literal meaning? In which in its figurative sense?

2. To how many parts of speech does *cordial* belong? What is the Saxon synonym for the adjective *cordial*? How do *cordial* and *hearty* differ in use? What would you say, "a *cordial* laugh?" or "a *hearty* laugh?" "A *cordial* dinner?" or "a *hearty* dinner?" When one army gives another a warm reception is that the same as a *cordial* reception? Combine *cordial*+ly and define it. Is there such a word as *uncordial*? What then is the opposite of *cordial*?

3. Write two sentences containing the noun *cordial* in its figurative sense.

4. What suffix would you add to the adjective *hearty* to make a synonym of *cordiality*? What is the opposite of *cordiality*?

5. What part of speech is *concord*? Can it be used as a verb? What form would the prefix *ad* take when joined to *cord*? What word may thus be formed? What is the difference between *accord* and *concord*? (See Synonyms, §—).

Supply the proper words: "In your view of this matter I am in (*accord*? or *concord*?) with you." "There should be (*concord*? or *accord*?) among friends." "The man who is not moved by ——— of sweet sounds." Combine *accord*+ance and define. Write three sentences containing the words *concord*, *accord* or *accordance*.

6. What is the connection in meaning between *discord* in music and *discord* among brethren? Give two synonyms of *discord*. (See Synonyms §—). Which has the stronger meaning, *discord* or *strife*? Which implies action? Combine *discord*+ant, and define.

6. What part of speech is *record*? When the accent is placed on the first syllable what part of speech does it become? What is a *record*? Combine *record*+ing; *record*+er; un+*record*+ed, and define each. Write two sentences—one containing *record* as a verb, the other as a noun.

8. Courage is the same as having a stout ——— what? What is the opposite of courage. Give two synonyms of courage. Combine *courage*+ous; *courage*+ous+ly; en+*courage*; dis+*courage*, and define each word. Analyze *encouragement*, *discouragement*.

Finally, as a third illustration, let us take the group of derivatives from *ars*, *artis*—art.

METHOD OF THE SCHOLAR'S COMPANION.

Ars (*artis*), art, skill.

Artificial, more by art; not genuine;	Inert, dull; motionless.
Artisan, a workman or operative.	Artless, unskillful, without fraud.
Artist, a professor of an art.	Artful, cunning.
Art, skill, cunning, a trade.	Artifice, stratagem.

THE PROPOSED METHOD.

Ars—*artis*: art, skill.

[*Artis* is the genitive case of *ars*, and the stem *art* is used in forming many of the derivatives.]

1. **Art.** ANALYSIS: Formed from *artis*, by dropping the termination *is*=skill, contrivance. DEFINITION: "Art" has several distinct meanings. 1. Cunning; thus, an animal practices *art* in escaping from his pursuer. 2. Skill or dexterity; thus, a man may be said to have the *art* of managing his business. 3. A system of rules, or a profession: as, the *art* of building or of engraving. 4. *Creative* genius, as seen in painting, sculpture, etc., which are called the "fine arts."

2. Artist. ANALYSIS: Art+ist=one who practices an art: suffix *ist*, one who. DEFINITION: A person who occupies himself with one of the fine arts.

Obs.—A painter may be called an *artist*, but a blacksmith could not properly be so called. The French word *artiste* is sometimes used to denote one who has great skill in some craft or profession, even if it is not one of the fine arts; thus, a great genius in cookery might be called an *artiste*.

3. Artisan. ANALYSIS: From *ars*, through the French *artisan*=one who practices an art; suffix *an*, one who. DEFINITION: One who practices one of the mechanic arts; a workman or operative.

4. Artful. ANALYSIS: Art+ful=full of art or cunning: suffix *ful*, abounding in, and *art*, meaning *cunning*. DEFINITION: Crafty, cunning.

5. Artless. ANALYSIS: Art+less=without art; suffix *less*, free from. DEFINITION: free from cunning, simple, ingenuous.

6. Artifice. ANALYSIS: Arti+ifice=something made by art. (The element *ifice* comes from the Latin verb *facio*, to make.) DEFINITION: An artful contrivance or stratagem.

7. Artificial. ANALYSIS: Arti+fici+al=having the quality of something made by art; suffix *al*, having the quality of, and *artifice*, as above. DEFINITION: 1. The work of man, and hence, opposed to *natural*; as “*artificial* flowers.” 2. Not genuine, put on; as “*artificial* manners.”

8. Inert. ANALYSIS: In+ert=without art or skill. [Not used in its literal sense; its meaning is, without ability or disposition to *move*.] (The *a* in *ars*, is changed to *e* in the Latin derivative adjective *iners*.) DEFINITION: 1. Without the power of motion; as “*inert* matter.” 2. Inactive; as “an *inert* man;” that is, a sluggish man.

EXERCISES.

1. What is the particular meaning of *art* in the sentence of Shakspeare: “There is no *art* to read the mind’s construction in the face?” Write four sentences, each containing the word *art* in one of its four different meanings.

2. Combine artist+ic; artist+ic+al+ly, and define. Which is proper, *inartistic*, or *unartistic*? Would it be proper to call a famous hair-dresser an *artist*? What might he be called? Write three sentences containing *artist* or one of its derivatives.

3. What is the distinction between an *artist* and an *artisan*?

4. What is the opposite of *artful*? Combine artful+ly, and define. What is the distinction between *artful* and *artificial*?

5. Combine artless+ly; artless+ness, and define. Could a wily politician be called artless? What might he be called? Give two synonyms of artless. (See Synonyms § —.) Write two sentences containing the word *artless* or one of its derivatives.

6. Combine artific(e)+er. On which syllable is the accent? Is an *artificer* one who practices *artifice*? What then? Supply the proper words: “Every man is the (artisan? or artificer?) of his own fortune.” In speaking of a military operation, which would be the suitable term, *artifice* or *stratagem*? State the different shades of meaning in the synonyms—trick, artifice, device, stratagem. (See Synonyms § —.)

7. Combine artificial+ly; artificial+ity, and define each. What is the opposite of *artificial*? Mention another opposite. (See Contrasted Words, § —.)

8. “Samuel is a very *inert* boy, and has not much more life in him than so much *inert* matter.” What is the distinction in these two uses of this word? Can the matter move if it wishes to? Can Samuel? Combine inert+ness, and define; inert+ly, and define. Write three sentences, using the word *inert* or one of its derivatives.

[NOTE.—In the above exercises, the references (§ —) are to various parts of a supposed book on the English vocabulary.]

Such is an outline of the proposed plan of treating English derivative words. And in regard to this method, were it allowa-

ble to imitate the pointed style of a patentee's claims and specifications, I might challenge for it:

1.—A new and important feature, to-wit: the systematic analysis of the structure and organism of derivative words, together with the statement of their primary meaning in such form that the pupil inevitably perceives its relation with the root, and in fact *makes* its primary meaning by the very process of analysing the word into its root and modifying prefix or suffix.

2.—A marked improvement in the method of approaching the definition—a method by which the definition is seen to *grow out of* the primary meaning, and by which the analytic faculty of of the pupil is vividly evoked in tracing the transition from the primary meaning to the secondary and figurative meanings—thus converting what is ordinarily a matter of rote into an agreeable exercise of the thinking faculty.

3.—Another new and important feature to-wit: the practical exercises in the *uses of words*. This is a great desideratum, and it is only by such drill that the young mind can be brought into close relation with words in their living force and actual functions. A copious *praxis* of the kind suggested, would, I am convinced, prove a powerful auxiliary in the art of *composition*—that most difficult of school-boy exertations.

These “Notes on the School-Study of English Words” have limited themselves to that part of our vocabulary which consists of derivatives from Latin and Greek roots. An adequate elementary treatise should, however, embrace other branches of the study of words—and on these I may touch in a subsequent paper. In the meantime I take the opportunity of stating that I hope at an early day to be able to offer a “Class-book of English Etymology,” which will seek to fill the present void in that most important of school-studies—the study of the English vocabulary.

NORMAL TRACT ON COMMON FRACTIONS.

BY BERNHARD MARKS.

9.

a, and *b*. 3 is $\frac{1}{2}$ of what number?

SOLUTION.

$$3 = \frac{1}{2} \text{ of } 2 \text{ times } 3 = 6.$$

4 is $\frac{1}{2}$ of what number? 5? 1? 8? $1\frac{1}{2}$? $1\frac{1}{3}$? $2\frac{1}{2}$?

3 is $\frac{1}{3}$ of what number? 5? 7? 10? $1\frac{1}{2}$? $1\frac{1}{3}$? $3\frac{1}{3}$?

5 is $\frac{1}{4}$ of what number? 10? 1? 3? $1\frac{1}{4}$? $1\frac{1}{2}$? $2\frac{1}{2}$?

4 is $\frac{1}{5}$ of what number? 3? $\frac{1}{5}$? $1\frac{1}{5}$? $\frac{2}{5}$? $1\frac{2}{5}$?

c, d, and e. 2 is $\frac{2}{3}$ of what number?

SOLUTION.

2 is $\frac{1}{3}$ of 3 times 2 = 6.

2 is $\frac{2}{3}$ of $\frac{1}{2}$ of 6 = 3.

MENTAL.

4 is $\frac{2}{3}$ of what number? 6? 10? 12? 3? 5? $\frac{4}{5}$? $\frac{6}{7}$?

6 is $\frac{3}{4}$ of what number? 9? 15? 3? 4? 5? $\frac{6}{7}$? $\frac{9}{10}$?

8 is $\frac{4}{5}$ of what number? 12? 20? 4? 1? 3? $\frac{4}{5}$? $\frac{8}{9}$?

10.

What part of 3 is 2? Or, 2 is what part of 3?

SOLUTION.

1 is $\frac{1}{3}$ of 3.

2 is $\frac{2}{3}$ of 3,

MENTAL.

What part of 2 is 1? of 3? of 4? of 5? of 12? of 21?

What part of 5 is 1? is 2? is 3? is 5? is 10? is 15?

What part of 10 is 5? is 2? of 12 is 6? is 4? is 3?

What part of 3 is 3? is 6? is 12?

11.

a. $\frac{2}{3} \div 2 =$ what?

SOLUTION.

$$\frac{2}{3} \div 2 = \frac{1}{3}$$

MENTAL.

$\frac{3}{5} \div 3 =$ what? $\frac{6}{7}$? $\frac{12}{20}$? $\frac{9}{10}$? $\frac{21}{4}$? $\frac{30}{35}$? $\frac{9}{75}$?

$\frac{5}{7} \div 5 =$ what? $\frac{10}{16}$? $\frac{30}{40}$? $\frac{25}{33}$? $\frac{20}{21}$? $\frac{40}{7}$? $\frac{40}{16}$?

WRITTEN.

$\frac{21}{27} \div 12 =$ what? $\frac{48}{50}$? $\frac{144}{12}$? $\frac{1728}{140}$? $\frac{1440}{25}$? $\frac{3500}{7}$?

$\frac{70}{85} \div 25 =$ what? $\frac{105}{15}$? $\frac{700}{25}$? $\frac{1050}{15}$? $\frac{3535}{101}$? $\frac{1085}{225}$?

b. $\frac{2}{3} \div 2 =$ what?

SOLUTION.

$$\frac{2}{3} \div 2 = \frac{2}{6}$$

MENTAL.

$\frac{1}{3} \div 2 =$ what? $\frac{3}{5}$? $\frac{5}{7}$? $\frac{5}{9}$? $\frac{7}{10}$? $\frac{11}{3}$? $\frac{14}{7}$? $\frac{7}{4}$?

$\frac{1}{3} \div 5 =$ what? $\frac{1}{2}$? $\frac{2}{3}$? $\frac{3}{4}$? $\frac{3}{5}$? $\frac{4}{7}$? $\frac{7}{8}$? $\frac{9}{10}$?

WRITTEN.

$$\begin{array}{l} \frac{2}{3} \div 3 = \text{what?} \quad \frac{1}{4} ? \quad \frac{2}{5} ? \quad \frac{5}{6} ? \quad \frac{1}{7} ? \quad \frac{8}{9} ? \quad \frac{7}{10} ? \quad \frac{13}{18} ? \quad \frac{21}{30} ? \quad \frac{25}{37} ? \\ \frac{2}{3} \div 5 = \text{what?} \quad \frac{1}{3} ? \quad \frac{3}{4} ? \quad \frac{4}{5} ? \quad \frac{1}{5} ? \quad \frac{7}{8} ? \quad \frac{5}{9} ? \quad \frac{18}{21} ? \quad \frac{27}{35} ? \quad \frac{41}{50} ? \\ \frac{3}{4} \div 9 = \text{what?} \quad \frac{3}{5} ? \quad \frac{5}{7} ? \quad \frac{13}{19} ? \quad \frac{20}{21} ? \quad \frac{23}{27} ? \quad \frac{48}{75} ? \quad \frac{65}{100} ? \quad \frac{75}{112} ? \quad \frac{81}{125} ? \end{array}$$

12.

$$3\frac{1}{5} \div 2 = \text{what?}$$

OPERATION.

$$\begin{array}{r} 2 \) \ 3\frac{1}{5} \\ \underline{1\frac{3}{5}} \end{array}$$

WRITTEN.

$$\begin{array}{l} 4\frac{2}{3} \div 2 ? \quad 8\frac{1}{7} ? \quad 10\frac{8}{9} ? \quad 24\frac{11}{17} ? \quad 148\frac{16}{21} ? \\ 5\frac{1}{5} \div 5 ? \quad 10\frac{3}{4} ? \quad 10\frac{2}{3} ? \quad 15\frac{1}{4} ? \quad 20\frac{2}{7} ? \\ 8\frac{2}{5} \div 7 ? \quad 11\frac{2}{3} ? \quad 24\frac{1}{3} ? \quad 86\frac{3}{9} ? \quad 163\frac{1}{10} ? \\ 9\frac{3}{7} \div 8 ? \quad 17\frac{1}{8} ? \quad 93\frac{7}{8} ? \quad 125\frac{1}{2} ? \quad 347\frac{3}{7} ? \\ 14\frac{1}{2} \div 10 ? \quad 25\frac{3}{5} ? \quad 8\frac{2}{3} ? \quad 9\frac{7}{8} ? \quad 308\frac{1}{5} ? \end{array}$$

SPECIAL NOTICE.—The dot “.” placed in the following operations, denotes cancellation. This expedient is adopted partly to test its merits as compared with the present unsightly style of cancellation, but principally because the want of suitable type where this is to be printed, compels the invention of some new means of indicating cancellation.

$$a. \quad \frac{1}{2} \text{ of } \frac{6}{7} = \text{what?}$$

OPERATION.

$$\frac{\overset{3}{\cancel{6}}}{7} \times \frac{1}{\underset{2}{\cancel{2}}}$$

SOLUTION.

$$\frac{6}{7} \times \frac{1}{2} = \frac{6}{7} \div 2 = \frac{3}{7}$$

(To be read, $\frac{1}{2}$ of $\frac{6}{7} = \frac{6}{7}$ divided by 2, etc.)

In this operation, make the multiplicand, $\frac{6}{7}$, the prime object of attention. Upon it we are operating. According to the solution, to multiply it by $\frac{1}{2}$ we divide it by 2. Having done so in the most convenient way, by dividing its numerator, we write the new numerator in its stead, and the modified multiplicand, $\frac{3}{7}$, is itself the answer. There is neither necessity nor desirability for writing $= \frac{3}{7}$ as is now so universally done. The 2 is cancelled to get it out of the way, as the operation which it indicates has been performed, and the 6 is cancelled to make room for the numerator of the

answer, which is not 3 times 1, but simply 3, and the denominator is 7, and not 7 times 1.

MENTAL AND WRITTEN.

- $\frac{1}{2}$ of $\frac{2}{4}$ = what? $\frac{4}{6}$? $\frac{6}{7}$? $\frac{8}{8}$? $\frac{8}{10}$? $\frac{10}{3}$? $\frac{16}{20}$? $\frac{18}{25}$?
 - $\frac{1}{3}$ of $\frac{3}{4}$ = what? $\frac{3}{5}$? $\frac{6}{7}$? $\frac{6}{8}$? $\frac{9}{10}$? $\frac{12}{15}$? $\frac{12}{20}$? $\frac{24}{2}$? $\frac{30}{3}$?
 - $\frac{1}{4}$ of $\frac{4}{5}$ = what? $\frac{8}{9}$? $\frac{12}{2}$? $\frac{1}{5}$ of $\frac{10}{15}$? $\frac{1}{6}$ of $\frac{12}{13}$? $\frac{1}{10}$ of $\frac{20}{3}$?
- b. $\frac{1}{2}$ of $\frac{3}{7}$ = what?

OPERATION.

$$\frac{\frac{3}{7}}{14} \times \frac{1}{2}$$

SOLUTION.

$$\frac{3}{7} \times \frac{1}{2} = \frac{3}{7} \div 2 = \frac{3}{14}$$

(To be read, $\frac{1}{2}$ of $\frac{3}{7}$ = $\frac{3}{7}$ divided by 2, etc.)

According to the solution, to perform this operation, we must divide the multiplicand, $\frac{3}{7}$, by 2. We cancel the divisor 2 to get it out of the way, and the denominator 7 to make room for the new denominator 14 of the answer $\frac{3}{14}$.

MENTAL AND WRITTEN.

- $\frac{1}{2}$ of $\frac{3}{4}$ = what? $\frac{3}{5}$? $\frac{5}{6}$? $\frac{1}{3}$? $\frac{1}{2}$? $\frac{7}{9}$? $\frac{11}{12}$? $\frac{15}{2}$? $\frac{21}{13}$?
- $\frac{1}{3}$ of $\frac{2}{3}$ = what? $\frac{2}{5}$? $\frac{1}{3}$? $\frac{1}{5}$? $\frac{1}{2}$? $\frac{4}{5}$? $\frac{5}{6}$? $\frac{8}{10}$? $\frac{10}{12}$?
- $\frac{1}{4}$ of $\frac{3}{4}$ = what? $\frac{2}{3}$? $\frac{1}{2}$? $\frac{1}{4}$? $\frac{1}{5}$? $\frac{5}{6}$? $\frac{6}{2}$? $\frac{7}{8}$? $\frac{9}{10}$?
- $\frac{1}{9}$ of $\frac{7}{8}$ = what? $\frac{10}{11}$? $\frac{3}{9}$? $\frac{5}{7}$? $\frac{13}{3}$? $\frac{20}{7}$? $\frac{19}{20}$? $\frac{1}{21}$? $\frac{15}{33}$?

NOTE.—If the class is not prepared, on account of being too young, to take the next case, it may be omitted, as all the examples under it may be solved by the preceding one.

- c. $\frac{1}{6}$ of $\frac{9}{7}$ = what?

OPERATION.

$$\frac{\frac{9}{7}}{14} \times \frac{1}{6}$$

SOLUTION.

$$\frac{9}{7} \times \frac{1}{6} = \frac{9}{7} \div (2 \times 3) = \frac{3}{7} \div 2 = \frac{3}{14}$$

(To be read, $\frac{1}{6}$ of $\frac{9}{7}$ = $\frac{9}{7}$ divided by times 2 =, etc.)

According to the solution, to perform this operation, we must divide $\frac{9}{7}$ by 3 times 2. We cancel the *whole* divisor 6, and write in its place the *partial* divisor 2, as we are not yet ready to use it. Dividing by 3, we cancel the numerator 9, to get it out of the way, and write in its stead the new numerator 3. We now cancel the remaining divisor 2, and dividing $\frac{3}{7}$ by it, cancel the denominator 7, and write in its stead the new denominator 14 of the answer $\frac{3}{14}$.

WRITTEN.

$$\begin{aligned} \frac{1}{6} \text{ of } \frac{4}{7} &= \text{what?} & \frac{1}{10} \text{ of } \frac{5}{6} &? & \frac{1}{10} \text{ of } \frac{4}{7} &? & \frac{1}{10} \text{ of } \frac{15}{24} &? & \frac{1}{9} \text{ of } \frac{6}{10} &? \\ \frac{1}{4} \text{ of } \frac{6}{7} &= \text{what?} & \frac{1}{4} \text{ of } \frac{10}{11} &? & \frac{1}{8} \text{ of } \frac{10}{12} &? & \frac{1}{8} \text{ of } \frac{12}{5} &? & \frac{1}{12} \text{ of } \frac{15}{16} &? \\ \frac{1}{12} \text{ of } \frac{6}{7} &= \text{what?} & \frac{1}{12} \text{ of } \frac{8}{9} &? & \frac{1}{12} \text{ of } \frac{9}{10} &? & \frac{1}{15} \text{ of } \frac{10}{4} &? & \frac{1}{15} \text{ of } \frac{4}{9} &? \end{aligned}$$

In these examples the fractions may be most conveniently divided by dividing their numerators, and multiplied by dividing their denominators.

$$d. \quad \frac{2}{3} \text{ of } \frac{9}{10} = \text{what?}$$

OPERATION.

$$\frac{\frac{3}{10} \times \frac{2}{3}}{5}$$

SOLUTION.

$$\frac{9}{10} \times \frac{1}{3} = \frac{9}{10} \div 3 = \frac{3}{10}$$

$$\frac{9}{10} \times \frac{2}{3} = \frac{3}{10} \times 2 = \frac{3}{5}$$

(To be read, $\frac{1}{3}$ of $\frac{9}{10} = \frac{9}{10}$ divided by 3 = $\frac{3}{10}$; $\frac{2}{3}$ of $\frac{9}{10} = 2$ times $\frac{3}{10}$, or $\frac{3}{5}$.)

According to the solution, to find $\frac{1}{3}$ of $\frac{9}{10}$, we must divide it by 3. Canceling the divisor 3, as of no further use, we divide $\frac{9}{10}$ by it, and write the new numerator 3 in place of the former numerator 9, which we cancel. To find $\frac{2}{3}$ of the multiplicand, we multiply $\frac{3}{10}$ by 2. As 2 times $\frac{3}{10} = \frac{3}{5}$, we cancel the multiplier 2 and the denominator 10, and write in its place the new denominator of the answer, $\frac{3}{5}$.

MENTAL AND WRITTEN.

$$\begin{aligned} \frac{3}{4} \text{ of } \frac{4}{6} &= \text{what?} & \text{of } \frac{4}{9} &? & \text{of } \frac{8}{9} &? & \text{of } \frac{12}{18} &? & \text{of } \frac{20}{21} &? \\ \frac{2}{3} \text{ of } \frac{3}{4} &= \text{what?} & \text{of } \frac{3}{6} &? & \text{of } \frac{6}{8} &? & \text{of } \frac{9}{10} &? & \text{of } \frac{21}{22} &? \\ \frac{3}{5} \text{ of } \frac{5}{6} &= \text{what?} & \text{of } \frac{10}{12} &? & \text{of } \frac{15}{21} &? & \text{of } \frac{25}{27} &? & \text{of } \frac{30}{33} &? \\ \frac{7}{8} \text{ of } \frac{8}{14} &= \text{what?} & \text{of } \frac{16}{21} &? & \text{of } \frac{32}{7} &? & \text{of } \frac{8}{7} &? & \text{of } \frac{48}{49} &? \end{aligned}$$

DIVISION BY A FRACTION—HOW TO TEACH IT.

BY PROF. KNOWLTON.

True teaching begins by commencing. It goes frequently back to "first things," and often insists on review. Before trying to teach another, it teaches itself four things about that other:

1st.—What he *knows*.

2d.—What he *thinks* he knows.

3d.—What he *partially* knows.

4th.—What he *don't* know at all.

And if every teacher of us all should frequently ask himself these four questions in regard to himself it might promote

thoroughness and prevent self-conceit—two very good things for us all.

Never try to teach a child a new thing without beginning back among the things he really knows, and setting his mind to going over or running along through the old familiar things which lie along the straight line toward the new thing you wish him to learn. "From known to unknown," that's the corner-stone of true teaching; don't forget that, and the younger or the less trained the pupil's mind the more do we need to remember and heed it.

Go at it as a good preacher does: first make sure that your hearers—your should-be hearers—really do *know* the meaning of every old *part* which you purpose to use in reaching the new *whole*, and then "the common people will hear *you* gladly."

In this case, for example, if we set out to teach division by a fraction to an ordinary class of children of the usual age and average capacity of those to whom we commonly try to teach it, they might justly look up to us, at the very outset, and say, "*Division we know, and a fraction we know, but division by a fraction we do not know.*" Now how shall we lead them or guide them out from that they *do know* into what they *know not*?

Suppose we try thus: Go back to the known, and come up toward the unknown through definitions and questions something like these:

A number is a unit, or a collection of units. A fraction is a part-unit, or a collection of part-units. Division is finding how many times one number contains another *of the same kind*. In whole numbers it is finding how many times one unit, or collection of units, contains itself, or another collection of units of the "*same kind*."

In like manner, or, "in the same way," as we commonly say, though it is not strictly correct, division by a fraction is finding how many times one part-unit, or collection of part-units, contains itself, or another collection of part-units *of the same kind*.

Don't forget this little phrase, "*of the same kind*." Pupils constantly forget it, and teachers seldom repeat it and review it as they should.

"But what if one part-unit, or collection of part-units, is *not* of the same kind as the other?" Then *make* it so. How? By *reduction*. And what is reduction? Changing *form* without changing *value*. This is another important first-thing, or *fact*, too frequently slighted. Bring it up constantly, review it every few days, keep it before the scholars so steadily that they can't forget it. Any unit, or collection of units, may be changed; that is, reduced to any part-unit we want. Why do we need to change them at all? To make them alike. And why must we have them alike? Because division is finding how many times one number contains another *like* number—that is, another number of the same kind. It would be well to say *quantity* instead of

number, but young scholars do not as clearly understand the meaning of *quantity* as of number, unit and part-unit.

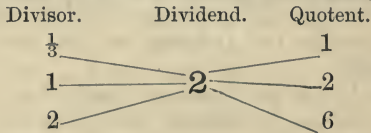
In dividing by a fraction, two cases occur:

1st.—When the dividend is whole.

2d.—When it is fractional.

And, first, to divide a whole number by a fraction. Suppose we wish to divide 2 by $\frac{1}{3}$. We may question, and get answers thus: Are they *like* quantities? No. Why? Because one is whole and the other fractional. What is the unit of the dividend? One. What is the unit of the divisor? $\frac{1}{3}$, that is, itself; it is its own unit, just as unity is. Can we make them have the same unit? Yes. How? By reduction. Yes, but which shall go to the other? Can we make the $\frac{1}{3}$ into units? Certainly not. Can we change the unit into thirds? Very easily. Well, do it, and what have we? One is *three* thirds, and two is *six* thirds.

Are dividend and divisor alike now? Yes. Why? Because they are both thirds, or both have one-third for their unit. Yes, that is right, and now please notice that one goes into six (or six contains one) six times, whether the one and the six are cakes, apples, tenths, or hundredths, whole things, or part things. No matter *what* they are as long as they are *alike*. So what is our quotient? Six. Is it larger or smaller than the dividend? Larger. How much larger—how many times as large? Three times as large. Why? Because the divisor is three times as small as unity. Do you remember the fact about the relation of divisor and quotient to each other? Yes. Please state it. “The larger the divisor the smaller the quotient, and the smaller the divisor the *larger* the quotient.” Yes, that’s good. You see *one* grows *larger* as the *other* grows *smaller*—one goes *up* as the other goes *down*. It’s a kind of mathematical see-saw, we may say, divisor and quotient have the two ends of the plank, and the plank rests over, or upon, or across the dividend. When divisor goes *up*, quotient goes *down*. When divisor goes three times as high, that is, becomes three times as large, quotient goes three times as low; that is, becomes three times as small. We may show it by a diagram, thus:



Let your eye follow from any divisor you choose along a straight line right *through* the dividend out to the quotient-figure at the other end, and you will *see* what I mean by the “mathematical see-saw”—how quotient swings *down*, that is, grows larger, or gets heavier, just as divisor swings *up*, that is, grows smaller, or gets lighter.

You know when we divide *any* number by 1 the quotient *equals* the dividend. When we divide by any divisor *greater* than

1, the quotient is *less* than the dividend, and when we divide by any divisor *less* than 1 the quotient is *greater* than the dividend. Now, *any* fraction, any *proper* fraction, is *less* than 1, so when we *divide* by any proper fraction, the quotient must be greater than the dividend.

And here the teacher should make fifteen or twenty simple problems like that given above, and have the scholars give the answers, the quotients, at once. Let the dividend be less than 12, and the divisor any fraction having 1 for its numerator with any denominator less than 13. Thus, $\frac{1}{2}$ into 1 = 2; $\frac{1}{2}$ into 2, quotient, 4; into 4, 8; $\frac{1}{3}$ into 1, quotient 3; $\frac{1}{3}$ into 2, quotient 6; into 7, 21; into 11, 33, and so on.

Now suppose we want to divide 2 by *two* thirds, 2 by $\frac{2}{3}$. Take these steps: 2 divided by 1 equals what? 2. $2 \div \frac{1}{3} = ?$ (Teach pupils to use and read all the signs and plain contractions possible. Show them that the last collection of signs really *means*, and should be *read*, “two divided by one-third equals what?” Show them how much time and space they may save by using signs.) $2 \div \frac{1}{3} = ?$ 6. 2 by 2-3 = ? (Here show how printers frequently print a fraction with two large figures, having a short dash or hyphen between them, putting the numerator *before* the hyphen and the denominator *after* it. Explain that the hyphen is shorter and heavier than the sign “—” (minus), so that they never need mistake either for the other.) $2 \div 2-3 = ?$ 3. Yes, that’s right. Now explain. Show *how*, tell *why*. Well, *two* is twice as great as *one*, and if dividing 2 by *one* third gave the quotient 6, dividing by *two* thirds, which is twice as great as *one* third, must give the quotient 3, which is twice as *small* as 6.

In comparing two numbers or quantities we may express their relation to each other in two ways; we may say the first is *half* as large or *twice* as small as the second. Either is right, but it is generally better to say twice as small, because it sets the larger and the smaller over against each other more plainly and sharply, and throws them into contrast more clearly and exactly than any other way.

Ask “Why?” “Why?” “Why?” at every step, and take no answer which does not plainly show that the pupil clearly understands “*why*.” Now let us do one more. Divide 7 by 7-8. Quotient? 8. Good. How do you get it? Explain. 1 into 7 seven times. 1 is 8-8, and 7 is 56-8, and 8-8 into 56-8 seven times, just as truly as 8 *apples* into 56 *apples* go 7 times. 1-8 is eight times as *small* as 8-8, or 1, so, according to our see-saw principle, the quotient of division by 1-8 must be 8-8, or 1, that is, 8 times 7, which is 56, the right quotient. And, finally, when we divide by 7-8, which is 7 times as *large* as 1-8, we must get a quotient 7 times as small as the quotient we got when dividing by 1-8, that is, 1-7 of it. But, when we divided by 1-8, we got 56 for a quotient; hence, when we now divide by 7-8, we

get a quotient seven times as *small* as 56, that is, 1-7 of 56, which is 8.

Go over this three times with them, slowly, distinctly, carefully. Avoid all impatience, hurry, or confusion. Then have them go over it to you, in the same way. Don't *call* them dull, or stupid, no matter how much they may *seem* so. Remember that you are nearly as likely to be dull and stupid in your *teaching* as they in their *learning*.

Then take other similar problems and repeat, repeat, repeat, day after day, until you *know* that they *do* really understand it. They *can* understand it, and they *will*, if the teacher knows how to teach, and will really take pains to prepare the lesson beforehand, and will rehearse it so frequently as to become thoroughly familiar with it himself.

Try this way. Combine it with others. Adapt it, extend it, repeat it, and, if it doesn't succeed, why, you have different pupils from any I ever met, or, they have a very different teacher.

[In the second paper we will talk of Case II, in which the dividend is also a fraction.]

PERSONAL.

We are glad to see the name of George W. Minns, so well known to our California Educational Department, on the Faculty roll of Washington University, St. Louis, Mo. He has been elected to the chair of Mathematics and Astronomy. His immediate predecessor was Prof. William Chauvenet, who is said to rank as second only to Prof. Pierce as a mathematician, and is the author of a large work on Astronomy and of a work on Plane and Spherical Trigonometry. *His* predecessor was Gen. Schofield, whom we are soon to have on this coast, having been appointed to succeed Major-Gen. Thomas as the head of the Pacific Military Department.

Mr. Minns, as a scholar and a class-teacher, stood at the very head of the profession on this coast,—had not, in our opinion, a superior. He never attempted, we believe, to teach a subject without first making himself master of it, and in all his statements, explanations and demonstrations to a class he was one of the clearest and most explicit teachers we have ever known. Mr. M. is a graduate of Harvard University, and studied law in the office of Mr. Choate, in Boston, and his expositions of the Constitution of the United States to his classes in this city were such as few teachers could give to pupils. He is a good classical scholar, and in mathematics received the personal commendation of Prof. Pierce, and a recommendation to a naval appointment. In recent years he has devoted his attention mainly to the natural sciences, somewhat to the neglect of his mathematical studies. He labors under the additional disadvantage of entering upon

his duties in the middle of a term, after the classes have commenced the text-books in such studies as Church's Calculus, Howison's Analytical Geometry, including not only all that we have in ordinary application of algebra to geometry and conic sections, but also the abridged notation, the discussion of the "New Methods," and all ordinary and transcendental curves. But Mr. M. carries into his new field the spirit and enthusiasm of the student, the energy and perseverance of the scholar in love with the work, and therefore these slight disadvantages are only spurs to stimulate him. His work there already gives evidence of success. Mr. Minns made many friends during his residence on this coast, but like every other quiet student, he had those doubtful friends, who had their own reasons for systematically depreciating him. His merit has now raised him to his proper place, and we trust, and have the largest faith to believe, that he will fill the position to the satisfaction of the Board of Trustees, who so earnestly desired him to accept it, and to every one concerned in the interests of the Institution, which is endowed by the State and patronized by some of the wealthiest gentlemen in St. Louis. Besides the College proper, there is a preparatory school of over five hundred pupils. Success to our old friend. We extend to him, across the continent, the right hand of fellowship.

C.

PAY ACCORDING TO WORK—WOMAN'S PROPOSITION.

Bancroft Library

Much discussion has been held, of late, upon this topic, having special bearing upon woman's work as compared with man's. In the school room, if a woman can do a man's work, in kind and amount, it is claimed by many, and perhaps quite justly, that the pay to the sexes should be the same. If this principle is a correct one, advanced by woman herself, we suppose it will be admitted that if they *can not* perform the same labor then the reward shall differ. It should follow, then, that when one woman does that which another *cannot* do, either intellectually or physically, in the school room, the pay should be different accordingly. Now it is known to be true that the labor of managing, training, disciplining a class of boys is generally very much more difficult than the corresponding labor with a class of girls. And it is equally well known, to all familiar with the subject, that there are very many females in the school department who cannot maintain their standing in a class of boys—cannot discipline classes, and are obliged to give up whenever they make the attempt, and take a class of girls; that those who do succeed wear out sooner, and are often obliged to change to girls' classes to save health. Still the two classes of teachers draw the same pay. One woman, then, performs work, year after year, in the school, that another cannot possibly perform, and receives no

more pay, and the distinction in kind and amount is not recognized. Will woman say that this is just?

If the distinction is admitted, it may be said that many other distinctions, similar, will follow; and as no two teachers are alike, but differ in intellectual stamina, in accomplishments, in physical energy, in method, and in other points, there would be no end to distinctions, and, of course, no end to *gradations* of pay. Well, we simply make the suggestions, and submit the question for consideration. P.

REPORT OF PUBLIC SCHOOLS.

ROLL OF HONOR.

ANTELOPE PUBLIC SCHOOL. *Tehama county.* W. A. Sanders. Principal; Mary A. Underhill, Assistant.

Amelia Shackelford, Jennette Underhill, Fanny Knight, Augusta Herrick, Myra Hooker.

John W. Shackelford, Robert Patterson, L. M. Clark, Frank Bacon, Urbane Herrick, Willie Ward, W. M. Fuller, T. B. Lofton, B. W. Waldrop.

Whole number enrolled, 75; average number belonging, 60; average daily attendance, 56.

The average daily attendance in this school for the past six years has been as follows: Morris, 1st term, 36; 2d term, 37; Sanders, 34; Shoup, 34; Biggs, 29; Sanders, 55; Sanders, 50; Sanders (present term), 56.

GRASS VALLEY INTERMEDIATE SCHOOL. *Nevada county.* Miss S. M. Wells, Teacher. For the month of April, 1870:

Alice Dorsey, Dora Derby, Della John, Clara Warner, Matilda Schroeder, Mary Dawes, Sarah Pascoe, Lizzie McGinnis, Kate Fairbanks, Jennie Rowe and Mary Finnie.

Willie Cowin, Robert Finnie, George Reiley, Willie Townsend, Archie Conaway, George Woods, Willie Sleep, Charlie Clinch, Thomas Marowy, Frank Dodge, John and Willie Frank, Thomas Fayhee and Frank Taylor.

Total number of pupils enrolled for the month of April, 73; average number belonging, 66; average daily attendance, 58; percentage of attendance, 87.

CAMPTONVILLE PUBLIC SCHOOL. *Yuba county.* Samuel T. Black, Teacher. For the month ending May 6th:

Nellie Newberry, R. A. Miller, Lizzie Crowell, Clara DeCray, Flora Variel, Nellie Miller, Lily Calvin, Jennie Price.

Harry F. Corey, Jason Meek, Harry Brooks, Willie Calvin, Guardy Dickinson, Valentine McMurray, Horace Eastman, Jas. Brooks.

MAIZELAND DISTRICT PUBLIC SCHOOL. *Los Angeles county.* D. Ross, Teacher: For the three months ending April 22d:

Percentage for Scholarship and Deportment: Mollie Stewart,

100; Alydia Shugg, 99½; Ann Stewart, 98½; Emma Standlee, 97; Virginia T. Bowers, 96; Martha A. Marrill, 96; Virginia Simms, 95½; Johanna Shugg, 95; A. Crockett Bowers, 95.

EDITORS' DEPARTMENT.
EDUCATIONAL CONVENTIONS.

Two Educational Conventions will assemble at Cleveland, Ohio, during the month of August of the present year. The "American Normal School Association" commences its session on Monday, August 15th, and closes on the 16th. On Wednesday, the 17th, the "National Teachers' Association" will begin; it will continue in session during the 18th and 19th. These meetings promise to be of great interest and much profit to those who attend them. We hope the public, also, will reap a good share of the benefit; not only from the brightening and enlarging of old ideas and the acquisition of new ones by the members themselves, but also from the better portions of the lectures and discussions coming before the people in a more permanent form than mere utterance from the rostrum. However, improvement in its members cannot but be felt as they return to their respective places of (home) work in improvement among the people. The varied programme of exercises before us—showing that the work will begin at 9 A. M., and continue until late in the afternoon of each day—indicates that the Conventions "mean business." Similar assemblages heretofore have not been remarkable for—one might say—anything. We hope better things from these, judging from some of the subjects marked out for discussion as indicated by the programme.

One other meeting, important to the American world of letters, will take place in July of the present year—that of the "American Philological Association." The place of meeting is Rochester (N. Y.); time, 26th of July.

We regret that these Conventions do not take place during the time of the "Excursion" of California teachers to the Eastern States. Many among them would be pleased and profited by attendance.

REMOVAL.—Iverson, Blakeman Taylor & Co. have removed from 47 and 49 Green Street to 138 and 140 Grand Street, New York. Their manufactory, sales-room and offices constitute one of the handsomest stores in the city. Such enterprise merits success.

DEPARTMENT OF PUBLIC INSTRUCTION.

BOARD OF STATE NORMAL SCHOOL TRUSTEES.

THE Board of State Normal School Trustees met at the office of the Superintendent of Public Instruction on Friday, April 25th, 1870, at one o'clock P. M. *Present*—Gov. Haight, State Superintendent Fitzgerald, *ex officio* members and Messrs. Denman, Weller, Braly, Moulder. *Absent*—Mr. Ryland.

Gov. Haight was elected President of the Board, and Superintendent Fitzgerald, in accordance with the provision of the Act locating and establishing the State Normal School, assumed the duties of Secretary.

The appointed members of the Board then, according to the requirements of the Normal School Act, drew lots to determine their terms of office respectively, with the following result, viz: Mr. Weller, two years; Mr. Moulder, four years; Mr. Ryland, six years; Mr. Denman, eight years; Mr. Braly, ten years.

The President, on motion, appointed an Executive Committee as follows: Fitzgerald, Denman and Weller.

A paper proposing Rules and Regulations for the government of the State Normal School was referred to the Executive Committee.

On motion of Superintendent Fitzgerald,

Resolved, That the Executive Committee be and are hereby instructed to initiate measures for the erection of a State Normal School building or buildings as soon as practicable, and report at the next meeting of the Board.

(Mr. Denman in the Chair.) On motion of Superintendent Fitzgerald,

Resolved, That it is the sense of this Board, that it is inexpedient at present to erect any boarding-house, but that we proceed at once to the erection of a State Normal School building.

On motion of Mr. Moulder, the Executive Committee was instructed to procure plans for the erection of a State Normal School building at an expense not to exceed forty-five thousand dollars; said building to be so arranged as that it will admit of extension as the resources of the Board will permit.

Dr. Lucky was re-elected Principal of the School. Professor H. P. Carlton was re-elected Vice Principal; Miss E. W. Hough-

ton and Mrs. D. Clark were re-elected Assistant Teachers; Miss M. Lewis was re-elected Principal of the Training School. The subject of the election of another assistant teacher was referred to the Executive Committee, with power to act.

The salaries of teachers were continued as they were last year. Adjourned to meet at the call of the Secretary.

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STATE NORMAL TRAINING SCHOOL.

Under the able management of Miss M. Lewis, the Training Department of our State Normal School is succeeding admirably. With fuller opportunities for the development of the *system* taught by her, results may be expected that will be most gratifying to all friends of *right education* on the Pacific coast. The closing exercises of the Training Department on Friday, 20th of May, were very interesting, and were witnessed with satisfaction by the audience. As the occasion, in some of its features and suggestions, was a memorable one, we think it is well to preserve the entire programme in the pages of the TEACHER:

MORNING EXERCISES:

Lesson—10th Grade—Common Objects,	Cornelia Greer
Recitation—"Don't Kill the Birds,"	Minnie Gagan
Recitation—"The Bird's Nest,"	Ella Herkimer

Music.

Chorus—"Give, said the Stream."	
Review—9th Grade—Arithmetic,	Sarah Rightmire
Review—9th Grade—"Human Body,"	Sarah Rightmire
Declamation—"The World would be Better,"	Andrew Hym

Music.

Chorus—"The Little Brook."	
Review—8th Grade—Place-Geography,	Ada Oglesby
Exercises—Calisthenics,	Ada Oglesby
Recitation—"How goes the Money,"	Elsie Mikelson

Music.

Chorus—"Household Pets."	
Exercises in Reading and Spelling,	M. Lewis
Review—6th Grade—Local Geography,	Emily McNeal

Music.

Chorus—"Row, Boys, Row."	
Lesson—10th Grade—Number 1st and 2d Step,	Cornelia Greer
Review—6th Grade—Form and Color,	M. Lewis
Exercises—Calisthenics,	Emily McNeal
Review—8th Grade—Size,	Ada Oglesby

Music.

Chorus—"Jolly Little Clacker."

AFTERNOON EXERCISES.

Lesson—9th Grade—Animals,	Sarah Rightmire
Exercises—Calisthenics,	Sarah Rightmire

Music.

Chorus—"Daffy-Down-Dilly."	
Review—6th Grade—Plants,	Emily McNeal
Lesson—6th Grade—Objects, 4th Step,	Emily McNeal
	Music.
Chorus—"Jennie in the Dell."	
Solo—"Stay, Gentle Moon,"	Dora Kellett
Lesson—8th Grade—Birds,	M. Lewis
Recitation—"Baby's Stocking,"	Dora Reese
	Music.
Chorus—"Two Brown Heads."	
Recitation—"Mouse-Traps,"	Josie Prior
Review—Common Objects, 3d Step,	Sarah Rightmire
	Music.
Chorus—"Sleigh-Ride."	
Recitation—"Old Bachelors,"	Mary Fletcher
Solo—"La Reine de Valse,"	Adel Joujon
Recitation—"Little Tot,"	Minnie Douglas
Recitation—"Listen,"	Lizzie Foreman
Solo—"Put me in my little Bed,"	Eva Withrow
Reading—"The Children,"	Maggie Todd
	Music.
Semi-Chorus—"I lay me down to Sleep."	
Address, and distribution of Diplomas, by	Superintendent O. P. Fitzgerald.

Diplomas were presented, by Superintendent Fitzgerald, to Misses Emily McNeal, Ada Oglesby, Sarah Rightmire and Cornelia Greer.

The regular programme was supplemented by a pleasing incident not "put down in the bill." On behalf of the young ladies associated with her as teachers in the Training Department, Superintendent Fitzgerald presented Miss Lewis with an elegant, rich and costly Photograph Album. Vice-Principal Carlton was also made the willing agent for the presentation to Miss Lewis of a napkin ring of peculiarly exquisite pattern and finish.

The next term of the Training Department of the State Normal School will begin simultaneously with the San Francisco public schools.

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OFFICIAL JOURNEYINGS.

The State Superintendent's visit to the Placer County Institute was brief, but pleasant. The shortness of his visit was occasioned by the pressure of other imperative engagements. Its pleasantness was the result of several causes, among which were these: The cordial greeting received from Superintendent Kinkade, his veteran predecessor, Mr. Goodrich, and the teachers generally; the hospitality of the citizens of Auburn, the delicious weather—the air being as balmy and as clear as could be

wished. The State Superintendent's address was delivered under difficulties, but was appreciated at its full value. It is presumed and hoped that the more important items of the proceedings will be furnished for THE TEACHER.

THE GREAT PUBLIC SCHOOL PICNIC AT WOODLAND.

The great May-Day picnic of the public schools of Yolo county, at Woodland, was one of those delightful occasions that leave a life-long pleasure in the memory. We were there, are glad of it, and are open to an invitation to the next one, at the same place with the same company. Superintendent Darby and Principal Stone will take the hint?

BOOK TABLE.

GERMAN PRIMER: Being an introduction to "First Steps in German." By M. TH. PREU. New York: G. P. Putnam & Son. 1870.

A decidedly meritorious little book,—and one whose neat binding, and clean white paper will be as attractive to the little people as the charming verses and bits of juvenile philosophy will be instructive and inspiring.

GUIDE TO WILLIAMS & PACKARD'S SYSTEM OF PENMANSHIP: For Teachers and Adepts. Published by Slote, Woodman & Co., 119 and 121 Williams street, New York.

This is a simple, clear, systematic, and really elegant system of Penmanship,—and very satisfactorily set forth in the tastefully executed volume before us. Teachers and adepts in the art of writing should have it—it would aid them so much in teaching pupils that accomplishment which is so useful and which so few possess, a *good handwriting*. Price, \$2 50. A. Roman & Co., San Francisco.

MORAL, INTELLECTUAL AND PHYSICAL CULTURE; OR, THE PHILOSOPHY OF TRUE LIVING. By PROF. F. G. WELCH, Instructor in the Department of Physical Culture in Yale College. New York: Wood & Holbrook, Publishers. 1869.

The scope of this work is vast, embracing the three great departments of human life—the Moral, the Intellectual and the Physical. So vast a subject, of course, could not be adequately treated in one volume, yet most men would be wiser and better from reading this one. Especially should those persons master its contents who have charge of the education of children. The "moral" and the "intellectual" portions are by no means bad; but the "physical," as was to be expected, is of special excellence. A. Roman & Co., San Francisco.

THE INSTITUTE READER AND NORMAL CLASS-BOOK. For the use of Teachers' Institutes and Normal Schools, and for self-training in the art of Reading. By WILLIAM H. COLE. Cincinnati: Wilson, Hinkle & Co.

This volume comes to us just as we go to press, therefore an examination of it is impracticable. A glance at the table of contents shows that subjects are discussed which always interest teachers. Parts I, II and III treat of

teaching reading in Institutes and Normal Schools (with examples for practice); Part IV talks of "Teachers' Institutes." We call the attention of those interested to the probable advantage of such a work would be in making Institutes interesting and useful.

PHILIP PHILLIPS' DAY-SCHOOL SINGER: For Public and Private Schools. Cincinnati: Wilson, Hinkle & Co.

This is a "simple," "progressive" and almost a "complete" elementary system of music—very well adapted to the use of schools, and to general practice.

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CALIFORNIA STATE NORMAL SCHOOL.

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JUNIOR CLASS—*First Session.*

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English Grammar—Brown's.
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Reading—Willson's Readers.
Orthography—Willson's.
Moral Lessons—Cowdery's.
Geometry—Marks' Elements.

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Algebra—Robinson's Elementary.
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Rhetoric—Boyd's.
Physiology—Cutter's.
U. S. History—Quackenbos'.
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General Exercises—Same as in the Junior Class.

REGULATIONS OF THE NORMAL SCHOOL.

1. All pupils, on entering the School, are to sign the following declaration: "We, the subscribers, hereby declare that our purpose in entering the State Normal School is to fit ourselves for the profession of Teaching, and that it is our intention to engage in teaching in the Public Schools of this State."

2. To enter the Junior Class male candidates must be seventeen years of age; and female candidates sixteen. To enter the Senior Class they must be one year older.

3. All applicants are required to present letters of recommendation from the County Superintendent of the county in which they reside. The holders of first or second grade teacher's certificates will be admitted without the above recommendation.

4. No pupil shall be entitled to a Diploma of Graduation who has not been a member of the School at least one term of five months.

GENERAL INFORMATION.

There will be Written Examinations and Public Exercises at the close of each term. The Graduating Exercises will be in March.

Pupils will be required to furnish their Text Books. Books for reference will be supplied by the School.

Good boarding can be obtained in private families at from twenty-five to thirty-five dollars per month.

REMOVAL OF THE SCHOOL.

In obedience to an Act passed by the last Legislature, the Normal School will be removed to the city of San Jose. This removal will not be made until suitable buildings are erected for the accommodation of the school. It is not probable that these will be ready before the end of the next school year.

The next session will commence in the city of San Francisco on the 1st day of June.

CALENDAR FOR 1870-71.

First Session begins June 1st, 1870.

First Session ends October 7th, 1870.

Fall vacation, one week.

Second Session begins October 17th, 1870.

Second Session ends March 11th, 1871.

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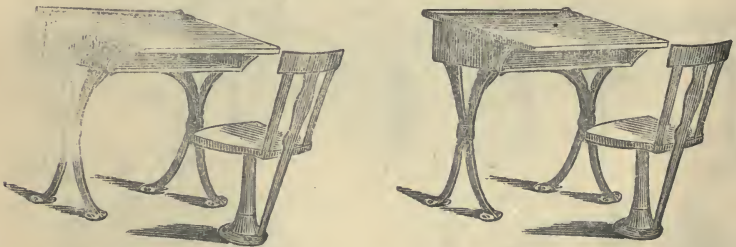
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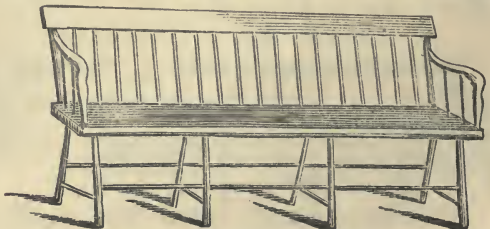
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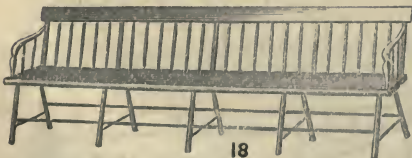
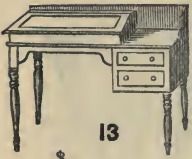
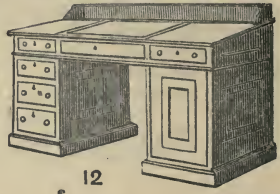
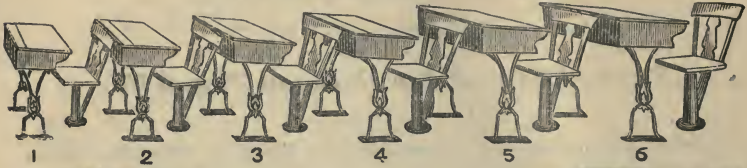
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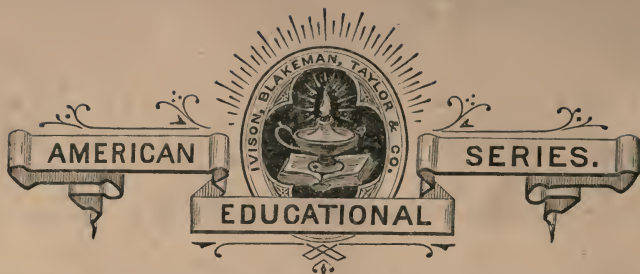
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