

Lecture on Learning

Charles D. Poston

Edited with an introduction by
Bernard L. Fontana

Charles D. Poston, Arizona.

"Lecture on Learning"

Foreign Religion Correspondence.



*The Illustrations and Maps
are included in the book
The Lectures in detail.*

*Printers will please preserve the
original manuscript of the book*

* WRITING TABLET *

P.S.

No. 4405

*Compositors please correct proof
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C.D.P.

Lecture on Learning



*Charles Poston (left) and Sabino Otero,
Chicago 1888. (Arizona Historical Society Collection)*

*Cover: The cover of the notebook in which
Poston recorded this "Lecture on Learning."
(Special Collections, the University of Arizona Library)*

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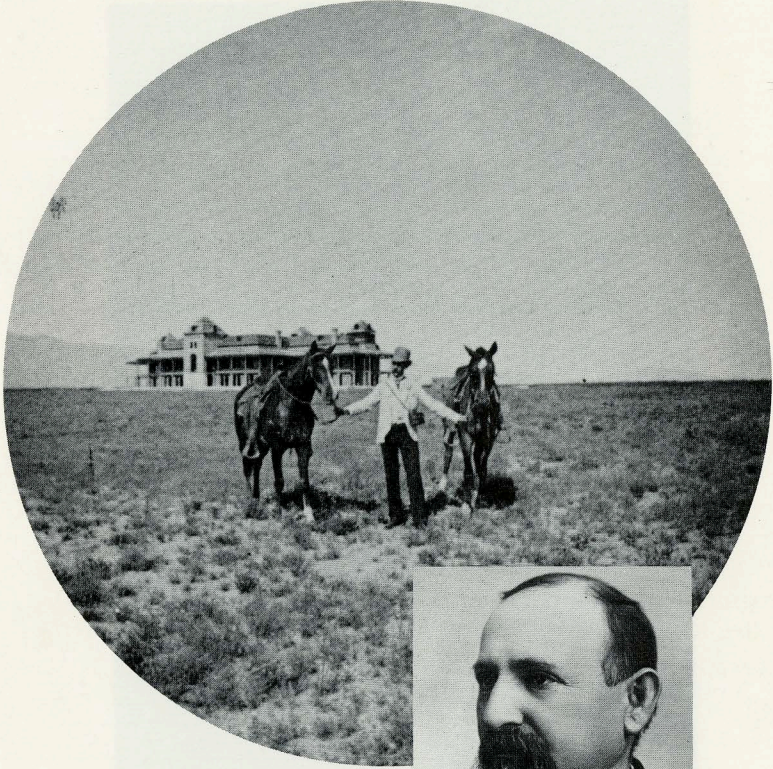
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Tucson
Friends of the University of Arizona Library
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*Dedicated to the memory of
Ann-Eve Mansfeld Johnson
founding president of the Friends of
the University of Arizona Library*



Old Main, the University of Arizona's first building, circa 1890. Jacob S. Mansfeld (inset), a member of the first board of regents, selected the initial forty-acre site for the University campus. (Special Collections, the University of Arizona Library, and the Arizona Historical Society Collection)

Foreword

As their contribution to the University's Centennial celebration, the Friends of the University of Arizona Library offer this "Lecture on Learning" by the man who was called the Father of the Territory. It was addressed by Poston ninety-five years ago to the Regents and dedicated to its students. Although the institution was established in 1885, the Legislature failed at first to provide it with either campus or budget. Thus it was not until October 1891 that it opened for instruction.

Until 1953 this manuscript was unknown. Then from a mysterious source it appeared in the University Library archives. Where had it been since 1890? Its resurrection in this year of celebration is a belated recognition of its author's prophetic vision and altruistic intention.

It is especially fitting that it appear with the imprint of the Library's Friends, a group founded in 1977 by the late Ann-Eve

Mansfeld Johnson, its first chairperson. As pointed out by Douglas D. Martin in *The Lamp in the Desert* (Tucson: The University of Arizona Press, 1960), it was only the stubborn determination of Ann-Eve's grandfather, Jacob S. Mansfeld, one of the first Regents, that kept the university from being stillborn. When neither county nor town made any effort to meet the Legislature's requirement that a forty-acre campus be provided, Regent Mansfeld himself selected the nucleus of the present campus and persuaded three public-spirited Tucsonans to donate it. That one was the town's leading saloon keeper and the other two were prosperous gamblers only enhances their philanthropic act.

All honor, then, to Legislature, grandfather, granddaughter and donors is the Friends' grateful wish in offering this their first publication.

Lawrence Clark Powell
Chairman



Charles D. Poston

Introduction

One writer called him a “queer genius;”¹ another, more charitable, wrote “noble genius.”² Either way, the Twentieth Territorial Legislature meeting in Phoenix early in 1899 said that he, “among all other pioneers, was pre-eminently the moving spirit and, in fact, may truly be said to be the Father of Arizona.” The act in which these words appeared was for relief of “Honorable Charles D. Poston for the valuable services rendered to Arizona by this pioneer citizen.”³ Relief took the form of a \$25 monthly old age pension for a destitute old man.

While he may not have been the sole “Father of Arizona,” it is true he was one of three men—the others being Samuel Heintzelman and William Wrightson—most responsible for the 1863 creation by Congress of an Arizona Territory separate from that of New Mexico.⁴ And it was Poston who easily defeated four other candidates in the 1864 election to become Arizona’s first delegate to Congress.⁵

Charles Debrille Poston was born in Kentucky on April 20, 1825. His father published a newspaper, the *Western Sentinel*, and the young Poston worked with him as a printer’s devil and delivery boy. At age 12 he was apprenticed to the clerk of Hardin County, Samuel Haycraft, and later became deputy clerk and husband of Haycraft’s daughter, Margaret. In February, 1851 he arrived in San Francisco to take a position in the surveyor’s office of the United States Custom House, a stint that lasted only until the end of 1853. By 1854 he was enroute by ship to Guaymas, Sonora, and

the beginning of his many mining ventures in neighboring Arizona.⁶

As soon as Arizona became a separate territory, Poston was appointed Arizona Superintendent of Indian Affairs, and sometimes accompanied by Treasury Agent and journalist J. Ross Browne, he made an 1863–64 inspection tour of Indians in the region’s southern and western portions. In an 1864 report he recommended that the federal government spend either \$50,000 in gold or \$100,000 in currency to build an irrigation canal on the proposed Colorado River Indian Reservation for the benefit of Yuma, Mohave, Yavapai, Hualapai, and Chemehuevi Indians.⁷ Irrigated agriculture remained a subject of lifelong interest, and in 1887 he published a 30-page booklet entitled *Irrigation* (Chicago: J.M.W. Jones Stationery & Printing Co., 1887).

Before Poston lost his seat as delegate to Congress in the territory’s second election and was defeated again in 1866, one of his accounts concerning Arizona Indians was published as *Speech of Hon. Charles D. Poston, of Arizona, on Indian affairs. Delivered in the House of Representatives, Thursday, March 2, 1865* (New York: E. Jones & Co., printers, 1865).

In 1867 he was off to Europe where he attended the Paris Exposition, a journey which resulted in a small book, *Europe in the Summer-time* (Washington, D.C.: M’Gill & Whitherow, printers, 1868). He returned to Washington to practice law and to work both as lobbyist and journalist.

In 1868 Secretary of State Seward sent Poston with J. Ross Browne, who had been

made Minister to China, to deliver the Burlingame Treaty to the Emperor of China and, among other matters, to make a study of farming methods in countries where irrigation was an ancient practice. His Asian travels resulted in another little book, one that included much of his correspondence, *The Parsees* (N.p.: privately printed, 1872). And after leaving the Orient he remained abroad, largely in London where he continued to promote Arizona mining interests as evidenced in part by his publication of *Where the Silver Goes* (London: n.p., 1873). He also used some of his overseas time working as a correspondent for the *New York Tribune*.⁸

The Philadelphia Exposition of 1876 was the lure that brought Poston back to the United States. He was paid as an American correspondent by a London newspaper and he found time to publish another book, *The Sun Worshipers of Asia* (San Francisco: A. Roman & Co., 1877). In 1877 he returned to Arizona as Register of the United States Land Office at Florence. During his stay in Florence he wrote his best-known work, *Apache-land* (San Francisco: A. L. Bancroft & Co., 1878), a history and description of Arizona composed in verse. His critical publisher offered the opinion that "This is a poem not without merit, though some of the rhymes and measures would make an Apache's hair stand on end."⁹

While traveling in India and the Near East, Poston temporarily abandoned his Baptist beliefs in favor of Zoroastrianism, a religious system founded in Persia by a 6th century B.C. prophet. It involves the strug-

gle between darkness and light and focuses on the sun as the source of goodness. Poston tried in vain to raise the funds to build a temple devoted to sun worship on top of a small butte near Florence, an effort referred to as "Poston's Folly" by his neighbors and one which forever marked him as an eccentric in their eyes.

He resigned his government position in 1879, left Florence, and spent the next few years in Tucson. In 1884 he became principal founder of the "Society of Arizona Pioneers," now the Arizona Historical Society, and from late 1884 through mid 1886 he was a consular clerk in Nogales, Arizona; he was briefly a military agent in El Paso; and in 1887 he opened a Chicago office for the promotion of Mexican mining ventures. The following year took him to Washington, D.C., where he performed occasional tasks for the U.S. Department of Agriculture.¹⁰

It was while he was living in Washington, most probably at the Y.M.C.A., that he penned his proffered advice to students at the recently-founded University of Arizona and to its Board of Regents. He further composed an even lengthier "Lecture on Religion."

The former document, most of which is published here and for the first time, is more than a mere curiosity. Although written in the heavy hand of Poston's purple Victorian prose, it is nonetheless remarkable for its erudition and breadth of vision. Poston's ideal University of Arizona was to have classes in agriculture (especially in irrigation); languages; and mathematics. He urged particularly that a large telescope

be constructed, prophetically realizing the university's potential to become a leader in the field of astronomy. He also argued for a school for the blind.

Geology, geography, chemistry, natural history, ornithology, botany, music, painting, and physical education he proclaimed as necessary subjects; he was less sure about the value of history. "A live American can teach you more than an embalmed Egyptian."

Poston was an outspoken advocate of "Progress;" he foresaw the age of flight and of rapid transportation and communication. And while he strongly supported the idea of a free public education for everyone, he believed just as strongly in the separation of church and state. His discourse on the subject of the Bible in public schools seems almost eerily up-to-date.

This "Lecture on Learning" is written longhand on 106 pages, most of them wide-lined sheets from a Crown Linen "Foreign Correspondence Writing Tablet," but including the backs of stationery from the Y.M.C.A., Willard's Hotel, and the Ebbitt House, all in Washington. He also used the backs of Y.M.C.A. programs for late 1889 monthly receptions, Y.M.C.A. membership applications, and forms intended for use in a "Report of [Congressional] Sub Committee on Employment." The originals are preserved in the Special Collections Division of the University of Arizona Library where they are filed with Poston's "Lecture on Religion," written at the same time. Both were accessioned by the University of Arizona Library during the school year 1953-54.

On the cover of the writing tablet containing this essay, Poston wrote some instructions. "The Roman and Italics are intended to *emphasize* the lectures in *delivery*," he noted, and, "Printers will please preserve the original manuscript books," indicating his hope that his words would be immortalized in print. Best of all, he added: "P.S. Compositors will please correct proof in punctuation, orthography, or grammar. C.D.P." And while there were remarkably few errors in his text, I have honored his request by correcting spelling of two words and by using modern punctuation in place of Poston's many semicolons and dashes. I have further substituted many lower case initial letters in nouns where he freely used initial capital letters.

His lectures written, in September, 1890 Poston returned to Arizona for the last time. He worked for the Department of Agriculture as statistical agent for two years before serving briefly in 1895 as superintendent of the University of Arizona's Agricultural Experimental Station near Phoenix, his final gainful employment.¹¹ His income was supplemented at least in part by the *Overland Monthly* for which he had written an article, "Building a State in Apache Land: The Story of Arizona's Founding," published in the July-October issue of 1894. The article was reprinted as a book in 1963 (Tempe, Arizona: Aztec Books).

Poston's former employer at the *New York Tribune*, Whitelaw Reid, dropped by to see Arizona's "Prince of Pioneers" in his shabby surroundings in Phoenix. He wrote

an article about his visit for the January 28, 1897 edition of the *San Francisco Call*: "... at the far end of the yard is a long, low adobe house, all but one small room of which is tenanted by weaving spiders in wintertime and by tarantulas on the hot days. That single tiny room is at once the kitchen and boudoir of Arizona's first congressman—a learned, cultured gentleman, lawyer, traveler, explorer, soldier. His reception room is larger. It takes in the whole yard."¹² Reid's published concern may have helped Poston get his pension from the Arizona legislature.

Charles D. Poston died on June 24, 1902. He was first buried in a Phoenix cemetery, but in 1925 his remains were placed in a steel casket and removed to "Poston's Butte" near Florence on the site where he had hoped to build his Zoroastrian temple to the sun. The cere-

mony marking his reburial was an impressive one. Some 1,500 people were on hand, and after the invocation by Reverend Walter Hoffmann they listened to speeches by historians James H. McClintock and George H. Kelly. Governor George W. P. Hunt was there to speak of his acquaintance with Poston.

The butte is crowned by a pyramid-shaped monument of stone and mortar, one 15 feet wide at the base and 13 feet high. It was a gift of many people and organizations, including the Maricopa Chapter of the D.A.R. John C. Greenway contributed an inscribed copper plaque for the memorial on behalf of the New Cornelia Copper Company of Ajo.¹³ Today, seldom visited by anyone, the monument and concealed grave represent a nearly-forgotten chapter from Arizona's past.

Bernard L. Fontana
July, 1984

Notes to the Introduction

1. Gressinger 1961: 163
2. Gressinger 1961: 186
3. Gressinger 1961: 188
4. Sacks 1963: 8
5. Wagoner 1970: 43–44
6. This is summarized from Sacks 1963: 2–4.
7. Fontana and Park 1958: 5–6
8. Sacks 1963: 9–10; Wagoner 1970: 353–53
9. Sacks 1963: 10. Also see Gressinger 1961: 120–132.
10. Gressinger 1961: 132–69; Sacks 1963: 10; Wagoner 1970: 353
11. Sacks 1963: 10–11
12. Wagoner 1970: 354–55
13. Gressinger 1961: 191–202

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1963 Charles Debrille Poston: Prince of Arizona Pioneers. *The Smoke Signal*, no. 7. Tucson, Tucson Corral of the Westerners.
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Dedication

To the Regents of the *University of Arizona*:

In a country where my youth was wasted in struggles against the inhospitable forces of nature, against barbarous savages; my manhood spent in assisting to establish the blessings of civil government; and my declining years passing in efforts to promote a seat of learning for coming generations these lecturers are affectionately dedicated.

Charles D. Poston
Washington, D.C.
1 January 1890

Lecture on Learning

Young Gentlemen of the University of Arizona:

You may consider it presumptuous in attempting to address you on the abysmal subject of learning when I confess that my school days terminated with my tenth year, and that I have never been to college. The wide wide world has been my school house and stern experience my teacher.

In the pressing necessities of life I have gathered more cacti than laurel; but such wreaths as have been caught on the wing are cheerfully laid at your feet in hopes of smoothing your pathway through life.

This lecture is not intended for those who have been schooled in the groves of learning. Nothing can be done with old pottery. Something may be done with fresh clay. The world moves, and some of us move with it. Some remain stationary. Some recede. Our object is to advance.

When the gladiators entered the amphitheatre at Rome they saluted the Emperor with the expression "*Morituri, te Salutamus.*" But living in a gentler age and more refined civilisation, on appearing in this arena of learning, before the bright shining faces of youth, *I salute the future!* You are the heirs of all the ages, and your inheritance is priceless. Ever since man learned to inscribe his thoughts on stone, chisel his conceptions in marble, or spread his ideal on canvas the toil of the scholar, the embodiment of the sculptor, and the genius of the painter have been dedicated to you. You have but to devote your time to study in order to gather the accumulated wisdom of ages. The granary is full to over-

flowing and those who will may gather knowledge without money and without price; may even reap where they have not sown.

It is difficult to get an initial point from which to survey the base and meridian lines of learning. . . .

[Omitted here are Poston's ruminations on God, prehistory, ancient history, and religion, most based on out-of-date sources and, in any event, badly disjointed.]

Agriculture

The cultivation of the soil is necessary for subsistence, and required no curse of Adam for its enforcement.

Where the soil yields the greatest abundance learning flourishes in proportion. Witness China, India, Egypt, Italy, France, England and America: In the material affairs of life the granary is the treasure house of Nations, as well as individuals. The agricultural abundance of the Valley of the Euphrates made it the fabled cradle of the human race.

The Nile has been spreading the sediment of tropical Africa over the agricultural lands of Egypt for countless ages—and still flows on to the tideless seas, leaving its fertility to found seats of learning, build cities, erect pyramids, support armies, and pay tribute. There has been but little change since Abraham and the days of the Pharaohs.

Irrigation

I have devoted a great deal of study to the subject of irrigation and personally examined the system wherever it is now prac-

ticed around the world; and although not germane to the subject, you will find that irrigation has sustained the greatest seats of learning in the ancient world and has been the nurse of Civilisation.

The ornamentation of irrigation is not the least of its virtues and the landscape of an irrigated country far exceeds that left in a state of nature. In fact, everything in nature can be improved by the hand and intelligence of Man. In India, Persia, and China government requires fruit, shade, and ornamental trees to be planted along the banks of irrigating canals which not only afford fruit and shade, but strengthen the earthworks.

By a correct distribution of water both floods and droughts can be avoided—two great calamities from which uneducated mankind have suffered terrible consequences.

A river in a state of nature is simply an untamed savage capable of great destruction; but a river civilised by the science of irrigation yields the revenue which nature has provided in its sediment. The snows in the mountains are simply reservoirs of fertility to be spread upon the plains when they are required in summer.

With a system of irrigation China supports an average population of 300 to the square mile, and in India by the improved irrigation introduced by the British government the average is raised to five hundred to the square mile. The first attempt at irrigation by the government of the United States was made at my request in 1864 with the intention of providing better support for the Indians in Arizona. Within the

next century the abundant water supply will be utilized not only to beautify the country, but practically to *double the productive power of agriculture and to provide sustenance for a thousand million of people.*

Irrigation ensures a crop twice or thrice annually and is the most enlightened agriculture. It is nothing new, but older than the [written] history of Man on all of the continents.

The question of improving the arid lands of the West is now again before Congress, from which it may be hoped that legislation will be shaped giving life and vitality to a vast region hitherto considered a desert.

Water to quench the thirst of ages.

I hope some benevolent capitalist will endow a *School of Irrigation* in the University of Arizona.

A School for the Blind

For men of wealth who are really disposed to confer a part of their abundance upon the unfortunate, the endowment of a school for the blind appeals to our tenderest sympathies; as ophthalmia is the prevailing disease in the deserts surrounding this *University* for a circumference of a thousand miles; and the education of the intellect through other senses for those who suffer the great calamity of obscured vision would certainly be a charity approved by Man and blessed by God.

[Omitted here are Poston's meditations on Atlantis as well as his now badly out-of-date discussions of Egyptian and Asian history and culture.]

Language

The first branch of learning is language, of which we get the primitive principles from our mothers and nurses. If those mad fellows who undertook the building of the tower at Babylon had known what misery they were preparing for coming generations by the dispersion of the builders and the distribution of languages they might well have abandoned the project.

While I am on the subject of the great tower (of which only 235 feet remain), it may be instructive to give the heights of the principal towers now in existence (all but one of which I have seen):

St. Pauls in London	404 feet
St. Peters in Rome	432 feet
Pagoda at Rangoon	495 feet
Pyramid of Cheops, Egypt	480 feet
Dome of Cologne, Germany	522 feet
Washington Monument	555 feet
Eiffel Tower, Paris	984 feet

Dead Languages

Language grows and spreads with civilisation and power. The Chinese language is spoken and written by more people than any other, but has not spread by civilisation and power. And Japanese is but little known outside of the secluded Empire. They claim the highest excellence, as sounds or signs express words or ideas without the trouble of spelling.

The Sanscrit is the classical language of four to five hundred millions of Asiatics and is of great antiquity.

The Hebrew language is very ancient, but has been circumscribed by the narrowness of Jewish civilisation and power.

The Greek language spread with the conquests of Greece over a large portion of Europe, Asia, and Africa, and two thousand years ago was the politest language on earth.

The Latin language spread with the domination of the Roman power and civilisation, and its study is necessary for profound learning.

The English language has no original root, and therefore is not properly a language—but is spreading in proportion to English and American power and civilisation.

Modern languages

An American will naturally desire to master his own language first, and the acquisition of modern languages is governed by circumstances, conditions and desires.

In our own country the knowledge of modern languages is very useful as they are nearly all spoken [here], more or less.

In travelling it is certainly a great advantage to speak foreign languages, and in reading it is preferable to read the language of the author rather than have it filtered through a translation and lose the pith.

Americans have better opportunities for learning foreign languages than any people in the world, for there is no town so small but a teacher can be found in nearly every modern language.

French, German and Spanish are the most useful, and are easily learned.

Language

The acquisition of a language is largely a habit, and you cannot be too careful of your habits in this as well as in other matters. We say the sun rises and sets and speak of the four corners of the earth from sheer habit—a heritage of ignorance.

It is cause for lamentation that while inspiration was going on the inspired writers were not “inspired” with some knowledge of the great truths of nature so their descendants would have been spared this dreary pilgrimage through the dismal swamps of ignorance. A little more Humanity and less Divinity would have been a better legacy.

In a pilgrimage longer than Moses performed going from the Nile to the Jordan (although that journey could be easily made in a week) I have never entirely improved the pronunciation learned from Africans in my youth, and [I] am somewhat afraid of ghosts and hobgoblins of a dark night. Such is the iron yoke of early impressions.

We remember with smothered indignation that in *Juventus Mundi* [by William E. Gladstone and published in 1869] the same inspired writers who taught us so much about the unknown world and its unfathomable mysteries taught us that this world was flat and that the sun revolved around it, [along] with a few other lessons in war, slavery, concubinage, robbery, theft, rape, incest, murder and depravity horrible to remember and repugnant to a virtuous mind.

When [Lajos] Kossuth, the Hungarian patriot, was imprisoned he was allowed the

choice of two books, and chose the Bible and Shakespeare. From these he acquired the English language in such perfection that when he was in this country his speeches were considered pure diction. They are two inexhaustible books of literature—one spiritual [and] the other temporal.

The authorship of Shakespeare remains among the mysteries of literature, and whether written by the bard of Avon or Lord Chancellor Bacon is very little difference to us. The author, whoever he was, “Exhausted worlds
And then created new.”—

No one would believe that Milton’s *Paradise Lost* was stolen from a French Bishop of the fifth century, and yet nothing has been more clearly proved. That is what makes *Paradise Regained* such an unreadable book—it was probably Milton’s original composition.

The text of Milton’s *Paradise Lost* is often confounded with Holy Writ; and [Laurence] Sterne’s “The Lord tempers the wind to the shorn lamb” [from *The Letters of Maria, & c.*, 1790] is worthy of David.

If Lord Bacon composed Shakespeare and *Paradise Lost* was translated from the Latin of the Bishop of Vienna the heathens were not the only people who worshiped false idols.

[Omitted here are Poston’s tribute to and discussion of the Y.M.C.A., in whose Washington, D.C. quarters he was apparently living while writing these lectures, and a discussion of the celebration of Christmas Day.]

Mathematics

is said to be the only exact science. After language mathematics is the most necessary branch of education. The ability of computation and combination is as necessary in selling a load of pumpkins as grouping an army in the field of battle to decide the fate of nations. In the higher schools, especially military academies, a proficiency in mathematics is considered the test of intellect. Alexander the Great (pupil of Aristotle), Napoleon the First, and General Grant all had active mathematical minds.

General Washington, Jefferson Davis, General Lee, and Stonewall Jackson were considered deficient in mathematics. I would advise you to commence with the multiplication table and climb as high as you can in mathematics; *it is the gymnasium of the mind*. Remember Aristotle's admonition to Alexander: "There is no royal road to geometry."

One law in Physics is worth remembering:

"The weakest link in a chain is the test of its strength."

Look out for the weak links in the chain of life!—

Again I repeat to you: Look out for the weak links in the chain of life!! They are the test of the strength of character!!!

Astronomy

Alexander the Great found astronomical calculations in Persia and Assyria 2500 years old at the date of his conquest, which was 334 years B.C. Mesopotamia (between the rivers Tigris and Euphrates) was the

seat of ancient learning but not so old as Egypt; and Chinese mythology goes back *millions of years* (see Strauss's translation of *Chinese History*—Antwerp Edition).

The oldest observatory I have seen is on the wall of Peking in China. From calculations made there the Chinese Almanac is published annually, governing all things terrestrial in the Celestial Empire.

There is a round stone in India about 100 feet in diameter used for astronomical purposes which antedates all [written] history and another in Mexico of great antiquity. The Chaldeans were learned in astronomy before the Book of Job was given to the world. The Egyptians built the pyramids according to the most accurate astronomical calculations.

We all sympathized with Galileo when he was about to be burnt at the stake for advocating "that the world moved."—

When Sir Isaac Newton was Director of the Mint in England he observed an apple fall from a tree and began to reason why it fell *down* instead of *up*, and mind working upon matter evolved the law of gravity!

The Herschels, father, son and daughter, living in England, made great discoveries in astronomy, for which they were duly honored.

Lord Ross's telescope at Birr Castle in Ireland has contributed greatly to a knowledge of astronomy. It is 6 ft. in diameter by 60 feet long—erected at private expense in 1842.

In the early years in California I knew an old man named James Lick, going about humbly in a miller's garb, who left a

bequest for the purpose of establishing in California the first powerful telescope ever made.

Astronomers have also mapped and placed from sixty to a hundred million of stars—worlds revolving in the unlimited space of the universe; and we are brought very close to some of them.

It is wonderful that little man averaging not more than 150 pounds in weight should by his inventive genius read the mysteries of the countless myriads of stars illuminating the universe of the Creator.

Venture not upon the study of astronomy. It is like Egyptology, a fathomless abyss:—But God forbade Adam to eat the apple of life, which is knowledge—*in vain!*

Something less than a hundred of millions miles distant, the sun is the center of our solar system from which we draw light, life, and electricity. For millions of years its rays have been permeating our globe, storing fuel for the wants of man. And at last, through the wonderful genius of Edison, we have harnessed electricity so that future generations will annihilate space more than [did] the mythological heroes of Homer.

As the sun is twelve hundred and fifty million times the size of the little tumble ball which we inhabit and [is] supposed to be a liquid mass of unimagineable heat, it can spare all the warmth we want and not miss it. In fact, those who live in Arizona know we get more than we want in the summer time.

Astronomical Observatory

The purity of the atmosphere over Arizona affords a natural advantage to science for making astronomical observations, and the nebulousness of the atmosphere would never interfere with the work as it does frequently in more humid localities.

Any capitalist ambitious to link his name with the immortal stars can find a virgin opportunity by endowing a *Professorship of Astronomy* in the *University of Arizona* which will familiarize coming generations with the celestial world and diffuse among mankind a knowledge of the sidereal universe of which our ancestors were superstitiously ignorant.

In the pellucid atmosphere of Arizona a telescope of greatest magnitude would manifest the starry universe with more brilliancy than in any country that I know of except, perhaps, Egypt and Mesopotamia, the ancient cradles of astronomical science. And the science of astronomy is certainly in its infancy *and will be when the last man on Earth shall be hoary with time!*

Geology

Teaches the construction of the Globe we live upon, its component parts, and approximate age.

If heat increases in the same ratio, as far as known it is a boiling liquid mass at about the depth of fifty miles and volcanoes, as they are called, are eruptions on its surface.

Its crust compares to about the thickness of an egg shell to the egg, and we are the insects on its surface.

The greatest natural chasm known on the earth is the Grand Canyon of the Colorado, and you cannot spend a vacation to better advantage than by making an excursion there. I had the honor of delivering a lecture on the subject before the Royal Geographical Society of London about twenty years ago and was listened to with great attention.

In all these eons of time since the world was created the genii have been at work in the cavernous earth fashioning diamonds, sapphires, rubies, opals and gems without gender with magical splendor.

The Monarch gathers them to adorn the Queen of Nature with the emblem of love.

Geography

The first inclination of man is to learn the geography of his surroundings and, as intellect expands, the rivers, lakes, seas, oceans, mountains and configurations of the globe we inhabit.

It is only four hundred years since the Western Hemisphere was unknown to the Eastern, and the poles have not yet been adorned with the colors of any nation.

All honor to the bold sailor, *Christopher Columbus*, who spread his canvas upon the unknown sea and brought Europe and America within a week of each other.

All honor to the brave explorer *Stanley* who is bringing the *Dark Continent* to the light of civilisation and Christianity [and] perhaps as an abode for the African in America.

All honor to the bold pioneer *Fremont* who gave us California. And, with becom-

ing modesty, all honor to the *Arizona Pioneers* who have rescued this sun kissed land from the *Apaches*.

Humboldt's Cosmos

I know of nothing better to recommend for your profound study than the [volumes of the] "*Cosmos of Baron von Humboldt*." For both ancient and modern research you will find them inexhaustible. I found a portion the other day at Lauder milk's second hand book store for 25¢ a volume, and when you can secure Humboldt's researches for 25¢ a volume no boy need remain ignorant of fundamental truths. In books as well as [in] men, never mind the binding. Value the contents.

The whole world honored Humboldt for his works. His declining years were passed at a cottage in one of the Royal Parks near Berlin. I crossed the threshold with awe, and received his benediction with veneration. (I went to Berlin to consult Dr. Pfaaf, the greatest oculist in the world, about my eyes.)

Mexico

To the young gentlemen from Mexico who may come to seek knowledge under the flag of the great Republic you owe special courtesies.

They are strangers in an alien land, and it is your duty as gentlemen to console them in their absence from home by the hospitality which you may expect, and will surely receive, if you are ever guests in their country. The Republic of letters has no boundary, and unfolds no flag but *Universal Knowledge*.

History

I would not advise you to waste too much time in grovelling in the tombs of antiquity in search of knowledge. A live American can teach you more than an embalmed Egyptian.

The pen of wire and the tongue of fire of the nineteenth century conveys intelligence with more rapidity than the stylus of the ancients. Where the Grand Army of *Progress* is on the march with drums beating and trumpets sounding at the head of the column it is neither wise nor patriotic to linger over the dead. There is no reason why the mind more than the body should be clothed in the costume of antiquity.

Remember there is another army larger, stronger, better and wiser close upon your heels.

It is the revolution of evolution!
March! or be run over!!

The Telegraph, Telephone, Phonograph and other modern inventions are revolutionising correspondence and communication beyond imagination. Communication is already instantaneous, and within your generation transportation will be conducted at the rate of a hundred miles an hour. Aerial navigation is nearly an accomplished success.

With all this material progress in mind, to remain stagnant, or dwarfed by the traditions of antiquity? I have not—and encourage you by every generous impulse of my nature, and every sympathetic desire for your welfare, to fill your haversack with

knowledge and march to the front with the grand army of *Progress*.

“Behind us in our paths we cast
The broken potsherds of the past.”

Chemistry

is the subtlest of sciences and a knowledge of its mysteries will enable you to analyse everything that exists. It is the key to the drama of nature, and with it you can unlock the treasures in the womb of Mother Earth and gather the production on her bosom. It is useful in all the pursuits of life from the agriculturalist who gathers from his knowledge where his neighbor fails from ignorance; to the astronomer who analyses the rays of the sun and determines its component parts, while the ignorant gaze at it in stupid wonder.

With a simple blow pipe and a piece of charcoal you can ascertain the value of the minerals under your feet, and with more complex machinery reduce them to a commodity of exchange.

It would be a great advantage to be able to analyse what you eat, drink and breathe so that you may govern the quantity of blood which courses through your veins—for good or evil!

The majority of terms used in chemistry are derived from the Arabic language, from which we infer that the Arabians were learned in chemistry before we had a language.

Everything on the earth and in the earth, and in the waters, and in the air can be analysed by chemistry. And to remain ignorant of this science is to walk the earth blindfolded.

Science acknowledges no mysteries. You have but to turn the wheel of science and the kaleidoscope of knowledge will unfold all the mysteries of the Creator for your view and admiration.

Phrenology and Physiognomy are considered immature sciences, but a study of them will enable you to analyse character and determine associations.

Nature makes no counterfeits; and the indelible hand of God shaping the head and face gives index to the mind and soul.

Comparative anatomy in the study of animals and birds is a pleasing study and affords compensating occupation for many a leisure hour.

The brain of man is of itself a profound study—the battery of the mind—
“The dome of thought
The palace of the soul.”—

*Natural History, Botany,
and Ornithology*

are all studies which invite the lover of Nature, and the lover of God.

For several years I passed every Sunday in the zoological gardens at London in the study of natural history; and the Brahmin bull of India came to know me as well as his father.

America affords a virgin field for the study of ornithology, and *Audubon* immortalized his name by studies commenced in my native Kentucky.

Botany is the bouquet of nature festooned in every tree and flower, yielding the most delightful pleasure to the senses.

All these studies are purifying and elevating and naturally attract the investigation of those who desire to make earth a paradise.

Music

is a spontaneous emotion of mankind and forms a part of the natural education of all races. The harps at Zion were hung on the willows of the Euphrates during the 400 years' captivity of the Jews.

The imperial eagles of France have repeatedly gone down before the thunders of the “Marseillaise.” “Rule Britannia” echoes wherever the sun shines in the dominions of a nation upon which the sun never set. “Hail Columbia” resounds from ocean to ocean on the American continent.

[Pierre Jean de] Beranger says, “Let me sing the songs of a nation, and you may make its laws.”—

Music was invented in China for the worship of *Shang-Te*, the most high God—some say for enticing the sexes.

Your natural instincts will lead you to cultivate music, and as civilisation advances, the anthems of song will elevate the human race to sublimity only a little lower than the angels. By cultivation the voice can be attuned to melody, or by neglect relegated to the unmodulated harshness of the animal creation.

It is far more complex than any instrument manufactured by the hand of man and susceptible of the highest cultivation, either for oratory, conversation, or song.

The mind can form no adequate conception of the instrument which God has

created for the annunciation of our sentiments, desires and emotions. Throughout life, from the first wail of the babe to the dying prayer of the patriarch, the voice is in continual service and should be trained for duty. As in the wonderful creation no two blades of grass are precisely alike, no two human voices are precisely the same. Faces, forms, manners, habits and customs may change but the voice retains its identity subject only to the changes of nature—from youth to aged.

The chest, throat, mouth, nose and intricate muscles govern the sound of the voice, and the air, which pervades all space, furnishes the motor, and when set in motion responds to the driving power of the human organisation. With all this wonderful organisation and the most refined cultivation of the voice a bird can surpass in sweetness and melody any human voice which has ever sounded on earth.

I have heard Jenny Lind, [Adelina] Patti, [Christine] Nilsson, [Clara Louise] Kellogg and all the prima donnas of my day; but never any of them trilled like a bird in the forest.

In opera the cultivated voice creates the greatest sensation, because it is aided by scenery, instrumental music, and often an emotional performance of high theatrical tension.

The opera manifests the greatest power of the voice over the emotions. When vocal music swells in immortal verse, recounting heroic deeds, with instrumental accompaniment it is not surprising that the emotions of the audience expand in thunders of applause

and that prima donnas are crowned Queens of Song.

I remember an old story of [Maria] Malibran when she was in her glory, demanding a great price to sing for the Czar of Russia. The autocrat demurred at the price, saying that it was more than he paid his Field Marshalls. Malibran replied, Frenchily: "He had better get his Field Marshalls to sing."

Women are the natural Queens of Song. Only one man in my day—[John] Sims Reeves—has attempted competition, and his tenor voice was a miracle—or at least supernatural—for I do not believe in miracles.

Chinese music is melodious when the ear becomes accustomed to it; and Turkish music is weird and inspiring. I have even heard good music among the Apache Indians, and we all know that the African is gifted with a melodious voice.

The governing powers of climate and temperature regulate the voice in its natural condition. Music is the natural organ of love, of devotion, of praise; and its cultivation enables excellence in these accomplishments.

As we grow richer, older, wiser and better, music will attest its sublime influence over the destinies of human life and perhaps prepare us for another life where it is imagined that music is one of the highest attributes.

We have many patriotic national songs, but that which pleases me most is (Here insert Rodman Drake's national anthem to be found in any school book of poetry) [lyrics omitted].

Painting

is classed among the fine arts, and is not included in the ordinary curriculum of education. But [it] has immortalised more men than oratory or war. It is also a fair field for women. As a means of acquiring wealth the *brush* is mightier than the *pen*.

The adoration of the old masters is degrading to the genius of the 19th century, to say nothing of the 20th. Mere copying indicates the decadence of a people. The Chinese have reached that point.

It becomes the young men and women of the 19th and 20th centuries to *originate*; not copy.

Any of you can make an essay in painting. The materials are inexpensive, and Nature is spread before you. Copy it.

Get some paints, brushes & canvas and latent genius may be developed: *at any rate have the ambition to try.*

Physical Training

is now receiving the attention which it so eminently deserves.

It enabled the Greeks to conquer all the known world 2500 years ago.

It enabled the Romans to rule as masters for a thousand years.

It enabled the British to hold all they conquered, except America.

Baseball is the national game and the evidences of improvement in physical culture are apparent.

Horsemanship in all ages and countries has developed fine physical qualities and is a health inspiring exercise.

The powers of endurance on foot form the test of manhood. I have walked from

one ocean to the other.

Athletic sports of all gentle and healthy kinds are as necessary for the body as the mind.

If the human organization is *God-like*, as asserted, it should be cultivated to the greatest perfection as much for mental and moral as physical benefit.

The Bible in Public Schools

There is a serious question agitated in the United States as to whether the Bible should be taught in the public schools as a branch of learning, and the discussion of this question revives all the bitter religious controversies of the past—excites the bigotry of the Dark Ages.

The founders of the Republic, admonished by the severe lessons of history, endeavored to separate Church and State so wide in our government that they never would come in conflict, and it would be wise to respect the intentions of the fathers.

Any unprejudiced person, not consumed with bigotry, will admit that there are many passages in the Bible which should not be impressed upon the plastic minds of youth, especially of the female sex. The story of Sodom, the nastiness of Onan, and beastliness of Judah, for instance. Such obscene literature ought to be excluded from the mails!

The home, the Sunday school, the desert, and the forest afford ample space for the study of religion.

It is beyond the domain of learning—and the diversity of creeds cannot be reconciled under the dome of this university.

The wider field of the dome of heaven is a more fitting arch for the aspirations to immortality. The contention about religious instruction in the public schools was made a political question in the State of New York as far back as 1840.

There are now about ten millions of Catholics in the United States and they naturally and reasonably claim a fair proportion of the benefit of the taxes raised for public instruction.

It may become the state, and is no doubt one of its highest duties, to provide for the education of the children of the people; but is it becoming for the state to exonerate parents from the natural responsibility of the moral instruction of their children and assume the duties which parents properly constituted would not willingly delegate to the state? A mother properly constituted will never resign the moral training of her child to the school teacher; and a father must be greatly absorbed in the lust of gain who cannot spare time to give his offspring moral instruction.

The very foundations of civil and religious liberty in the country which guarantee the right of every person to worship according to the dictates of conscience seem to me to forbid the introduction of religious instruction in the public schools; and as the scholars cannot all be instructed in the same religion, it would be an injustice to have them instructed in any. Moreover, it would be impinging upon the right and duty of their parents. *The autonomy of the family is the safety of the State.*

The State owes no more duty to feed children with the bread of life in moral instruction than to feed them with bread and butter for their physical growth.

If we desire the children of America to assimilate patriotism and national virtue in learning, the fire brand of religious sectarianism should never be thrown into the public schools.

The school house is the magazine of the national brain, and the torches of religious bigotry should be kept far away from it.

It is not "Catholic" in the true sense of religion to force Protestant religious instruction upon the children of Jew, Gentile, Mormon or Catholic parents; and as a Protestant and a Baptist I should strongly oppose it. There are upwards of 600,000 children of Catholic parents registered in the public schools of the United States, from which it may be reasonably inferred that their parents are unable to send them to Catholic schools and pay for their tuition, in addition to the taxes imposed by the state for public education. And it seems to me manifestly unjust that they should receive religious training at variance with that of their parents, and at variance with the principles of civil and religious liberty on which the government is founded. We allow no whiskey at the ballot box and we should allow no sectarianism in the school house.

The question of the comparative wealth or poverty of the parents should never be raised in regard to education in the public schools; but all questions of

wealth, poverty, race, color, condition, nationality and religion should be sternly excluded from the temples of the mind.

I know that many religious bigots will not agree to many of the propositions laid before you; and know as well that they would burn me at the stake but for the starry flag which shields you and me.

[Omitted here are Poston's homilies concerning the need for students to show gratitude for their education and to express that gratitude by honoring parents and being grateful to one's society.]

Civil Government

You need not go into ancient history in search of knowledge about civil government *except to learn what to avoid.*

The Declaration of Independence adopted by the American colonies in Congress assembled at Philadelphia on the fourth day of July 1776 is the cornerstone of civil government in America and marks an epoch in the history of mankind. The doctrine of the Divine Right of Kings (the Anointed of the Lord) fell as Lucifer fell, never to arise again among the Sons of God. Each one of you is a sentinel on the watch towers of freedom. Your duties to the government commence with the cestus

of manhood and only terminate with death.

Our system of government seems to be arranged like the very constellations of the universe—each state revolving in its separate and independent sphere like the stars of the firmament: only governed by the control sun at Washington.

It is not irreverent to say that its creation came from the very hand of Almighty God—and we cannot be too grateful to the Creator of such a beneficent government nor have too much veneration for its founders. "*Esto perpetua*"

[Omitted here is Poston's lengthy "Lecture on Religion."]

In conclusion allow me to quote from one of the sweetest and best American writers:

"Look not mournfully into the past, it comes not again.

Wisely improve the present. It is thine.

Go forth to meet the shadowy future with a manly heart." — Longfellow

These lectures are, through your kindness, submitted to the august tribunal of public opinion, and

"Will try the heart and test the frame;
And stamp with honor or with
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The Author

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