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"THE REIGN OF THE CONSTITUTION AND LAWS HAS BEEN RESTORED" (IN UTAH.)

—*James Buchanan's Message to Congress.*

RESPONSE.

Tell Congress, sir, that yonder sun
Will Nature's laws obey,
And has, accordingly, begun
To shed the solar ray.

Announce to Congress that the moon
Will yield obedience
To Nature, and will, therefore, soon
Her borrowed light dispense.

Say too, the twinkling orbs of night
Will now in order move—
Thenceforth they'll decorate with light
The galaxy above.

Tell Congress that the Seasons now,
In strictest loyalty
To Nature's Constitution, bow
With all fidelity.

Let Congress know, the orbs above
Have all agreed to shine—
The Seasons, in their course to move,
Have formed a late design.

Or else announce one fact instead,
Which long will be deplored,
That wisdom to our Nation's head
Has not its "reign restored."

QUERY: Where have the Constitution and laws reigned during the last few years, but in Utah? E. R. S.

G. S. L. City, August 4, 1858.

Dr. Livingstone at the Cape.

The Cape of Good Hope papers contain full reports of the farewell dinner at Cape Town to Dr. Livingstone and the officers of the Zambesi expedition. The Hon. W. Porter, Attorney-General, presided, and Captain J. M. Hill, Civil Commissioner, and resident magistrate of the Cape district, occupied the vice-chair. On the right of the chairman sat the Governor, Captain Beddingfield, Mr. Justice Cloete, Rev. R. Moffat, Rev. Dean Douglass, Mr. T. Baine; and on the left were Dr. Livingstone, Justice Bell, Mr. R. Thornton, Hon. H. Rivers, and the Rev. Mr. Livingstone.

The toast to Dr. Livingstone was proposed by his Excellency.

Dr. Livingstone, in acknowledging the toast, said: If you will allow me, I will explain to you how I mean to endeavor to follow up the discoveries which have been made. The central part of the continent which we now stand upon was supposed for a long time to be a great sandy plain. Certain rivers were known to be flowing in towards the centre, but they were not known further, and they were supposed in consequence to become lost. But instead of that, the grand view burst gradually upon my mind of a very fine, well-watered country; and not only that, but of certain well-watered, healthy localities on both sides of the country which were suitable for a European residence. Efforts have been made for centuries to get into the interior of Africa, but, unfortunately, it has been always attempted through the unhealthy parts near the coast. On the southern part of the country we had the Kalihari desert, and the expedition which was sent out from Cape Town under Dr. Smith was prevented from penetrating the interior by this same Kalihari desert. The unhealthy coasts presented a barrier on both sides; and this desert presented an obstacle on the south; but when Messrs. Oswald, Murray and myself succeeded in passing round that desert, then we came into a new and well-watered country beyond. When I passed into that country, I had not the smallest idea that there was such a want of cotton as I found to be the case when I went home to England. But there I saw the cotton growing wild and almost everywhere, and that sugar was collected all over the country (although the people did not know that it could be produced from the sugar cane); and I found, further, that this was a great market for labor. When I lived at Kolobeng men left that tribe, and I found some of them within two hundred miles of Cape Town, seeking to obtain work. Now, here we have the produce and here we have the labor, and I hope we may secure a healthy standing point, from which Europeans may push their commercial and their missionary enterprise to the unhealthy regions beyond. We proceed first of all up the river Zambesi, and have the full authority of the Portuguese for so doing. This river is very large; it is difficult to convey to the people of such a dry country as this an idea of its size, but the narrowest part that I saw seemed almost to be equal to the Thames at London bridge. It was not known to be a large river, on account of its being separated into five or six branches at its mouth, before it reaches the sea. But, when we get inland, we have a noble stream, and we have at least 250 miles of the stream without a single obstruction. Then we come into a large coal field, and this seems to contain the elements of future civilization. Then I may state that, as we have to examine the river, our expedition will be a practical one. It is not like those that have been sent to the North Pole. We hope to have something to show when we come back. Our botanist is an economic botanist, and the geologist is a practical mining geologist; and the naval officer, Captain Beddingfield, has had a great deal of experience in African rivers, and has not been deterred by the fear of suffering from African fever, any more than myself, from volunteering to go on this expedition. He goes to examine the river system, and give us correct information about the river system and its navigability. And then we have an artist and a photographer, to give an idea of what is to be seen in the country. But I think this expedition is placed in a somewhat peculiar position. I never heard of another expedition being similarly situated. My companions are all put on their mettle. They are aware that it is very well known that when alone I did something; and if we don't do well now in this expedition, people will say, 'Why, those fellows have prevented him from doing what he might;' [laughter] so they are all put on their mettle; and I have the greatest confidence in their desire to accomplish the great objects of the expedition. We find that in the middle of the country there are a great many branches of the Zambesi. Several of them I have examined myself, and found they went out a few miles—some ten or twelve miles—and then came in again to the main stream. Now, the natives pointed out a number more, and they say these other streams come out of the main branch, and enter it again, after passing some hundreds of miles. This is a most interesting point, because if the departing and returning branches are really seen—then we may go up them in the small steam launch, and have a navigable pathway into an immense extent of country beyond. We will not be then obliged to pass the great falls of Victoria, which cannot be passed in any vessel. If we have a navigable pathway into the country beyond, then there is a prodigious extent of country, all well adapted for the cultivation of those products which we now get through slave labor. And what I hope to effect is this; I don't hope to send down cargoes of cotton and sugar; perhaps that result will not be in my lifetime. But I hope we shall make a beginning, and get in the thin end of a wedge, and that we shall open up a pathway into the interior of the country, and by getting right into the centre have a speedy passage by an open pathway, working from the centre out towards the sides. When going into the country we don't mean to leave our Christianity behind us. [Cheers.] I think we made somewhat of a mistake—indeed, a very great mistake—in India; but where we are going, we will have no need to be ashamed of our Christianity. We go as Christians; we go to speak to the people about our Christianity, and to try and recommend our religion to those with whom we come in contact. I have received the greatest kindness from all classes of people in the interior. I have found that only when we approach the confines of civilization, the people become worse. Such is the fact—the nearer we come to civilization, we find the people very much worse than those who never had any contact with the white man.

Curious Facts from History.

The Saxons first introduced archery in the time of Voltigeur. It was dropped immediately after the Conquest, but revived by the Crusaders, they having felt the effects of it from the Saracens, who probably derived it from the Parthians. Bows and arrows as weapons of war were in use with stone cannon so late as 1540. It is singular that all the statutes for the encouragement of archery were framed after the invention of gunpowder and firearms. Yew trees were encouraged in churchyards for the making of bows, in 1482. Hence their generality in churchyards in England.

Coats of arms came into vogue in the reign of Richard I. of England, and became hereditary in families about the year 1192. They took their rise from the knights painting their banners with different figures to distinguish them in the crusades.

The first standing army of modern times was established by Charles VII. of France, 1445. Previous to that time the king had depended upon his nobles for contingencies in time of war. A standing army was first established in England in 1638, by Charles I.; but it was declared illegal as well as the organization of the royal guards in 1679. The first permanent military band instituted in England was the yeomen of the guards, established in 1486.

Guns were invented by Swartz, a German, about 1378, and were brought into use by the Venetians in 1382. Cannons were invented at an anterior date. They were first used at the battle of Cressy, in 1348. In England they were first used at the seige of Berwick, in 1405. It was not until 1544, however, that they were cast in England. They were used on board of ships by the Venetians in 1536, and were in use among the Turks about the same time. An artillery company was instituted in England for weekly military exercises in 1686.

Insurances of ships was first practised in reign of Cæsar, in 45. It was a general custom in Europe in 1194. Insurance offices were first established in London, in 1667.

Astronomy was first studied by the Moors, and was by them introduced into Europe in 1201. The rapid progress of modern astronomy dates from the time of Copernicus. Books of astronomy and geometry were destroyed as infected with magic, in England, under the reign of Edward VI. in 1552.

Banks were first established by the Lombard Jews in Italy. The name is derived from 'banco,' bench—benches being erected in the market places for the exchange of money, etc. The first public bank was at Venice, about 1550. The Bank of England was established in 1693. In 1696 its notes were at twenty per cent discount.

The invention of bells is attributed to Paulinus, bishop of Nola in Campania about the year 400. They were first introduced into churches as a defence against thunder and lightning in 900. They were first hung up in England at Croydon Abbey, Lincolnshire, in 945. In the eleventh century and later it was the custom to baptize them in the churches before they were used. The curlow bell was established in 1100. It was rung at eight in the evening, when people were obliged to put out their fire and candle. Bell men were appointed in London in 1556, to ring the bells at night and cry, "Take care of your fire and candle, be charitable to the poor, and pray for the dead."

How many are aware of the origin of the word "boo!" used to frighten children. It is a corruption of Bob, the name of a fierce Gothic general, the son of Odin, the mention of whose name spread a panic among his enemies.

ALLOYS OF METALS.

Much has yet to be learned regarding the alloys of metals, because a very small difference in the proportions of the metals employed produces a great difference in the quality of the alloy sought to be obtained.. A very interesting paper on this subject (as published in the London *Engineer*) has recently been communicated to the Manchester (England) Philosophical Society, by F. Grace Calvert, F.C.S., and R. Johnson. The object of the authors of this paper was to present something reliable and useful regarding the hardness of alloys. The process at present adopted for determining the comparative hardness of bodies consists in rubbing one against another, and the one which scratches is held to be the hardest. Thus, for example, when diamond is rubbed against glass, it is found that the former scratches the latter, hence the diamond is justly held to be the hardest. Every person is familiar with regard to the comparative hardness of these two bodies, but very few are acquainted with the comparative hardness of other bodies, especially metals and their alloys, although a scale of hardness has long been adopted among mineralogists.

Messrs. Calvert and Johnson made a series of experiments with pretty large masses of metal to test their comparative hardness; and the followlng is a most useful table which has been prepared, embracing the results of their investigations:—

NAMES OF METALS.	HARDNESS.
Cast Iron	1·000
Steel	——
Wrought Iron	·948
Platinum	·375
Pure Copper	·301
Aluminum	·271
Silver	·208
Zinc	·183
Gold	·167
Cadmium	·108
Bismuth	·52
Tin	·27
Lead	·10

This table exhibits the remarkable fact that cast iron is harder than all the other metals; it was found to be harder than any alloy. Its great resistance to a crushing force—on account of its cohesion and hardness—is well known; hence its superiority for the pillars and walls of buildings, and the journal boxes of heavy stationary shafting—the latter, however, should always be lined with a soft anti-friction alloy.

It was found that some brasses were harder than any of the metals composing them, and strange to relate, this hardness is due to the softer metal—the zinc. Thus an alloy of zinc 50, copper 49, was in hardness as compared with cast iron ·604; while an alloy of copper 66, zinc 33, was only ·472 in hardness. The fact was also eliminated that when the quantity of zinc much exceeded 50 per cent of the copper, the brass produced was very brittle. A beautiful brass composed of zinc 50·68, copper 49·32, was made. It contains about 20 per cent more zinc than the brasses of commerce, and yet when carefully prepared it is richer in color, which renders it superior, for many purposes, to commercial brass, also on account of the softness of the latter. We hope American pin manufacturers will take this as a useful hint, because the pins which they now make, although much cheaper than the old "London pins," are far inferior in the quality of metal; they do not seem to have any strength—they bend like a piece of lead wire.

The common alloys employed for making journal boxes are much dearer than a brass composed of zinc 50, and copper 50, and yet they are no harder. For heavy bearing boxes an alloy of copper 82·05, tin 12·82, zinc 5·13, is common. Its hardness is ·562 as compared with cast iron at 1,000, and is lower than the brass of ·604 hardness, yet its cost is at least three times greater.

In a series of bronze alloys containing tin and copper, it was found that an excess of tin was the cause of softness, while an excess of copper, although it is such a malleable metal, is the cause of brittleness. Thus an alloy of 21·21 copper, and 78·79 tin, is not brittle; but an alloy of 34·98 copper, and 65·02 tin is very brittle. When the copper is increased to make an alloy of 84·68 copper, and 15·32 tin, the brittleness is removed, and the alloy is very hard; it is as compared with cast iron at 1,000, ·916 in hardness. A composition of 9·73 copper, and 90·27 tin, is very soft, being only ·83 as compared with cast iron.

An excess of zinc in brass increases its hardness, while the very opposite result would be expected, because zinc is softer than copper. In alloys of copper and tin—common bronze—an excess of tin renders the alloy soft, as would be expected, because it is the softer metal. On the other hand, an increased quantity of copper—from but one-third to that of the quantity of tin in the bronze, up until it (the copper) is four times the quantity of tin—renders the alloy brittle, a result which would not be expected, judging from the nature of the metals in their simple conditions.

Regarding the quality of alloys of all kinds, much, undoubtedly, depends on the mode of mixing them; such as the length of time they are kept at a smelting heat, and the length of time in cooling them. Copper is rendered hard by slow cooling, and soft by rapid cooling, while iron possesses the very opposite qualities.

Alloys containing copper generally contract and become of greater specific gravity. An amalgam of mercury and tin expands, as do nearly all amalgams. The following binary alloys also expand, namely: bismuth and zinc; bismuth and antimony; lead and tin, and lead and antimony. Therefore these alloys should take the sharp outline of molds, and be eminently adapted for casting small ornaments.—*Scientific American.*

THINGS THAT SHOULD NEVER BE DONE.—Never abuse one who was once your bosom friend, however bitter now.

Never hire servants who go in pairs—as sisters, cousins, or any thing else.

Never insult poverty.

Never stand at a corner of a street.

Never speak contemptuously of womankind.

Never speak of your father as the "old man."

Never blow your nose between your thumb and fingers.

Never eat a hearty supper.

Never stop to talk in a church aisle after service is over.

Never smile at the expense of your religion or your Bible.

Never take a second nap.

Never reply to the epithet of a drunkard, a fool or a fellow.

Never taste an atom when you are not hungry; it is suicidal.

☞ A celebrated barrister, retired from practice, was one day asked his sincere opinion of the law. "Why, the fact is," rejoined he, "if any man were to claim the coat upon my back, and threaten my refusal with a law suit, he should certainly have it, lest, in defending my coat, I should lose my waistcoat also."

☞ Do all in your power to teach your children self-government. If a child is passionate, teach him by gentle means to curb his temper. If he is sulky, charm him out of it by frank good humor. If indolent, accustom him to exertion, and train him so as to perform even onerous duties with alacrity. If pride comes in to make obedience reluctant, subdue him by counsel or discipline. In short, give your children the habit of overcoming their besetting sins.