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THE MARTYRDOM.

Sixty-four years have passed since the martyrdom of the Prophet Joseph and the Patriarch, Hyrum, his beloved brother. But in the minds of the few still living witnesses of the scenes and events that culminated in the tragedy of Carthage, the impressions remain ineffaceable. To the friends of the martyrs the 27th of June, 1844. was a day of trial and sorrow, a day of crucifixion with its anguish and despair, its darkness and awe. To the enemies it was a day of terror. They fled though no one pursued. It was a day the memories of which followed the actors and spectators of the drama to the end of their lives-a day which history will mark as one of the most memorable in the annals of man,

An impartial inquirer who should try, at this time, to understand the real motives underlying the murder of the martyrs, would find several. In the first place, he would have to dismiss as utterly false the accusations of disloyalty, immorality, dishonesty, and imperial, or hierarchical, plots, in which the apologists for the assassins have found an excuse for their deed, The murderers were certainly not concerned about loyalty, honesty and morality. He would find, instead, various other motives. The Missouri mob-leaders were naturally forced, as a consequence of their previous misdeeds, to pursue their victims over the border. The existence of the Saints in Nauvoo, in peace and prosperity, was a standing rebuke of their inhuman and un-American conduct in murdering, outraging, and expelling thousands of the best citizens from the state. It became necessary, they thought, to justify their conduct by bringing about in Illinois the conditions that existed in Missouri at the time of the trouble there. To gain that end they committed outrages in the neighboring state, which they charged to the Latter-day Saints. Such procedure is common in the world of crime. One crime very often leads to another 'And as the mob-leaders of Missouri commenced operations of persecution in Illinois, they were aided by the lawless element that saw another chance to enrich itself on the fruits of the labors of the Latter-day Saints. They were aided by apostates who, because they had committed various transgressions and had been dealt with according to the rules of the Church, had sworn to be avenged. They were nided by ministers who undoubtedly imagined they were serving the Lord by joining the lawless mobs in a war of extermination of men whom they regarded as impostors. They were aided by politicians who feared the Prophet because he was a righteous man who demanded honesty and sincerity in the performance of public duties, as in private conduct. They

But, underlying all these motives was the one in which they all originated, the eternal struggle between light and darkness, truth and error, the Kingdom of God and the World. The Prophets of this dispensation were the ambassadors of the Almighty to a rebellious world. That is the great reason why they were slain. They were slain for the same reason that Abel met death at the hands of his brother, and numerous Christians were turned into burning torches in the days of Nero. They were slain for the same reason that Polycarp was given over to the flames by the proconsul of Smyrna. They were sacrificed for the same reason that Huss, Savonarola, and thousands of other great reformers and bearers of a divine message to man have been glaughtered in all ages and every land

feared that such a man might be-

come a dangerous rival.

If the Church could be destroyed by man, it would have terminated with the tragedy of Carthage. The Prophet and Patriarch were slain. The leaders were scattered. But the Lord raised up a new leader, and the Saints who knew the voice of the Shepherd were gathered, and a new era dawned for the Church with the martyrdom. After years the Church stands a beacon of light upon the mountains, to all the world, and the testimony rings out clear and unhesttatingly, that Joseph Smith was a Prophet of the Lord, hely and pure in his life, and triumphant in death.

LIFE IN SPACE.

life from one planet to another is a subject to which scholars have given some attention. Prof. Arrhenius regards it as quite possible that life has spread to many worlds from a common source.

According to recent investigations, it is thought probable that some germs are proof against cold that prevails in interplanetary space, and that the injurious action of light is absent in a vacuum. The loss of vitality in the cold space would be one thousand million times less rapid than at 50 degrees Fahrenheit, and desiccation would be no greater in thousands or millions of years than in one day at 60 degrees. Hence the conclusion that interstellar space may be traversed at enormous speed by living germs that develop life on reaching favorable

At the speed of 37 miles an hour it

would take 150 years to cross the space Mars, but a germ, using "the pressure of radiation" as motive power would make the trip in 20 days, we are told.

There is nothing unreasonable in the thought that intercommunication of some sort exists between the worlds, as between the continents of this world. The conclusion follows from the oneness of the universe. And when research is started in this field, we may

expect interesting discoveries. In whatever direction we look, we find that our knowledge is but as a drop of the great ocean of truth that surrounds us. But there is an eternity in which to learn and develop.

CHILDREN'S FOOD.

The American mother who thinks she is treating her children so much better than mothers in other lands can treat theirs, in the common practice of permitting them to cat whatever and whenever they desire to eat, and in whatever proportions they prefer, is making a great and costly mistake.

The average American child eats too much and drinks too little. Many a modern child's stomach carries a load that could not have been endured by the primal healthy child of our forc-

Otto F. Rapp is the chief chemist of the National Packing company. His business is to analyze prepared foods. to determine their life sustaining properties, and to see that no poisonous substances are introduced into them He has recently made some inves tigations as to the amount and quality of food eaten by American children. By the use of a little diplomacy he has been able to weigh the quantity of food taken into the stomach each day by a number of the children of his neighborhood. It required no little observation to do this, but as their mothers were interested in his experiments, they helped very much. He weighed not alone what the children had at the three regular meals of the day, but, so far as he could, what they munched between meals-candy, peanuts, fruits, cookies and pies.

The result was somewhat astonishing. In the course of his researches, Mr. Rapp discovered that three boys averaging ten years of age, devoured eight pounds of solids a day and about a quart of liquids-an dangerous proportion of fluids to solids. There was not enough fluids.

Five girls averaging twelve years of age consumed seven and one-half pounds of solids daily and a little more han a pint of liquids.

Five boys averaging twelve years of age consumed nine pounds of solids a day and a quart and a half of liquids. Eight girls averaging fourteen years of age consumed eight and one-half pounds of solids a day and a quart of

liquids. According to Miller, a food expert, "a full-grown, quite athletic man-a man whose organs are normally developed and who lives two-thirds of his waking hours in the fresh an-can live very comfortably upon five pounds of food every twenty-fuor hours. At least onethird of this five pounds should be liquid food. If necessity compels, this same man can live comfortably and without harm on three pounds of food each day, but he would have to select his food with greater care than where

he enjoyed the latitude of five pounds." Now, here were a group of American children, and perhaps they indicate an average, who consumed more food every day than is required by the "fullkrown athletic man," who "spends two-thirds of his waking hours in the fresh air."

Proportioning this food into its divisions of meats, breadstuffs, vegetables and sweetmeats, and knowing from the chemistry of the body how long a time would be required for each properly digest-to pass off its poisons and retain its nutritive powers-Mr. Rupp has ascertained, that from 18 to 24 hours, would be really needed by the stomach to do its full duty; and that before it had finished with one burden, a new one was added. The heart and digestive organs were always under the highest strain, never naturally rested.

"The argument," says this chemist, "that a growing child requires any such quantity of food is absurd. It is not borne out by any natural or scientific facts. As a truth, the digestive organs of the growing child require more rest and more latitude of action than do those of the grown adult. There is a normal demand for greater frequency in food supply, but not for greater quantity. Quality is more paramount than gross amount of

supply The same writer points out that so far as we can know, the primeval child ate often but not heavily. Food was scarce. Much exertion had to be put forth to get it. The hours between meals were often long. The stomach became inured to regular fasts. It had periods of comparatively regular rest, and hence was better able to perform its functions when filled. What it did get came in small quantities, and was easily disposed of in a short time. The process of digestion, instead of being burden, enslaved by peritonitis, collitis or apendicitis, was rarely considered by the eater. Nature was at its best.

We are naturally interested to learn how this authority deals with the food problem in his own household; he is prepared with a demonstration of the superiority of his methods. He gives to The possibility of the transference of his children the greatest latitude as to when they may eat, but restricts them as to what they shall eat and the quantity. He has taught them also take about 35 per cent of liquids every 65 per cent of solids, letting them sip pure water or milk or chocolate at their meals and encouraging them to drink freely a reasonable time after meals and a little time before eating again. Neither of them consumes over three pounds of solids a day, and usually the average is close to two pounds. They take liquids-soups, milk, water, chocolate, etc .- in propor-

> From this simple and sensible procedure let us note the results. These children are spare eaters, but eat frequently. In strength they are said to resemble young oxen. While they have had the ordinary ailments of normal children, stomachic troubles have been unknown to them. Their blood is never fowls of the heaven hath he given into

tion.

overheated, nor their brains clouded through gorging. They enjoy good food better than do the complaining children who gorge. Their palates have not been spoiled. The sense of discrimination in taste is strong with them. Pies. jellies, jams, pure candles, meats, vegetables, and fruits, all enter into their bill of fare, but at the proper time, in the proper quantity, and with lose observation of the quality.

The campaign of the battle of grown life opens to them with extraordinary interest because they are fortified with a digestive apparatus that enjoys regular rest, is never overworked, and has never been abused through ignorance or that most dangerous of lusts-the

lust of a pampered palate. Here, then, is a lesson for mothers, What horseman would permit a young colt to eat the oats fed to its mother and to eat when and how much it pleased. Yet mothers permit children to do similar things and to consume without limit the most deleterious kinds and mixtures of food.

SOLAR ECLIPSE.

There will be an annular eclipse of the sun, tomorrow, June 28, visible in this country, Canada, Mexico, Central America, and the northern part of

South America. An annular eclipse takes place when the moon, on account of its great distance from the earth does not quite cover the sun from the view of earth dwellers, but leaves a light ring, or annulus, visible in the line of the central eclipse.

The path of this eclipse commences far out in the Pacific ocean, about 2,400 miles southwest of the City of Mexico. Thence it runs over the Pacific ocean, coming to the west coast of Mexico, crosses that country, and brings the City of Mexico almost exactly in the central line, or annulus path. Then, leaving the east coast of Mexico the shadow axis crosses the Gulf of Mexico. entering the United States on the west coast of Florida, near the city of Tampa. Crossing central Florida, the shadow axis traverses the Atlantic ocean and leaves the earth on the west coast of Africa in upper Guinea.

The dates of beginning and ending of the eclipse for important places in the United States are given in a table in the New York World Almanach, and from this it is learned that it begins according to local mean time 6:58 and ends at 8:56 a. m.

MR. CLARK ON DANIEL II.

Ezra Westcote Clark, author of the International Sunday School Lessons, refers, in a recent issue, to Daniel 2:31-35, which reads as follows:

"Thou, O king, sawest, and behold a great image. This great image, whose brightness was excellent, stood before thee; and the form thereof was

terrible.

This image's head was of fine gold, his breast and his arms of silver, his belly and his thighs of brass,

"His legs of iron, his feet part of iron and part of clay.

"Thou sawest till that a stone was cut out without hands, which smote the image upon his feet that were of iron and clay, and brake them to nieces.

Then was the iron, the clay, the brass, the silver, and the gold, broken to pleces together, and became like the chaff of the summer threshingfloors; and the wind carried them away, that no place was found for them: and the stone that smote the image became a great mountain, and filled the whole earth,"

This image Mr. Clark says, was meant to typify:

"the rise of four all-powerful world monarchies. Their reign was not to be eternal. A power was to come that, like a white stone out of a clear sky, would crush the image, and fall-ing to the ground, would grow into a mighty mountain.

Nebuchadnezzar the Great, ruling Assyrian-Babylonian empire, with its Oriental splendor, represented the head of gold. Its integrity destroyed by its prosperity and its vital strength sapped by its superfluity of luxuries, it passed from power to give place to

the succeeding kingdom.
"Cyrus the Great, god of the sun, ushered in the glorious era of the Medo-Persian empire. Here were found the breast and arms of silver. For two centuries the world paid tribute to this dynasty. Once more the pomp of prosperity sounded the knell of the nation's glory, and a young giant of the Attic trailed the colors of the second empire in the dust the second empire in the dust.

"Alexander the Great, the invinc-ible warrior and victor of a hundred campaigns, defeated the Persian hosts at the battle of Arbela and succeeded to the throne and established the new Greco-Macedonian empire, together with their learning and art into the uttermost limits of the then known

The Caesars built their empire the ruins of Alexander's domains and shifted the center of the world's ac tivities from the East at Babylon to the West at Rome. The rule of iron had come. Caesar Augustus ruled as had come. Caesar Augustus ruled as king of kings and lord of lords. All religious, civil, and political powers, privileges, and titles were vested in him. Rome and her unconquered legions ruled the world.

"Peace was found in all the continents and commercial prosperity swept the tithes of the nations up to Rome. Traveling was safe and scholars and seers carried the learning of the tributary countries to her gates. Peace was proclaimed from the temple of lanus. It was a peace because the Janus. It was a peace, however, in which there was no enduring joy. The cry of the prophets was stilled. The ace of Jerusalem was a hollow ockery. Religion as represented in dalam was dormant and nearly end. The soulless formalism of the ritualistic church had taken the fire of spiritual fervor out of the Jewish heart. Peace had come at the price

"Like a white stone out of a clear sky, to shatter the colossal image, came the Son of David, the Prince of Peace, the Savior of the World, the Messiah. A single enthusiast standing bareheaded on the Joppa road antiounces the coming of the new kinglom. A celestial choir welcomes the birth of the helr to the throne. A white dove brings the heavenly attestation and the voice of the clouds problating the inauguration of his reign. Messiah dozen disciples become the faithful.

So runs Mr. Clark's exposition which may be regarded as typical of Christian thought throughout the civilized world today. Much as we admire the pith and brevity of Mr. Clark's explanation, we prefer that given by the Prophet Daniel himself in the verses 35 to 44, as follows:

This is the dream; and we will tell interpretation thereof before the "Thou, O king, art a king of kings; or the God of heaven hath given thee kingdom, power, and strength, and don't

thine hand, and hath made thee ruler over them all. Thou art this head of 'And after thee shall arise another

"And after thee shall arise another kingdom inferior to thee, and another third kingdom of brass, which shall bear rule over all the earth.

"And the fourth kingdom shall be strong as iron: forasmuch as iron breaketh in pieces and subdueth all things; and as iron that breaketh all these, shall it break in pieces and brulse.

brulse.

"And whereas thou sawest the feet and toes, part of potters' clay, and part of iron, the kingdom shall be divided; but there shall be in it of the strength of the iron, forasmuch as thou sawest the iron mixed with miry clay.

"And as the toes of the feet were part of iron, and part of clay, so the kingdom shall be partly strong, and partly broken.

"And whereas thou sawest iron mixed with miry clay, they shall mingle themselves with the seed of men: but they shall not cleave one to another, even as iron is not mixed with clay.

"And in the days of these kings shall be clad of heaven set up a kingdom.

en set up a kingdom, be destroyed: and the ot be left to other peothe God of heave kingdom shall but it shall break in pieces and sume all these kingdoms, and it shall stand for ever."

Observe that it is to be "in the days of these kings," evidently the days of the division of the Roman empire into many kingdoms represented by the feet and toes of the great Image, and not in the days of the Roman empire itself epresented by the legs of iron, that the "God of heaven" had determined to "set up a kingdom," which should break into pieces and consume all those kingdoms," and which should "stand for-

ever. The vision of Nebuchadnezzar still awaits its complete and final fulfillment. When the Lord comes to earth to reign, the nations will understand. Till then our attitude should be one of preparation and expectation, well knowing that the word of the Lord cannot fail, however men may err in its interpretation.

WE ARE OPTIMISTS.

Americans are natural optimists. They generally try to find the sunny side. They always believe in the future.

Only a few years ago the annual appropriations of Congress seemed appalling. A "billion-dollar Congress" was the subject of comment all over the country. But we have two-billion dollar Congresses, and a fair prospect of a three-billion dollar Congress in the not distant future. But the prospart is not alarming any more.

It has been discovered that this is a wealthy country. The crops alone are valued, this year, it is said, at eight billion dollars. This sum represents nearly nine times the interest bearing debt of the country. So we can afford to pay billions of dollars for the government. This is the optimist view, There is, unfortunately, another side.

If the wealth of the country were as evenly distributed as the burden of taxation is, the expenditure would hardly be feit. That is very true. But somehow the great mass of the people are not blessed with farms from which to gather an abundant crop, or with bank accounts, or government bonds. They are laborers, earning very little, comparatively speaking, while they are made to pay their full share of those billions that are needed for government and public purposes. Every increase of public expenditure falls oppressively heavy upon that large part of the nation which is staggering under the yoke. Every unnecessary increase is sure to stimulate the struggle between the classes. Every careful observer believes that the contest between the "haves" and the "have nots' which is to mark this century will be fought out first of all upon

American soil. But American optimism regards even this coming conflict with confidence in the final outcome. It believes that the right remedy will always be found, when needed. The Republic that stood the storm of the Civil War and came out of it stronger and more united, will endure the coming effort at a just distribution of the nation's resources. The settlement of that question, too, will be in harmony with true democratic principles.

Wray for Harvard!

Te "Little Venice" aching for a carni-

Public opinion is a sort of outer con science.

Beef on the jump is higher than beef

There are just three days of grace for June brides.

The man who stands on his dignity

usually stands pat.

Planks have knot holes while platforms have loopholes.

Would not Whizzer of the Wasatch e the better name? Rolling stones gather no moss, but it

s different with "rocks."

The man who overestimates himself rarely overworks himself.

"No loss without some small gain," says Hearst to McClellan, "No excellence without labor," does

not refer to poll tax labor. Campaign lies are a sort of mixture between white and black lies.

minister say to his wife, "Ah! Wu is

The danger from a tempest in a tea-

pot depends entirely on the size of the

To Secretary Taft Yale's defeat

kloker.

Before conventions "planks" are of ten nothing but boards of trade. And when he met her did the Chinese

A bumper corn crop means that some one is going to be bumped in the corn

As the song is most to the singer so the kicks are most to the chronic

Work while the campaign lasts for Dubols. when the election night cometh no man can work.

the hands of Harvard is as the fly in

The crowded street car is about the only place where a person cannot "go way back and sit down."

At Denver the New York World can find the answer to its oft relterated question, "What is a Democrat?"

The New York Tribune says that Mr Roosevelt's English is clumsy and illogical. But as Swift said of himself, he manages to argue pretty well.

A New York girl captured a burglar the other day and was highly commended by the magistrate. Had she captured a lover her girl friends would have commended her.

"What becomes of all the busted presidential and vice presidential buttons? Is there a more useless and pathetic relie of hopeful days?" asks the Boston Herald. They become flotsam and jetsam on the sea of politics.

We are indebted to Frank K. Nebeker, Logan, for the following lines: 'Editor Deseret News-Permit me express my personal appreciation of the editorial on ex-President Cleveland, in Wednesday evening's 'News.' I think it is a very able estimate of the character and work of this great American statesman.

If the citizens on the West side, who, very properly protest against the proposition to establish a veritable hell gate in their locality, are in earnest, they might apply to the courts for protection. Neither the Mayor, nor the Chief of Police, nor the City Council, nor all combined, can legally consent to the use of any building for immoral purposes. Petitions to the City authorities may be useless, if they have decided to make the change for some reason or other, but an appeal to the courts should have the desired result.

The Tribune triumphantly exclaims that it now has abundant proof of its assertion that the Church interferes in politics, and the proof, more particular ly, is that the "News" would not dare to print such matter as it has printed lately without being ordered to do so, We are left to guess as to what "matis referred to. We have said that Mr. Taft, if elected, will make an excellent president. We have said that Mr. Bryan has many of the qualities that would make him a good chief executive. We have endeavored to give an estimate of the character and work of the late Mr. Cleveland. Why do not the curs in the Tribune office indicate in some way, at which of these features they are barking? If it is Church interference to speak a word of compliment of Mr. Taft, then the Church has interfered in the offices of the New York World, The Cleveland Plain Dealer, the Atlanta Constitution and scores of other independent journals of the country. The Tribune has no substantial peg on which to hang its accusation of Church interference in politics, and so it grasps a shadow.

THE MAN AND HIS JOB.

By Herbert J. Hapgood.
One tactful way of getting more work out of employes, and at the same time establishing a mutually helpful relation between employer and employed, is the business dinner party. In fact, a large number of restaurants in the business districts of all the large cities, owe their existence to this practice, which has become quite the vogue among employers, who invite their employes to dinner, and then their employes to dinner, and then talk business. In a large downtown restaurant in New York City the other evening, just before the closing hour, it was noticed that there was whose cloth was not pencil. On one was apparently the outline of an advertising campaign, on snother the estimate of a large print-ing contract, and on still another the arrangement of an office force.

While such actions could never be considered good etiquette, the tenden-cy to do business over the dining table is almost irresistible. More Contracts been signed and more closed over coffee and cigars than is

commonly supposed.

The idea of business banquets to which the whole executive staff and sales force are invited at the expense of the firm has been proved to be an adequate way of imparting instruction and inspiration to all concerned. a good thing for employer and em ployes to meet occasionally on com mon grund and mix socially, Merci good time is not the only motive; or a dinner of this sort is one of the est ways on record of getting right down to business.

JUST FOR FUN.

Tommy Atkins.

Recruit—Please, Sergeant, I've got a splinter in my 'and.
Sergeant-Instructor—Wot yer been doin'? Strokin' yer 'ead?-Punch

Caesar's Dilemma

The boy advanced beldly to the front of the stage. With a comprehensive bow that took in the board of education, the school principal and the audience, he began his oration.

"Caesar," he resonantly remarked, "had reached the ranks of the Rubicon—I should say the branks of the Brubicon—that is, the hunks of the Brubicon—I mean the brab of the Bankst.

con-I mean the brab of the Banksi

The boy drew a long breath. So did the audience.
"And so," the orator continued, "he went back and tried it again."
This time he succeeded.—Cleveland

Information Gladly Doled Out

Plain Dealer.

Mrs. Chugwater-Josiah, what is pothecaries' weight? Chugwater-Apothecaries' wait? It's the interval that elemens walt? It's the interval that elemens between the time when you give the apothecary a prescription and the time when he fills it. Can't you tell from the word itself?—Chicago Tribune.

"I see," observed the delegate with the retreating hair, "that Texas has sent Tatt a present of a pair of wool Yes," commented the delegate with the the ingrowing chin, "all wool-yard wide."—Chicago Tribune,

"What's a bumper crop, paw?"
"It's a large one that grain gamblers
use to bump the consumer."—Philadelphia Ledger.

"Don't trouble to see me to the door, "No trouble; quite a pleasure, I as-sure you."—Philadelphia Inquirer.

UTAH By J. H. Paul.

Brief Notes on Its Physical Features, Resources, and Development.

STRIKING FEATURES OF OUR MOUNTAIN CLIMATE.

The opening of spring is very dif-terent over the plateau region from that over the Mississipi valley. Over the latter, brisk southerly winds and high temperatures prevail, the ther-mometer sometimes registering as high as 70 degrees in the afternoon or early spring; while within the Rocky moun-tain area, the winds come from the high temperatures prevail, the theras 70 degrees in the afternoon or early spring; while within the Rocky mountain area, the winds come from the north, and the thermometer registers from 30 to 40 degrees only, with frequent snows; on the mountains and eastern foot-hills, and with late spring

frosts in the higher valleys. Mountains have both their coldest and warmest hours of the day an hour or two earlier than do the lowlands. Thus the Obir and Somblick summits of Austria-Hungery show that 4:30 a. m. and 2:30 to 3 p. m. are the coldest and warmest times respectively of the day. In most of the lowlands, the warmest hour is from 5 to 6 o'clock. and the coldest is just before sun-

INVERSIONS OF TEMPERATURE. "Throughout the western plateau,

where we are so much accustomed to seek the mountains for coolness in sum mer, it seems contradictory to say that in winter especially, the places at an intermediate altitude are warmest. It must be remembered that the severe winter cold is not usually imported by cold north or northeast winds, but is locally produced by radiation under the clear sky of the long nights, especially if the ground is covered with snow. The cooling of the air under these conditions normally proceeds from below upward, and the cold strata have at first very little vertical extent."-Hann Cold air flows down from the mountains in calm weather and is replaced by other air from above, which is not so cold. and being compressed by its descent, becomes still warmer; so that warm weather may prevail on the mountain tops, while frosts occur in the valleys.

These temperature inversions in the plateau region occur whenever, in the vinter season, the clear weather that follows a cyclonic storm moves southastward along the eastern slope of the Rocky mountains just at the time when the southern portion of the Great Basin is occupied by a cyclone, or storm center. One record shows that Hall's Guich at an elevation of 12,000 feet, in February, 1905, had for 14 successive days a mean temperature only half a degree lower than at Denver, which is more than a mile nearer sea level. In detail the mean of these temperature inversions for the 14 days, beginning Feb. 1, were as follows, in degrees F. East of the divide, 4,500 to 6,500 feet, at Fort Collins, Colorado Springs, Denver Boulder, etc., 7, 2, 3, 13, 21, 16, 16, 22, 21, 16, -2, -11, 7, 14,

At 6,500 to 8,500 feet, at Cheeseman Salida, and Idaho Springs, the temperatures on the same days were: 18, 29, 32 84, 26, 26, 23, 20, 16, 17, 4, -2, 8, and 21. Observe that these temperatures av

6.500 to 8,500 feet, west of the Divide,

6,500 to 8,500 feet, west of the Divide, at Pagoda, the temperatures far higher, than those of the Fort Collins region, were: 26, 31, 34, 22, 28, 25, 14, 15, 13, 6, 16, —16, —4, 10.

From 8500 to 12,000 feet, at Breckenridge, Silverton, and White Pine, the temperatures west of the Divide were: 27, 28, 28, 21, 19, 18, 13, 1, 16, 16, 0, —2, 10. Here the difference between the temperature at great altitudes west of the Divide, as compared with that of the Fort Collins area east of the mountains, is so great as to be particularly impressive of this remarkable law of exceptions to the general rule that the exceptions to the general rule that the temperature falls, somewhat regularly, with elevation above the sea.

MOISTURE OF MOUNTAINS.

The atmosphere of high mountains contains most moisture soon after noon, and least in the early morning hours; sudden changes and storms oc-Clouds often form at the sum mits, due to winds rising from the valley and passing over the moun-tains. Frequently the air is so dry that hands and face crack and bleed, and thirst is keenly felt. Evaporation is great because of the diminished air pressure. Meat dries without dec ing, and even dead animals may mummified. On the high peaks noon hours are clearest in win Meat dries without decay noon hours are clearest in winter, cloudlest in summer. Rainfall is heavier than in the valleys, and the cultivation of the latter is dependent upon the amount of the winter snows stored by the higher ranges. In the whole western plateau, all the country lower than 3,280 feet is a desert, and between that altitude and 5,000 feet is a partial desert. The rainfall increases with the altitude. "At greater elevations, the ground is more and more covered with vegetation, and at altitudes of 6,500 and 8,900 feet, there are magnificent virgin forests, with rich magnificent virgin forests, with valleys and numerous springs of water If this region were all below 3,280 feet it would be one vast desert, which it would be one vast desert, which would have an extent greater than half of Europe."—Low. The mountains have usually a moister and a drier side, depending upon the direction of the wind. The increase of rainfall with altitude does not continue to the tops of the highest peaks. Above a certain height, the precipitation decreases: Vapor is carried up the slopes on warm days by the wind, and precipitation may dry the winds.

and precipitation may dry the wind, and precipitation may dry the winds before they reach the summits. The altitude of the greatest rainfall in our mountains has not been determined, but it must vary a good deal with local conditions. In India, it has been shown to occur at less than 5,000 feet above the sea; but would be vastly higher, here on account of our teclehigher here on account of our isola-

ZONES OF CLIMATE.

So, too, the snow-line, which near the equator has a well defined limit (14,700 feet at Quito), and in the drier tropics 18,000 feet, is, on Mount Shasta, only 7,874 feet. The lower limit of a glacier on the eastern side of Mt. Nebo, can not be much greater. But in general our mountains have no snow line. The evaporation is so great in the dry air that the snow disappears except on northern or shaded slopes, or where snow has accumulated in deep ravines and banks, or where an occasional ice tonsue, or glacier, extends downwards, as in some of the higher Ulntahs. In central Europe, grain ceases to grow and permanent homes are not found at altitudes above 5,000 feet in the Ortier and at 6,228 feet in the Octsthal Alps; hay lands cease at 6,000; summer Alps; hay lands cease at 6,000; summer

mountain summits, which are with snow during the greater the year. These are, in round m the altitudes for the northwes of the mountains, and the figures be increased 325 feet for the s and southwestern sides, and de from 800 to 1,000 feet for the n side guiches. It is found by that, in comparison with the lotte same plants grown as him. that, in comparison with the lotthe same plants grown at high tudes contain more sugar, oils loids, and coloring matter; the some are more brightly color leaves are thicker and of a green; the twigs are shorter, and more closely to the ground. By contain less sait in the ratio of and the blood and milk of materials and the blood and milk of materials and the blood and milk of materials.

DAILY RANGE OF TEMPERATURE

In Europe the daily range of ter In Europe the daily range of temperature, or the amount of change the occurs in 24 hours, is less on the mountains than in the valleys and grows smaller with each higher altitude, but is more marked on isolate peaks than on larger land masses. Be our open valleys, though high, may have a large daily range. Thus Sm. man, Wyoming, in an open pass, grantitude of \$,300 feet, has a meadural range of 18 degrees F. and Georgetown, Col., has 30 degrees at action in a day. On certain mountaintops of Europe, the daily range is a Bernard, 8 degrees; Mount Blanc, 43. tops of Europe, the daily range is a Bernard, 8 degrees; Mount Blanc, 61; Elifiel Tower, 6.6; Obir and Sonnblik (Austria), 3 degrees, these being the highest, aout 7,000 and 10,000 feet, respectively.

spectively.

At a height of 1,000 feet about Paris, the daily range of temperature is only about half that of the city itself. But elevated land masses, far variations, which increase with the from the ocean, have great daily dryness of the air. Plateaus and high valleys have, therefore, great daily ranges, which often amount to a much as 45 or even 55 decrease in ranges, which often amount to a much as 45 or even 55 degrees in 31 hours, while the average daily change on the plateau is believed to be from 32 to 36 degrees. At St. Louis, or the other hand, the daily change from 7 a. m. and the afternoon maximum rarely reaches 12 degrees. Thus, low call things are very compressive from rarely reaches 12 degrees. Thus lor altitudes are very oppressive from heat in summer, while the highland cool off every evening, an altitude d 6.500 feet in the western plateaus having an average variation of 20 degrees. At San Diego, Cal., the meas daily change for August is 11 degrees, while on the interior, far from the ocean, at Yuma, Ariz., the daily range for August is 29.34 degrees. A Death Valley, Cal., the average daily change in August was 32 degrees, and the greatest change noticed was 36.54. The striking contrast between the The striking contrast between the dry plateau climate and the most climate of ocean shores, is better appreciated when we know that the Atlantic ocean is less than three degrees and the monthly range less than twelve degrees, while the temperature of the water itself varies only from 7 tenths to 9 tenths of a degree in a day

OTHER STRIKING CONTRASTS. At Highlands, N. C., 3,817 feet, there is

an extreme variation from 63 above to 10 degrees below zero in January; from 67 above to 19 below in February; from 75 above to 7 below in March. The 75 above to 7 below in March. The next eight months are all above zero, as follows: April varies between 31 and 15 degrees F.; May between 34 and 26 degrees; June, 87 and 32; July, 8 and 39; August, 85 and 40; September, 84 and 27; October, 79 and 15, and Nevember, between 72 and 3 degrees F. Then comes December, running from 69 above to 10 degrees below zero. The North Carolina annual maximum is North Carolina annual maximum is therefore 87 above, and the minimum 19 degrees below zero. On Pike's Peak, 14,134 feet, we have for January from 30 above to 37 below zero; February, 29 above and 37 below; February, 48 above and 29 below; March, 48 above and 29 below; April, 39 above and 21 below; May, 47 above and 8 below, June, from 63 to 2 above zero; July, from 64 to 18 above; August, from 64 to 18 above; Feora 54 to 15 above; September, from 54 to 6 to 15 above; September, from 55 to 6 above; October, from 57 above to 11 below; and December, from 30 above to 39 below; the annual maximum being 64 above and the minimum 39 belo The annual range in the N. C. high lands is therefore greater (106 degrees than that of the Rocky mountain sum

mit (103 degrees), which is more than 3½ times higher.

The mean annual range, or the difference between the average temperature of the coldest and of the warmes months, in the interior valleys of the Rocky mountain region is 40 grees; in the shore cities of the Paci coast, the mean annual range is only degrees; in those of the Gulf and Sou Atlantic coast states, 30 degrees; ove the northeastern Rocky mountain slop and thence eastward to Lake Super it ranges from 55 to 65 degrees. too, the mean daily range of temperature is greatest (30 to 35 degrees), if the plateau region; and least (8 to if degrees) along the Pacific and Gu coasts. Yuma district, Ariz., as Death Valley, Cal., which have the greatest daily range in the semi-an greatest daily range in the semi-ar-southwest, show mean maximum tea-perature for July of 105 degrees; the lightest summer heat, 113 degrees; the mean minimum for January, 40 de-grees; and the lowest ever known, 20 degrees below zero. The greatest ab-solute range in any part of the coun-try is at Havre, Mont., 163 degreesfrom a maximum of 108 to a minimum of 55 below zero. Elsewhere in the Rocky Mountain plateau the extreme variations are about 120 degrees, and diminish from north to south till at Phoenix, the annual range is 107 de-trees.

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