

Many million years ago in the area of the west now known as the Colorado Plateau - the mountain backbone of the North American Continent - a slow change began that had its origin deep within the crust of the earth. Caused by forces believed to involve the very dynamics of the interior of the globe, a wide-spread upheaval of the sedimentary deposits <sup>dating</sup> ~~dated~~ back to the <sup>Paleozoic</sup> ~~Permian~~ <sup>era</sup> gradually raised them above the level of the shallow seas which intermittantly occupied this region.

During the preceding several hundreds of millions of years from the first appearance of air-breathing vertebrates until the end of the age of reptiles, layer upon layer of mud and <sup>gravel</sup> clay and sand was deposited over the low land <sup>in shallow ~~or~~ <sup>of</sup> ~~the~~ <sup>existing</sup> ~~oceans~~</sup> and under the then existing seas. Silt washed by rivers and streams from ~~the~~ eroding, ancient mountain chains filled in the swamps lands and basins which in time became deserts. A harsher, dryer climate superseded the lush eras and ~~an~~ aeolian ages came into being. For perhaps a thousand thousand years winds swept unimpeded across the limitless ~~spaces~~ spaces of rolling dunes. Timeless as these periods seem in terms of human lives, in geological measure they were but moments in the kaleidoscopic changes constantly altering the face of the earth. Seas gave way to deserts and deserts were inundated by advancing seas in an endless shifting

*refused + we needed*







into the shales and clays formed under the vast swamps of the  
 backwards and  
 Cretaceous, for a hundred million years ~~or~~ more, and down through this  
 inconceivable history  
~~great~~ distance in ~~time~~ particle by particle ~~scrubbed away~~ scrubbing away  
 through the golden age of reptiles. The hard sands of the Rocky Mountains  
 were the first tools for this great channeling process until as the  
 work continued the river made its own abrasives from the rocks through  
 which it was flowing, as diamond dust is used to cut diamonds. <sup>H</sup> And still  
~~the~~ restless forces from deep below pushed up the continental crust.  
 Down, down into ever deeper layers the tireless waters of the river with  
 their burden of <sup>gules</sup> powdered rock ground their way. They dug into the con-  
 solidated sediments of the Jurassic formed at the bottom of the shallow  
 seas, inhabited by ~~these~~ <sup>the chelonians and other</sup> marine reptilian monsters, the ~~plesiosaurs and~~ <sup>of age</sup>  
~~ichthyosaurs~~ and on down into the sands of the Triassic deserts, <sup>present</sup> through  
 the wind stratified and cross-bedded dunes of the aeolian ~~age~~ leaving  
 the age of the dinosaurs behind and on through the millions of years  
<sup>steaming swamps of the</sup> of the Permian to the Carboniferous, ~~period~~ <sup>time</sup> the age of the greatest abundance  
 of plant life when the world's coal seams were formed and when the first  
 land animals appeared. In places where the land rose faster and higher  
 the river dug through all the remaining sediments of the Paleozoic  
 era to reach and grind into the oldest of all formations on the earth,  
<sup>hard,</sup> the metamorphic, archaic shists and granites that go back to the time  
 before the appearance of life a million million years in the past. Still  
 today it is cutting into these rocks which can be seen exposed where  
 they form the dark, forbidding walls of Granite Gorge at the bottom of  
 the Grand Canyon. <sup>The message</sup> But it would be a mistake to think that all these <sup>which</sup> layers  
 from the Precambrian up to the present are visible <sup>across the</sup> throughout the river's  
<sup>great</sup> length like the layers of a cake, ~~or that they are even represented~~ <sup>all</sup>  
 at any single place. This is not so because erosion has always been going  
 on from time immemorial. Before the last great upheaval started many of

would be to forget that geological history  
 the forces that ~~sculpted~~ <sup>uplifted</sup> the earth as river of rest



the sediments deposited in the past had, over large areas, been completely washed away before subsequent layers were deposited. With the unstable land rising and falling for past eons and erosion and deposition following one another in perpetual cycles ~~many of the deposits~~ much discontinuity in the layering resulted. One finds here and there sediments in juxtaposition that were layed down in periods separated by scores of millions of years. ~~Evidence of what happened once deposited~~ In the intervening time much material may have been deposited and ~~also~~ washed away. Mixing of the strata has also been caused by faulting and folding of the crust which interleaved in time with the forces of and erosion/deposition has produced situations of such complexity that the evidence for the exact sequence of events is often difficult to read.

~~from the river~~

<sup>while</sup> As the river has been <sup>digging</sup> digging into the past at the bottom of the slot <sup>which</sup> it has <sup>had</sup> cut across the landscape - a meandering slot roughly following the path of the <sup>main</sup> early sluggish stream but which has by cutting here and there been staightened temporarily ~~by the river~~ through the narrowing neck of a loop and in so doing leaving behind <sup>a</sup> the dry <sup>marked</sup> are/as clear evidence of its once more lengthy courses - so have the forces of erosion on the land above been at work reducing it too.

Much material has been blown and washed away, most of it into the river itself <sup>by the many tributaries entering its</sup> <sup>at its own</sup> <sup>entrance</sup> <sup>entrance</sup> course from both sides through canyons of their own. Many of the most recent sediments in the country surrounding them have disappeared (so that its history must be read from indirect evidence) leaving a ragged land of buttes and pinacles, of deep canyons and wide valleys, of sandy, arid basins and <sup>juniper-</sup> tree-covered mesas. The <sup>recent</sup> <sup>history</sup> of this country, geologically <sup>speaking</sup>, has probably changed more than the history of the river itself, which would be less effected by changes in the climate than the plateau areas. During the last glacial epoch this country was much more lush



of pines <sup>and juniper</sup> plateaus  
 than today. Forests/clothed the ~~plateaus~~ which now support a meager  
 growth of juniper. Clear streams flowed in all the valleys and  
 canyons which are today watered ~~only~~ by the occasional mud-laden  
 flash floods of summer. Grass grew thick and high where now rock-  
 strewn sandy wastes exist and <sup>a</sup> sparse desert growth/survives. <sup>only</sup>

Lying between the Sierra Nevada range on the west and the  
 Rocky Mountains to the east and encompassing the area which includes all  
 of <sup>the state of Nevada</sup> ~~the States of Nevada and~~ Utah, the northern half of Arizona, and  
 Wyoming, California,  
 parts of Colorado and New Mexico is a great sweep of arid land known  
 as the North American Desert <sup>including most of Nevada and the whole Plateau</sup> or the Great Basin. Broken by scattered  
 islands,  
 mountain ~~masses~~ <sup>including</sup> many of them of volcanic origin which  
 speaks of the violence of the geological history of this part of the  
 great  
 United States, but crossed by no/mountain chains, this enormous area  
 includes  
<sup>is the</sup> ~~is the~~ <sup>its southern half which constitutes the whole Plateau</sup> ~~the~~ upper drainage basin of the Colorado River. All the waters  
 that enters ~~this area~~ whether from the sky as rain or from the melting  
 of snow on the peaks of its periferal mountains, except that which sinks  
 to  
 into the soil to appear mayhap lower down in a spring ~~and~~ join from there  
 the flow again, or which evaporates into the skys again, all these flow  
 finally  
~~ultimately~~ into the Colorado to be carried thousands of miles to their  
 ultimate destination in the Gulf of California where they mingle with  
 the salts of the ocean.  
<sup>most dependent of ocean and</sup> <sup>upper</sup>  
 The ~~driest~~ and most sparsely populated part of the Colorado  
<sup>system</sup>  
~~River watershed~~ ~~includes~~ lies along either side of the river from Moab  
 on the Colorado and Green River on the Green south through southern  
 and  
 Utah/into northern Arizona as far as the beginning of Grand Canyon.  
 Throughout this whole stretch ~~of~~ the Colorado ~~the river~~ flows between  
 high canyon walls for a distance of well over three hundred miles.  
 These  
~~The~~ boardering lands are among the most rugged, eroded and impassable  
 in the whole nation. They are cut throughand through by innumerable  
 dry canyons having such precipitous walls that into most of them ~~no few~~



trails lead from the surface above, and which itself consists  
 more or less literally  
 in many places of rolling mounds of bare rock --/solidified sand dunes.

Two major tributaries join the Colorado in this arid region; the Green  
 further down  
 River first and then the San Juan, both through formidable canyons.

The physiography ~~of the canyon country~~ and historical geology of the  
 which were given names that they still bear by the early explorers  
 canyon divide it naturally into distinct parts. Starting just below the

confluence with the Green River the gradient increases steeply, the  
 river becoming turbulent and full of rapids for the next ninety miles  
 of its course until it smooths out above Hite the ferry crossing at Hite.

This section was named Cataract Canyon by John Wesley Powell. The Hite  
 crossing, which is a cable ferry, was, until <sup>the cable ferry was</sup> the high bridge at the  
 Glen Canyon dam site was constructed a few years ago, the only point,  
 except at Lee's Ferry and the subsequent Navajo Bridge, at which the  
 Colorado River could be crossed by automobile between Moab and Boulder  
 Dam. At Hite, where White Rock Canyon enters from the left, Glen  
 Canyon begins, and extends its winding course for one hundred and thirty  
 miles through the sandstones of the Wingate and Navajo formations to  
 Lee's Ferry where the river, emerging between the Vermilion Cliffs  
 of the Paria Plateau to the right and Echo Cliffs on the left, enters  
 an older rock formation in Marble Canyon, which Marble Canyon gradually deepens  
 to become Grand Canyon at the mouth of the Little Colorado River.

Glen Canyon, also named by Powell, is the part of this canyon  
 stretch of the Colorado River with which this book is concerned. Since  
 throughout the whole length of the canyon  
 the gradient of flow is very slight/increase, no rapids of any  
 consequence are found here. The river flows placidly and unruffled  
 except for the rough places, especially in the rapids  
 during periods of low water when the  
 hazards to navigation, if any, are owing to the shallowness of the water  
 as well as on account of the spectacular scenery it  
 than to its swiftness. On this account Glen Canyon has long been a  
 favorite section of the Colorado for boat travel. Furthermore, it is  
 easily accessible at the Ferry crossing at Hite, while exit from it was

affords



available at Lee's Ferry before ~~the~~ construction of Glen Canyon dam began and can now be made at El Vado de los Padres at Kane Creek where Escalante ~~xxxx~~ two centuries ago found a way back to Santa Fe after his abortive attempt to establish a route to California.

When I first went ~~down~~ <sup>to</sup> Glen Canyon/this was the trip I took . several years ago

We rode the river in <sup>inflated</sup> ~~(surplus Army)~~ rubber boats called LCRs which are elongated, doughnut-shaped/tubes with ~~rubber~~ <sup>inflated</sup> floors and stiffened by and resilient two inflated cross members. They are incredibly tough/being made like automobile tires of laminated rubber and fabric capable of withstanding heavy batter ing ~~on~~ the river rocks, <sup>and on runs they are</sup> severe abrasion against by river gravels ~~and heavy blows against jagged rocks~~ <sup>being they</sup> ~~stanch~~ and since ~~the inflated tubes are~~ compartmentalized they are practically unsinkable even when punctured. They are capable of carrying an inconceivable amount of baggage and supplies without being overloaded.

Three times I have made the trip from Hite to Kane Creek by rubber boat; once from Mexican Hat on the San Juan River into Glen Canyon and on down El Vado nearly to El Vado; and once from ~~there~~ up stream by out-board motor/ to the mouth of the San Juan. Each time was a more emotionally exciting experience than the time before. To truly appreciate and understand Glen Canyon requires experience with it. The first experience is too overwhelming to take <sup>it</sup> in or to be able to concentrate fully enough

on any aspect or feature of it to keep ~~in the~~ <sup>in perspective of the</sup> or seeing it to ~~permit comprehension~~ <sup>understand it when</sup> the scenery to see its intrinsic beauty. The eye travels from one <sup>object to another</sup>

object to another from the vast to the minute in <sup>quick and erratic</sup> motions unable to pause long under the compulsion of ever new sights that insinuate <sup>themselves</sup> into the corners of vision. During later experiences one is able to exclude the irrelevant and ~~general~~ from a in an examination of study of the particular and it is/the particular that the greatest rewards are found. Glen Canyon despite its impressiveness is an intimate canyon; not like Grand Canyon which is so vast and, as people so frequently



The first experience is too overwhelming to leave room for taking in any but the broadest features and boldest strokes. The eye is numbed by its vastness and magnificence and passes over the fine details ignoring them, very likely, out of a sort of self defense against a surfeit of wonder. The big features, the massive, towering walls, the shimmering vistas, and the enveloping presence of light hypnotise the consciousness at first, shutting off awareness of the particular. Later it becomes possible to refocus on smaller, more familiar, more comprehensible objects which when finally seen in the context of the whole are recognized to be endowed with a wonder no less than the total, and it is from them that the greatest rewards are gathered. Then it is possible to see for the first time the velvety lawns of young tamarisks <sup>sprouting</sup> ~~springing up~~ flood or ~~moire~~ <sup>moire</sup> on the wet sand bars just vacated by a retreating river; the way the ~~city~~ <sup>swirling</sup> surface of ~~marble~~ the green, opaque river ~~reflects~~ converts ~~the~~ reflected light from ~~the~~ rocks and trees and sky into a silken, moire sheen of interlacing coils is seen lines and ~~spots~~ of color; then the festooned designs etched in the scaling ~~walls~~ by water and lichens ~~to resemble~~ <sup>recalling</sup> to a free imagination scenes ~~pictures~~ of great ~~historic~~ events, cartoons of life, or the flight of birds.



understanding that one becomes obsessed with a remark with despair, beyond ~~comprehension that attention is not readily~~ feeling of unreality ~~focused~~. ~~The walls rise hundreds of feet not thousands and it is in the character of these walls that the special quality of Glen Canyon resides.~~

Many of the vistas within the canyon are breath-taking but not more so than many views of many of the natural wonders in the national parks. It is partly because a trip though Glen Canyon ~~could so easily be made~~ ~~by~~ <sup>its</sup> ~~river~~, affording association with ~~the~~ physical attributes not ~~to be~~ seen obtainable from a river canyon ~~observable~~ only from above or at most dipped into at a very few places; but not less is ~~the~~ feeling of intimacy ~~it gives to its visitors by the~~ <sup>owing to</sup> calmness and congeniality of its waters and the closeness of its walls, which lack completely the <sup>most</sup> inimical and forboding quality of impending danger ~~that the~~ <sup>mine</sup> either the Black Gorge of the Gunnison or ~~the~~ Granite Gorge <sup>conveys</sup>. The width of the river and gentleness of its flow <sup>have fostered the presence of</sup> are consistent with frequent bars and sand banks and <sup>abundant</sup> varied bottom vegetation. <sup>But</sup> Rising hundreds of feet, <sup>as in places right out of the water,</sup> not thousands, ~~the~~ special quality of Glen Canyon resides in ~~its walls~~ the character of its walls.

~~Much of~~ the sediments through which Glen Canyon has been carved are sandstones of the Jurassic and ~~Triassic~~ period. <sup>lead to</sup> At the upper ~~end of it is~~ the Wingate formation which shatters into broad columnar masses and blocks of a dark, burnt red color. As the cliffs crack off and fall onto the narrow, steep talus at the water's edge along this part of the river, the fragments break up into huge rectangular blocks that lie strewn down the slope, there to weather ultimately into sand while their faces and the face of the cliff above turn <sup>purple blocks</sup> black with oxide. <sup>becomes unyielding & solid</sup> Where the fiery walls of the canyon narrow the passage of the <sup>then the mouth of the San Juan or in upper part</sup> river is like an entrance into hell. The black coating on the cliffs, <sup>a dazzling</sup> reflecting ~~the sun~~ shines white in the sun, but in the shade, reflecting the sky, turns to a deep ultramarine blue. <sup>dark, usual</sup> <sup>attracted angle of light</sup> ~~it appears dull black.~~ ✓



Further down the river the Wingate formation dips below the surface, ~~and~~ its place is taken by Navajo sandstone, and the character of the cliffs change strikingly. Here where much of the upper surface has been weathered into rounded domes and waves of rock the edges of the walls are less sharp, ~~and~~ water running down over them in many places

after a rain has streaked their surfaces with dark bands and ribbons of discoloration, <sup>hanging</sup> like wet curtains <sup>clinging</sup> to the face of the cliff.

The color changes are caused by <sup>black stripes are a</sup> algal growths <sup>as well as chemical</sup> alterations. More commonly than the Wingate, the Navajo sandstone

fractures ~~in~~ along curved lines of cleavage <sup>into</sup> and concoidal shapes producing immense arches and bays in the walls and all manner of

rippled and drapery-like, surface configurations. Imposed on these shapes, giving

~~and often adding~~ emphasis and contrast, ~~licks and processes~~ of oxidation take place adding to the yellow and orange stone/blue and purple sheen;

and lichens following the same pattern <sup>give</sup> produce a textured tapestry

of abstract design. Slabs continually scaling off the cliffs, ~~in one place~~ have <sup>been</sup> led to the formation, where water seeps through

cracks in the rock bedding <sup>from</sup> or where springs have developed, ~~of green caves~~

green with tangles of rank vegetation, which <sup>together with the name Glen Canyon</sup> originated. High on the face of the walls in many places huge eye-shaped,

lenticular depressions - the beginnings of caves <sup>have been formed</sup> are seen,

in which water oozing out along the fracture <sup>lines</sup> curves has provided enough

moisture <sup>for the</sup> to support a growth of maiden hair ferns and mimulus. ~~the~~ <sup>these</sup> ~~lashes of the eyes~~ <sup>of the cliff</sup> ~~are~~ <sup>at over the</sup>

The side canyons of Glen Canyon are places of special interest

and beauty. They are its notable features. Nowhere else in the world

~~are~~ such fantastic phenomena of erosion to be found. They are a unique

natural museum of the particular kind of phenomenal geology that has led

to their formation. The shapes and sculpturing <sup>found in them</sup> do not

thoroughly within the power  
with  
see below for the power

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alone arouse the wonder and awe they stimulate; The realization of the geologically speaking, <sup>shaped them out</sup> speed, with which they must have been ~~carved~~ adds to the wonder. But most of all it is the immaterial phenomena of light within <sup>even to the</sup> ~~the~~ gloomy recesses of the narrowest, <sup>the canyon</sup> ~~of the narrowest~~ <sup>business</sup> ~~consider~~ them that ~~provoke~~ adds a touch of ~~the~~ ultimate awe. The majority of the most spectacular ~~side~~ tributary canyons are quite short; many of ~~them~~ no more than a mile in length and some ~~of~~ them not even that long. From the similarity of <sup>the good flow</sup> ~~the shapes they have assumed~~ it appears that the ~~same~~ forces were at work shaping them all. Their courses are all in the form of S curves walls of that twist back into the sandstone ~~from~~ the Colorado River for many turns. Some straighten out as they are followed back into the plateau but others <sup>like</sup> continue their sinuous way back for miles as ~~does~~ Twilight Canyon, which my youngest son followed for fifty seven turns without coming to an end or detecting an appreciable lessening of the <sup>it</sup> height of ~~the~~ walls. The shortest ones snake back only two or three turns before ending abruptly in an amphitheater and plunge pool, above which a slot in the cliff carries the flood waters from the plain above in times of rain. (From the point of view of the flow of water ~~the~~ side canyons should be considered as progressing in the other direction towards the parent canyon, ~~because~~ <sup>being</sup> this ~~is~~ the way their excavation can be understood, but because they are invariably entered from the river they are usually described <sup>from that</sup> ~~the other~~ way ~~around~~.) It would be impossible to describe all the variations encountered in the shapes and sizes of <sup>these</sup> ~~the~~ <sup>tributaries</sup> ~~side~~ canyons that extend back into the plateau <sup>on</sup> ~~from~~ <sup>at the mouth</sup> ~~Glenn Canyon~~ both sides of ~~Glenn Canyon~~ like the legs of a centipede. They are all carved <sup>at it</sup> into the sandstone by <sup>both</sup> ~~the~~ <sup>flow</sup> ~~intermittant flow~~ ~~of~~ water from (infrequent) rains that flood down off the rocky plain. The flow when it occurs is usually violent carrying with it much sediment and abrasive material which cuts rapidly though the ~~relatively~~ soft sandstone. The narrowness of some of the canyons



is domestic evidence <sup>11</sup> for

testifies to the rapidity of ~~the erosion~~ whose sides <sup>are</sup> ~~of~~ one hundred or  
and

more feet in height ~~may be~~ less than three feet apart at the bottom

A few <sup>evidently</sup> can be seen to have started as a tight meanders in the surface rock,  
fast and deep cutting by  
but ~~adding deeply and floods heavy with sand rubbing fast and deeply~~  
<sup>days</sup> ~~bottom of the~~  
have enlarged the channel ~~at the bottom of the cut~~ until it has been  
excavated

~~expanded~~ into a wide passage beneath developing a chamber with over-  
hanging sides that actually interlock at the top. To be caught in one

of these narrow canyons in a flash flood would be ~~dangerous~~ <sup>fatal</sup> but since  
times of  
they occur seldom and only during ~~storms~~ nearby storms the hazard is not

great. Others ~~are~~ wider, hold slowly evaporating pools ~~of water~~ on their

~~smooth~~ <sup>from</sup> ~~bottoms~~, rounded, rocky <sup>from</sup> bottoms; pools that never become dry because

they are fed by seeping water <sup>from</sup> ~~between the sandstone strata~~ and replenished

by the ~~vicious~~ <sup>power</sup> wild, storm-born floods that <sup>but</sup> scour out the canyons.  
~~glitter with~~

In calmer weather the pools ~~reflect a golden light from the orange,~~

sunlit cliffs

In calmer weather, in somber, rocky chambers of ochre and purple stone

into which the sun rarely strikes, shallow pools glitter with a golden

glow from ~~the~~ ~~at~~ orange cliffs towering high above in the ~~sunlit~~ <sup>frail</sup> air.

Ad In wet ~~cracks~~ and weeping ~~cliffs~~ <sup>frail</sup> maiden hair fern; lobelia, and ~~delicate~~

white columbine have taken root everywhere, their drooping, trembling <sup>like a</sup>  
and the ~~golden~~ lobelia flowers assuming an ex blo  
fronds turning in the blue shadows to a dusky cyan-green <sup>hue</sup> which imparts

a gloomy, almost funereal, aspect to the scene. Some of the canyons <sup>deep</sup>

are dry and dead, supporting no vegetation on their ~~story~~ <sup>double layered bottom</sup> floors, and from

whose barren walls no water trickles ~~from intercepted underground~~

channels <sup>ad</sup> ~~any~~ ferns or flowers spring. But they are not the usual ~~type~~

type; most <sup>such as</sup> are green with flourishing plants <sup>like</sup> those that carry a

permanent stream, and even in <sup>many of</sup> those in which the flow dries up between

rains the sand banks at the bends support dense growths of grasses and

canes, creeping woodbine and poison ivy, oaks in the sunnier spots, and

shade-loving redbud in the darker corners.



style changed to

like The porous, friable sandstone walling in the Colorado River  
~~is a piece of rotten~~ worm-eaten wood riddled with the tunnels of  
~~the~~ long gone larvae. The smooth bores of their unroofed, tentative, wriggling  
 passages, as seen through the eyes of an imaginary giant with a magnifying  
~~and~~ glass, converging into a common ~~passage~~ channel through which they effected  
 their escape. But the worms ~~are not the~~ short lived creatures of the x  
 analogy ~~while like~~ <sup>whereas in the analogy</sup> in reality they live a many times reborn existence  
 whipping down fiercely in the beds of their predecessors, enlarging them  
 a little and fading away. ~~On shrinking~~ <sup>On shrinking</sup> ~~to descend from the heights of the supernatural~~  
~~being to human proportions, a mere speck in~~ <sup>size</sup> ~~comparison, the channels~~  
~~grow from worm holes to~~ <sup>peak</sup> From a more human point of view the worm holes  
 become huge caverns winding back into the earth ~~where~~ <sup>and the</sup> unimaginable  
 monsters ~~hide~~ <sup>lurking therein</sup> are the flash floods that come roaring down, writhing  
 against the rocks, ~~and~~ tearing away all loose material, and gouging out  
 deep caves at the sharpest bends. But for all the fierce destructiveness  
 of these waters against ~~which~~ <sup>lifeless</sup> ~~whose~~ <sup>lifeless</sup> persistent pounding no structure  
 can stand for long, they are helpless against the frailest living things  
 that like the sea algae of a surf-bound coast bend to their will and spring  
 back again, <sup>And</sup> after the torrent has passed. Those that are uprooted are  
 quickly replaced by others so prolific is their spread. Where the canyons  
 turn most sharply and the waters are thrown back upon themselves around  
 a hairpin <sup>at</sup> turn immense caves are scooped out, the over-hanging walls of  
 which envelop an opposite peninsula of rock rounded into a knob that lies  
 immobile in a gigantic, frozen socket. If you stand in the stream bed  
 back away in one of these caves, facing outward, and look up at the top  
 of the dome-shaped inner wall you see the sky, a <sup>one</sup> <sup>at</sup> <sup>s</sup> crescent of blue folded  
 over the striated dome of rock, bounded above to the limits of your <sup>his</sup>  
 periferal vision by the overhanging black surface of the cave which rises  
 behind you. The power and size of these elementary shapes expanding  
 enormously over your head out of the narrow confines of the canyon floor  
 forces upon you a sensation  
 of dream-like unreality and disbelief.



<sup>push through</sup> In the narrowest slits in which it is still possible to  
<sup>at the entrance</sup> make your way no hint is given, no betrayal can be detected of the  
<sup>flowing</sup> secret within. The murky river ~~cutting~~ <sup>flows</sup> back into the cliff, ~~straight~~ <sup>as a</sup>  
<sup>and cleft</sup> sided, a hundred yards, perhaps, around a corner ~~and~~ blends into a  
 bank of gray ooze from wall to wall. The water ~~thickens to a~~  
<sup>here</sup> finest sediments thickens into a jelly-like mud which without detectable  
~~degree of~~ transition becomes a slippery bed of clay of unknown depth.  
<sup>stands</sup> But if the river level ~~should drop~~ a few feet <sup>lower</sup> ~~were~~ the mud bank will  
<sup>to</sup> extend to the mouth of the cleft at the river's edge, becoming, <sup>in time</sup> as the  
<sup>dried</sup> river does not soon rise, encrusted with broken blocks of clay. But the  
<sup>mudding up</sup> first freshet down the side canyon will wash it all out and the process  
<sup>at</sup> will begin <sup>over</sup> again <sup>with</sup> at the next high water. The curious and adventurous  
 who enter ~~this~~ <sup>such a</sup> canyon will not be deterred by the formidable ooze  
 but will plunge in perhaps waist deep or even to swim at first and struggle  
<sup>one</sup> through the sucking ~~of~~ laborious ~~to~~ step at a time until having gained  
~~around a bend or two~~ higher, harder ground, can make their way unimpeded  
 into the unknown reaches of the canyon. <sup>then</sup> who presses on through chamber  
 after chamber may find himself at last confronted by the perpendicular  
 walls of a circular arena down the side of which, <sup>out of</sup> from a slot at a higher  
 level, a thin stream slides into a black, fathomless pool, <sup>with</sup> All around and  
<sup>surroundings</sup> about in the chill, tenebrous <sup>atmosphere</sup> the dark forms of mosses and  
<sup>work for wet</sup> ferns cling to the slippery cliffs. <sup>then</sup> One may ~~suddenly~~ come to a sudden  
<sup>tailor</sup> narrowing of the canyon where the floor disappears into a water-filled  
 cleft no wider than <sup>a man</sup> ~~his~~ body. To swim through this is indeed a new  
 kind of an adventure. It is the beginning of a dream, to slide "through  
~~caverns measurless to man down to a sunless sea~~ in the ordinary sense  
 but it is easy to propel yourself by pushing against the rock sides and  
 kicking with your feet, to slide as it were "through cavern measurless to man  
 down to a sunless sea."



the beginning 14

It is a dream to glide along, chin deep in water, seal-like, in the gloom  
and soundless <sup>primordial</sup> depth of a labyrinth of stone; to touch, <sup>shivering with</sup> surprised ~~by~~ the  
invisible  
mysterious/bottom rising up to meet you- a stone or a graveled ledge ~~as~~;  
to climb over wedged boulders from one ribbon pool to another; <sup>in a fee</sup> to slide ~~to slide~~ <sup>forward</sup>  
"through caverns measurless to man, down to a sunless sea." ~~Then a~~  
sudden shaft of sun, ~~penetrates the~~ adding a dimension of reality,  
penetrates the upper reaches high above through an unseen window ~~toward~~  
the sky. It lights a strip of wall a dazzling ~~gold~~ yellow and is  
reflected to ~~your~~ <sup>the</sup> eye at water level from the thin curved lip of the pool  
lapping the rock in gentle undulations; the thread-like golden meniscus  
reaching <sup>es</sup> ~~ahead~~ <sup>delineating</sup> ~~and separating~~ for a moment the wavering separation  
of water from stone. The end a wisp of a waterfall slipping over  
into a dusky and forboding pool  
a smoothed and algaed shoot/ ~~from~~ <sup>into</sup> infathomable reaches above. One short  
canyon, little Arch, <sup>and</sup> ended in such a fall up which <sup>one</sup> ~~an~~ explorer has  
cut shallow foot holds in the wet sandstone. By following these one is  
led through a <sup>twisted</sup> narrow <sup>way</sup> ~~passage~~ <sup>roofed-in</sup> into a chamber in the red rock,  
heaped  
Dry on one side where a sand bank has been ~~piled~~ up, the other side  
extends a few feet into ~~an alcove~~ an alcove giving egress to the free air  
of the plateau ~~very~~ high over head through a chimney leading straight up <sup>to the sky</sup>  
The sides of the chimney <sup>have</sup> ~~had~~ been ground into <sup>hollow</sup> curved plates lying one  
and elongated  
above another like immense loose/scales. ~~The~~ <sup>a</sup> light suffusing down this  
textured <sup>tube</sup> passage spready through the chamber/ satanic glow that turned ~~the~~  
our faces and half naked bodies ~~into~~ to dull fire-blasted copper. Our  
imaginations ~~simultaneously~~ turning to the violent events that must  
periodically take place in this ~~place~~ <sup>water</sup> cavern, pictured the enveloping  
spray and ~~the~~ heard the ~~thundering~~ roar of ~~rain~~ <sup>pouring down the vent</sup> ~~pouring down the vent~~  
from a cloud burst  
Collected ~~by~~ many little channels ~~in~~ the rocky surfaces/ <sup>above</sup> ~~pouring~~ <sup>it pour</sup>  
down the vent in a tumultuous, thundering rush. ~~It was~~ <sup>Our feeling was</sup> exactly like  
being in the trap at the bottom of an enormous drain.



More than its cliffs the quality of the light in Glen Canyon, <sup>trial</sup> the way it fills ~~the~~ space between them, and is reflected, ~~back~~ and ~~forth~~ rereflected, gives it its magical and fairyland essence.

Its first explorers, Powell, Dellenbaugh and ~~Dutton~~, well appreciated its beauty, and remarked on it often enough ~~in~~ in their accounts and ~~reports~~ to have established its reputation as a wonderland of the Colorado, a peaceful, uniquely beautiful stretch of the river where they felt relaxed and secure after the hardships and excitement of the cataracts ~~above~~ up stream. Later visitors, who left ~~their~~ ephemeral marks in the canyon, perhaps did not see its finer aspects for they were lured there by greed. They came ~~with~~ in barges with tools and dredges and machinery to extract the riches in gold from the river's sands and gravel benches, but they were frustrated by the river's obdurate implacability and retired with empty hands, even losing the wealth and materials they had so hopefully invested and dragged into the canyon bottom. They left their marks, <sup>mayhap</sup> however, in a more permanent form <sup>than</sup> ~~in~~ the scatching they made or ~~in~~ <sup>they</sup> the rusting machinery they left behind them. They gave names / still bear to ~~remind~~ the places they came to know, just as the Mormons and the Indians did, where they strived, and lost their hearts and died. Their memory <sup>could</sup> will remain in Smith ~~Bar~~ and California Bar, Klondike and Dead Man Bar long after the crazily tilted, rusted dredge - still <sup>to</sup> seen in mid river - is swallow up by the shifting sands. <sup>But</sup> Now, another kind of invasion is taking place; one that will obliterate ~~all the~~ <sup>(the memory of all the past history of the river)</sup> all the places that bear these homely and provocative names, ~~will~~ wipe them out for all foreseeable time, and thus with nothing tangible by which to recall the past ~~destroy~~ even the memory of the history will be destroyed. of the river. This last and final act of obliteration is similarly motivated

61. In the gold seekers fifty years ago. The wealth of the Colorado ~~is~~ this time, its power, ostensibly at least, although there are those who see a for its very survival more malign drive - the need <sup>to</sup> maintain ~~the~~ power and influence of a

300  
14  
3260  
3400  
2446







All places where plants grow have their compliment of  
 animal life and Glen Canyon is no exception. And ~~also~~, as is true of  
 so many environments, its birds are its most conspicuous animals. It  
 is the very nature of birds to live conspicuous lives - they fly -  
 and the majority are not nocturnal in habits, as are most of the rodents,  
 nor furtive during the day, except near their nests, like the mammalian  
 predators - the foxes and weasels and coyotes. They advertise their presence  
 too by song even when they seem to be skulking in thickets. In the spring  
 the willow and tamarisk jungles topping the riverside sand <sup>ring</sup> ~~bars~~  
 with the ~~bright~~ cheerful sibilance of yellow warblers, while <sup>from</sup> ~~among~~  
 the broken rocks of ~~the~~ dry talus ~~nowhere~~ comes the bright chant of  
 or echoing canyon wren's  
 the rock wren, ~~and~~ from higher on the cliff-side the clear, descending  
 cadence ~~of the canyon wren's~~ <sup>comic</sup>. Some most unmelodious/sounds issue from  
 the riverside thickets as frequently as the sweeter songs of other birds.  
 They are the <sup>harsh</sup> cluckings, cawings and whistlings of yellow-breasted chats  
 that lurk mostly unseen in the denser underbrush, but occasionally  
 exhibit themselves <sup>by bursting</sup> ~~now and then~~ <sup>awkward,</sup> from the top of a bush in ~~agitated~~  
 wing-clapping, mutual flight.  
 Great blue herons  
 Large, long-legged birds leave evidence of their habitation ~~of~~  
 the ~~canyon~~ in the muddy edge of the river. Along with the numerous beaver,  
 whose characteristic webbed tracks, a dragging tail between, and the  
 (are found all up and down the canyon) large  
 parallel marks of willow branches pulled down to the water, their four-  
 toed foot prints - three in front and one behind - ~~mark~~ the soft mud banks  
 bordering lagoons and shallow backwash. <sup>at every step</sup> (these long-legged birds <sup>mark</sup> ~~leave~~)  
 They stand motionless watching for small fish or frogs which they seize  
 with in their <sup>a</sup> ~~long~~ bills with quick ~~spring~~unkinking of their long necks.  
~~and~~ When approached too closely they rise smoothly, with (dangling legs),  
 powerful wings beating slowly  
 and slowly beating wings, and flap in unhurried flight down the river.  
 along the narrow watercourses of rock-cut  
 In the side canyons, through which water flows in deep pools -  
 pools, where the flow is clear and constant, lives a small, plump, gray



He is frequently seen in Bridge Canyon narrows on the way to Rainbow Bridge.

bird, who sports a ridiculous stumpy tail, <sup>the</sup> only representative of his family on the ~~west~~ <sup>continent</sup>, is a truly aquatic creature, as truly as the pelagic petrels that roam the oceans. He is not web-footed; but but unlike ~~that~~ phlegmatic fowl his demeanor is one of sparkling <sup>life</sup> he is as much at home in water as a duck - perhaps more so. He makes his living in the flowing streams and cascades of the high country and canyons of the west; in fact he cannot live without them, and he never departs far from them. He is the dipper or water ouzel and when first encountered will in all probability be bobbing on a stone in mid-stream. The uninitiated <sup>may</sup> to his surprise see him suddenly plunge into the water. It is as strange at first sight as <sup>it would be</sup> to see a robin go for a swim, for this bird is a land bird who has <sup>only recently</sup> learned ~~to do so~~ the merits of a subaquious existance and <sup>how</sup> to conduct himself under the surface. He goes about it in a most professional manner as though it were the most usual sort of thing <sup>Over</sup> ~~to do~~ for a bird to do. ~~From~~ <sup>rather</sup> somber dark gray ~~jacket~~ <sup>suit</sup> he instantly ~~slips into~~ on a resplendent jacket of shiny, silver bubbles and in this outfit walks about on the bottom picking up acquaric larvae here and there with <sup>a little</sup> ~~no more~~ concern as though he were on dry land. In a moment out he pops again, leaving his bright jacket behind, <sup>and,</sup> as dry as before he plunged in, continues about his business without even so much as taking a deep breath. He is apparently exhilarated by his mode of life showing his satisfaction by bursting into song most unexpectedly after emerging from one of his foraging expeditions. He loves water so much <sup>as water</sup> ~~that~~ <sup>roofed</sup> that he builds his nest and rears his young in the ~~gray~~ of waterfalls, He sings ~~singing~~ his ebullient, varied song throughout the year for no other reason that can be assigned than the sheer joy of doing so, ~~and his own spirit is the only~~ <sup>and</sup> ~~his own spirit is the only~~ <sup>aidance</sup> ~~aidance~~ And his own spirit is the only aidance he needs when he sings unheard in the mist ~~and his own spirit is the only~~ <sup>of</sup> a thundering cascade.

To the murmuring and chattering voices of the river is added now and then the harsh caw of the raven from a high ledge or from a point of suspension in an invisible stream of air rising <sup>slowly</sup> along the face of



the canyon wall, where he has found a balance between the law of gravity and the laws of convection. There he hangs, rocking slightly as he drifts and soars, his black profile a punctuation mark to his words and the ~~words of~~ <sup>story</sup> unarticulated words of all the past history of the ~~petrified~~ world in which he lives. The raven is a bird of parts; but ~~he~~ <sup>there is</sup> no show-off nor does he hide his talents under a bushel. He uses them for his own particular needs ~~and~~ <sup>his voice</sup> when the spirit moves him without ostentation. He saves ~~for~~ <sup>for</sup> ~~his~~ <sup>instance,</sup> a particular quality of his voice, for instance, for special occasions which he does not reveal, and though he cannot sing, he is able to introduce a bell-like quality into his croak which adds a musical touch without melody. Like the ouzel, the raven ~~enjoys life~~ does not just live but appears to enjoy the process, especially when it involves exercise of his greatest accomplishments: flight. One is on very unsafe ground ~~to make~~ when he makes anthropomorphic interpretations of animal behavior; nevertheless there are occasions when no other interpretation fits the behavior, as, for example, ravens spotting in an updraft over a ridge. A small group may spend hours doing nothing more than playing in the air currents: soaring effortlessly, chasing one another in an endless game of tag which involves all the tricks of aerial acrobatics at their command & diving, rising, turning on their backs in <sup>a</sup> wild, exuberant ~~maneuver~~ <sup>mayla y</sup>. As the chase becomes close, wing to wing, excitement seem to develop to <sup>a</sup> high pitch, to the point ~~when~~ <sup>at which</sup> a pursued bird racing by the face of the cliff, utters feeling for the current that would give him the first advantage ~~which~~ <sup>utters</sup> a ~~very~~ guttural cry that expresses all his pentup emotion as children cry out involuntarily at play. Is this not an expression of joy?