

Collier's
Encyclopedia

23

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Collier's Encyclopedia

with Bibliography and Index

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The following three tools are indispensable to the user of Collier's Encyclopedia if he is to take full advantage of its resources. They may be found by consulting the Table of Contents on Page iii of Volume 24.

HOW TO USE THE BIBLIOGRAPHY HOW TO USE THE INDEX NOTE ON THE PRONUNCIATION SYSTEM

The Pronunciation System

The system employed to indicate pronunciation in this encyclopedia is based on the alphabet of the International Phonetic Association. This alphabet has two notable advantages over other pronunciation systems: it is widely known beyond the bounds of any one nation, and it is readily applicable to all the languages of the world.

In the application of the system in the encyclopedia, the phonetic symbols are printed in square brackets following the article heading, and stresses are indicated by accents placed immediately after stressed vowels, a heavy or a light accent indicating respectively a primary or a secondary stress.

ɑ	arm, father, shot	i	eve, heat, baby	s	saw, also, pass
ā	(Fr.) elan, emploi ¹	ɪ	if, sting	ʃ	she, ration, hash
a	(Fr.) attacher, bal	k	cane, broken, lake	tʃ	chin, hatchet, reach
æ	at, back, can	χ	(Ger.) ich, ach ³	t	two, matter, hat
æ̃	(Fr.) ainsi, vin ¹	l	lot, allow, real	θ	three, ether, bath
ai	ice, spine, cry	m	me, farmer, him	θ̃	this, other, bathe
au	ounce, loud, cow	n	no, funny, in	u	rule, loop, shoe
b	bat, rabbit, tab	ŋ	rang, singing	ü	(Fr.) cru; (Ger.) grün ⁶
d	do, ladder, had	o	old, note, go	ʊ	bull, book
e	elite, fate, pray	ö	(Fr.) eux; (Ger.) schön ⁴	ʌ	up, but, son
ɛ	end, yet	ɔ	orb, ball, saw	v	vine, avid, live
ə	ago, maker, charity ²	ō	(Fr.) bon, rompre ¹	w	we, awake
ɜ	earth, first, burn	œ	(Fr.) leur; (Ger.) können ⁴	y	yes, cure
f	for, effort, life	œ̃	(Fr.) brun, lundi ¹	ʏ	(Fr.) montagne ⁶
g	go, figure, bag	ɔi	oil, point, toy	z	zoo, dazzle, raise
h	hot, behave	p	pat, upper, mop	ʒ	pleasure, rouge
		r	red, worry, hear	dʒ	joke, fudge

¹ The tilde (~) indicates that the vowel above which it appears is nasalized.

² The schwa (ə) is used to indicate a vowel sound common in unstressed syllables in English. It is closely akin to ʌ, the vowel sound in but.

³ The single symbol χ has been used to represent both the consonant sounds found in the German words *ich* and *ach*. Since, as a rule, the vowel that precedes this sound makes it either palatal or velar, it is unnecessary to indicate the distinction by phonetic symbols.

⁴ The symbol ö may be approximated by pronouncing the vowel sound in *urn* or *fir* but with the *r* silent, as in Southern speech. The symbol œ represents the same sound, but shortened.

⁵ The ü sound may be approximated by rounding the lips as if to pronounce u while saying i.

⁶ The symbol ʏ, which occurs with some frequency in French and Russian names, represents a consonantal *y*, approximated by pronouncing all but the last two sounds of the word *canyon*.

USA TO ZWINGLI

USA [usʌ], a town in Oita prefecture, northeast Kyushu Island, Japan, near the coast, about 54 miles southeast of Moji, on the Moji-Beppu railroad. An ancient shrine nearby, at Usa-Jingu, was founded in A.D. 725. Usa became known between the two world wars because of the use of its name on articles designed for export, which were marked "Made in USA" in order to circumvent the boycott in the United States of articles manufactured in Japan. Pop. 1970, 26,000

CALEB W. DAVIS AND REIKICHI KOJIMA

ÜSKÜDAR [u'skudə'r], or Scutari [sku'təri], a city in Turkey, across the Bosphorus from Istanbul, of which it is one of the larger divisions. Üsküdar is on the site of the ancient Byzantine city of Chrysopolis, which was the port of Chalcedon. The city was a base of British operations during the Crimean War, and it was in the nearby Selimiye barracks, transformed into a hospital, that Florence Nightingale tended the British troops during the war. The city has a cool Mediterranean climate with an average annual temperature of 57° F.; the average annual precipitation is 29 inches. Üsküdar has always been overshadowed by Istanbul, with which it is connected by a trans-Bosphorus ferry line. Within the municipal limits of the larger city, it is, nevertheless, an important commercial and transportation center. Pop. (est. 1970), 144,000

JOHNSON E. FAIRCHILD

USSURI [ussu'ri], a large river in the Far Eastern section of the Soviet Union. Rising in the Sikhote Alin mountains in the southern end of the Maritime (Primorsky) Krai (Territory) north of Vladivostok, it flows north and forms the boundary between the Maritime Territory and eastern Manchuria. In its lower course it separates and forms a delta, of which the eastern distributary flows into the Amur River near Khabarovsk. Its principal tributaries on the western or left bank include the Sungacha, which is the outlet for Lake Khanka, and the Muleng. The main tributaries from the east include the Bikin, with a length of about 300 miles as its largest affluent, the Iman, and the Khor. The Ussuri flows in a broad lowland plain for a distance of over 500 miles from its source to the Amur. It is important for river traffic from Lake Khanka to Khabarovsk.

ALLAN L. RODGERS

USSURIYSK [usu'risk], an industrial town and rail center in the Maritime (Primorsky) Krai (territory) of the Russian Soviet Federated Socialist Republic, in the far eastern Soviet Union. It was known as Nikolsk Ussuriysk until 1935 and as Voroshilov until 1957. Ussuriysk is located about 48 miles north of Vladivostok, on the Suifun River, in a valley with mountains to the east and west. Although founded in the late 19th century, the town had its major growth after World War I, especially under the Soviet five year plans. It is an important junction for the Chinese Eastern Railway and the regular Trans-Siberian line from Khabarovsk. A highway from Vladivostok to Khabarovsk runs through Ussuriysk. There are coal mines nearby. The in-

dustries of Ussuriysk include soybean oil production, railroad maintenance work, sugar refining, woodworking, meat canning, and the manufacture of machine tools and spare parts for locomotives, railroad cars, and trucks. The town has a number of specialized institutes and schools as well as two theaters. Pop. 1970, 128,000

USUMBURA [usumbu'ra], now Bujumbura, the capital of Burundi, situated near the northeastern shore of Lake Tanganyika, about 350 miles southwest of Kampala, Uganda. The main part of the city is connected by road with its port on the lakeshore.

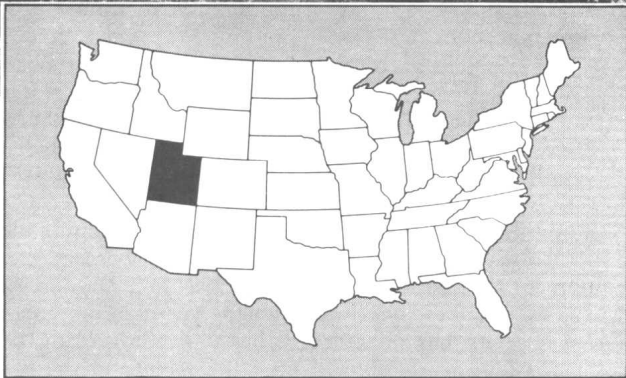
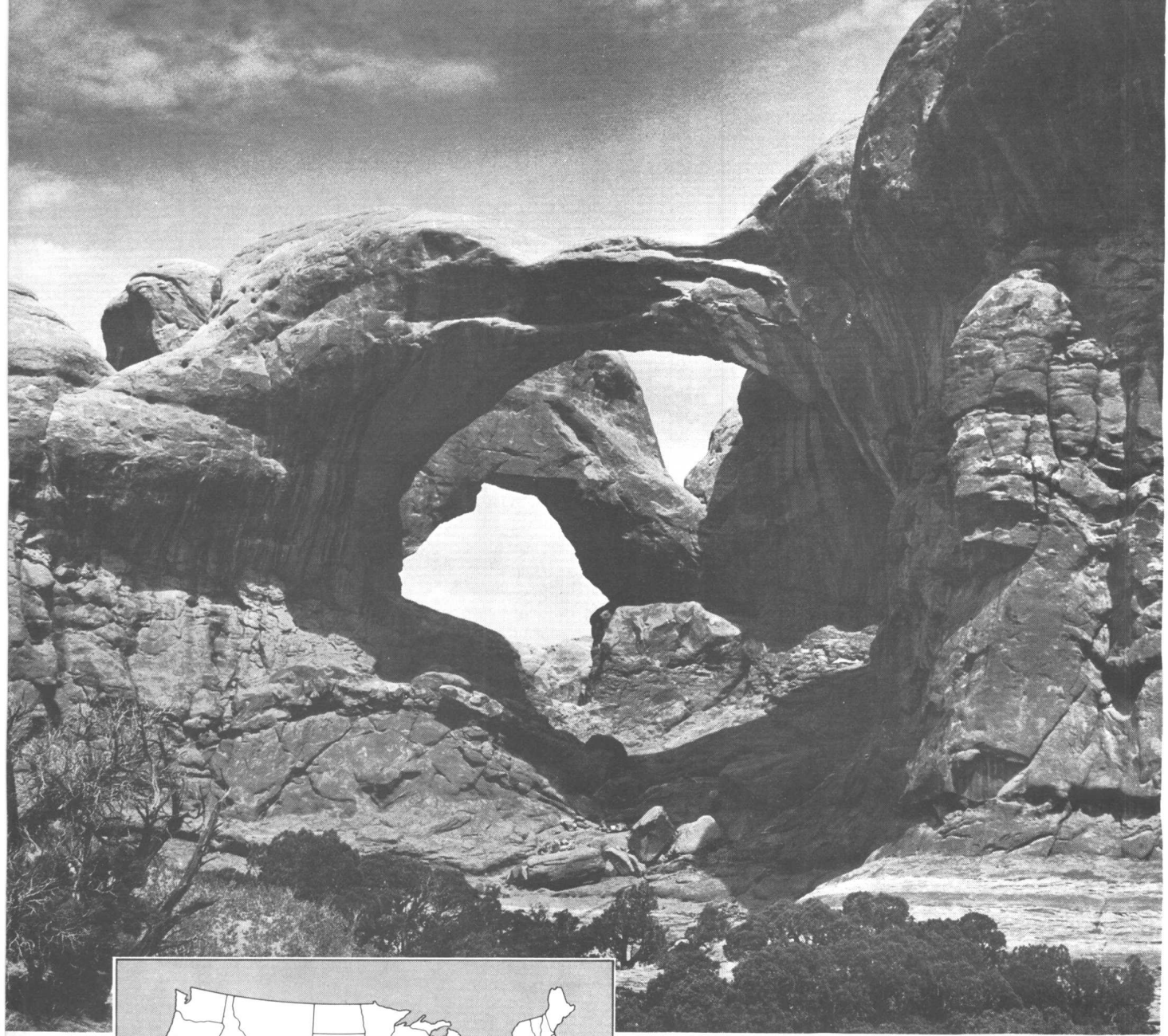
European explorers penetrated the area around Bujumbura in the latter half of the 19th century. The White Fathers, a Catholic missionary order, attempted in 1892 to establish a mission at Bujumbura, then a small village, but moved to Buhonga, 39 miles distant, because of the shortage of drinking water at Bujumbura. A German military post was established at Bujumbura in 1897 to guard the German East Africa frontier on the eastern shore of Lake Tanganyika. It was captured by Belgian forces in 1916. After World War I, Bujumbura became the administrative center of the Ruanda Urundi mandate, administered by Belgium under the League of Nations. It remained the seat of the trusteeship government established under United Nations authority in 1946. When the trusteeship terminated on July 1, 1962, the *mwami* (king) of Burundi shifted the seat of government from Kitega to Bujumbura. The name of the city was officially changed from Usumbura to Bujumbura at the time Burundi became independent.

About 44 percent of the city's people are Catholics, 6 percent Protestants, 36 percent Muslims, and the rest animists. The establishment of the Diocese of Usumbura in 1959 gave the city its own Catholic bishop. About half the city's inhabitants are illiterate, but improved educational facilities are reducing the proportion.

Bujumbura has a lively export trade in coffee, cotton, hides, and tin ores, and is a port of entry for machinery, heavy equipment, and building materials. It has three large markets where livestock and produce from the surrounding area are sold. The city has no railroad, but it is the starting point for roads leading to Bukavu on Lake Kivu and the Shaba (Katanga) region (both in the Republic of Zaire) and to Kampala, Uganda. Bujumbura has a modern airport, and regular air service is provided by the Belgian airline Sabena to Entebbe (Uganda), Nairobi (Kenya), Dar es Salaam (Tanzania), and all of the major cities of Zaire. The port of Bujumbura is one of the busiest centers of water traffic on Lake Tanganyika.

Lying at an elevation of 2,624 feet, Bujumbura has a cool climate. Because of this and its well-developed hotel and restaurant facilities, the city has become a tourist center. Nearby scenic attractions include the spectacular falls of the Ruzizi River, near Bukavu. Pop. (est. 1970), 80,000.

ERNA A. STEINER



Utah

Location: southwestern United States; one of the Mountain states.
Boundaries: north, Idaho and Wyoming; east, Wyoming and Colorado; south, Arizona; west, Nevada.

Latitude: 37° to 42° north latitude.

Longitude: 109° to 114° west longitude.

Total Area: 84,916 square miles (219,931 sq km), including 2,820 square miles (7,304 sq km) of inland water. **Rank:** 11th.

Population: 1970: 1,059,273; est. 1977: 1,268,000; change 1970-1977: +19.7 percent. **Rank:** 1970: 36th.

Capital: Salt Lake City.

Largest City: Salt Lake City.

Number of Counties: 29.

Representatives: 2.

Electoral Votes: 4.

Statehood: Jan. 4, 1896; 45th state.

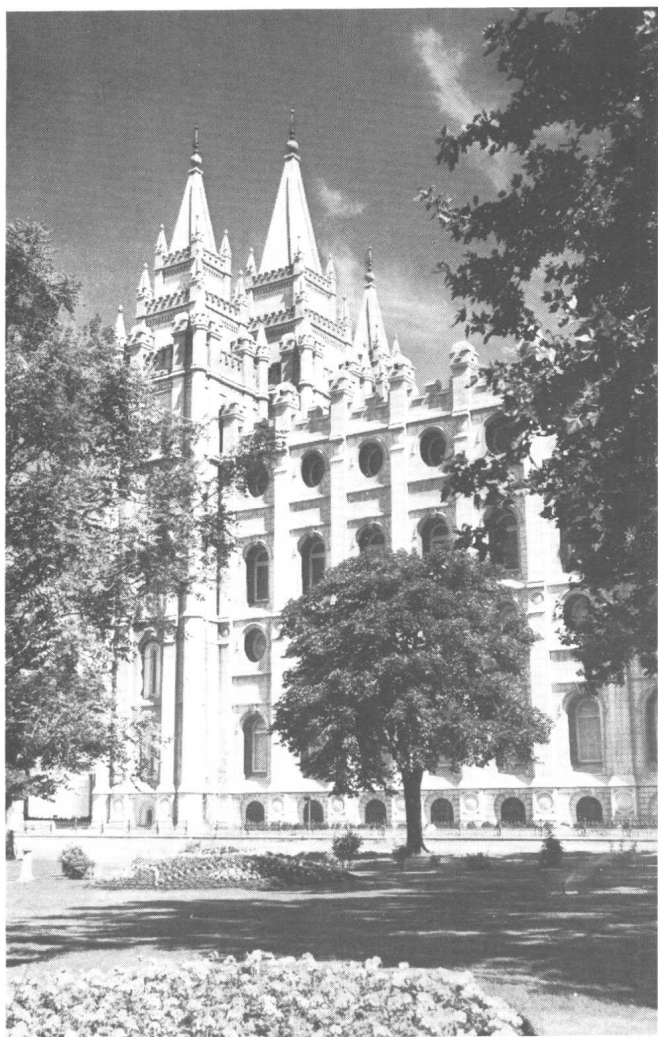
State Bird: sea gull. **State Flower:** sego lily.

State Tree: blue spruce. **State Animal:** Rocky Mountain elk.

State Fish: rainbow trout. **State Gem:** topaz.

State Motto: Industry. **State Nickname:** Beehive State.

State Emblem: Beehive.



ALAN PITCAIRN/GRANT HEILMAN (LEFT); UTAH TRAVEL COUNCIL (ABOVE)

Intricate rock formations, like the double arches (left) in Arches National Park, characterize much of Utah's terrain. The Mormon Temple (above) is in Salt Lake City, headquarters of the Mormon religion.

State Flag: within a gold circle in the center of a blue field is the state seal; the flag is fringed in gold. (For color illustration, see FLAGS.)

State Song: *Utah, We Love Thee*. Written by Evan Stephens.

Extreme length: 345 miles (555 km); **extreme breadth:** 275 miles (443 km); **high point:** Kings Peak, 13,528 feet (4,123 meters); **low point:** about 2,000 feet (610 meters) in extreme southwestern corner of state near Beaverdam Creek; **mean elevation:** about 6,100 feet (1,859 meters); **chief mountains:** Gilbert Peak, 13,422 feet (4,091 meters); Hayden Peak, 12,473 feet (3,802 meters); Kings Peak, 13,528 feet (4,123 meters); Marsh Peak, 12,219 feet (3,724 meters); Mt. Delano, 12,173 feet (3,710 meters); Mt. Emmons, 13,428 feet (4,092 meters); Mt. Lovenia, 13,229 feet (4,032 meters); Mt. Nebo, 11,877 feet (3,620 meters); Mt. Peale, 12,721 feet (3,877 meters); Mt. Timpanogos, 11,750 feet (3,581 meters); South Tent Mountain, 12,300 feet (3,749 meters); Tokewanna Peak, 13,173 feet (4,015 meters); Wilson Peak, 13,095 feet (3,991 meters); **chief lakes:** Bear Lake, Great Salt Lake, Sevier Lake (dry), Utah Lake; **chief reservoirs:** Flaming Gorge, Lake Powell; **chief rivers:** Colorado, Bear, Green, Provo, San Juan, Sevier, Virgin, Weber; **climate:** average temperatures, 28°F. (−2°C.) in January and 77°F. (25°C.) in July at Salt Lake City; record temperatures, high 116°F. (47°C.), low −50°F. (−46°C.); average annual precipitation, 15 inches (380 mm) at Salt Lake City; average annual snowfall, 56 inches (1,420 mm) at Salt Lake City.

UTAH, one of the Mountain states of the United States, is situated in the heart of the American mountain West. Utah is a land of wide expanses and harsh profiles, of deserts, inland salt seas, and broad plateaus, of high mountains and fertile valleys. It is a young state, settled little more than a century ago. The pioneer enterprise is still visible in the state's small villages, with their timber fences, rows of Lombardy poplars, bleached wooden barns, and small cottages surrounded by fruit trees and gardens. These unchanging villages serve as a marked contrast to the fast-growing communities along the northern Wasatch front.

The state takes its name from the Ute Indians, who lived in the area. The name, given to the region by Congress when it created the Territory of Utah in 1850, means "those who dwell high up." The Mormon settlers had asked Congress for statehood under the name "Deseret," a word from the *Book of Mormon* which is interpreted to mean "honey-bee" and which symbolizes industry. Utah has been nicknamed "The Beehive State."

GEOGRAPHIC FEATURES

Topography. Three major physiographic divisions of the United States are present in Utah, namely the Colorado Plateau, Basin and Range Province, and Middle Rocky Mountains. The Colorado Plateau, in the southeast, occupies about two thirds of the state's total area and is mainly represented by three subdivisions, the High Plateaus of Utah, the Uinta Basin, and the Canyon Lands. The Basin and Range Province, in the west, comprises less than one third of Utah. Only one subdivision of this province, the Great Basin, is found in the state. A portion of the Middle Rocky Mountains extends into north-central Utah.

The Colorado Plateau, named for the Colorado River which drains most of it, consists of many plateaus. Their principal characteristics are high elevation, 9,000 to 11,000 feet (2,750-3,350 meters) above sea level, horizontal sedimentary rock structure, deep canyons, brilliantly colored high cliffs, mesas, and buttes, as well as occasional volcanic cones and lava flows. The section of the Colorado Plateau called the High Plateaus of Utah is composed of ten plateaus separated by either faults or erosional valleys. The ten are the Pavant, Tushar, Markagunt, Sevier, Gunnison, Paunsa-gunt, Wasatch, Fish Lake, Awapa, and Aquarius plateaus. In the southern part of the High Plateaus of Utah there are some spectacularly colored cliffs, with pink, white, vermillion, and brown the dominant colors. The Uinta Basin, in northeastern Utah, is characterized by two distinct types of terrain. The northern part, paralleling the Uinta Mountains, contains a number of well-developed local badlands. The southern portion is a high plateau, 8,000 to 9,000 feet (2,400-2,750 meters) in elevation. This plateau's steplike southern edge forms the Roan (or Brown) and Book cliffs, which are 2,000 to 3,000 feet (610-910 meters) high. The Canyon Lands comprise the remainder of the Colorado Plateau in Utah. Their most characteristic features are the many deep canyons of the Colorado River and its tributaries and the mosaic of small plateaus that occupy regions between the canyons.

The Great Basin derives its name from the fact that most of its surface is without an outlet to the sea. The distinctive topographic features of this area are smooth-floored, sediment-covered dry basins, separated by roughly parallel ranges of mountains that rise from 3,000 to 5,000 feet (910-1,520 meters) above the basin floors. The basins are bordered by alluvial fans along their margins, and often contain broad playas (mud flats) or salinas (salt flats). The most notable salt flat is the Bonneville Salt Flats, west of Salt Lake

City. Permanent water bodies include Utah (fresh-water) and Great Salt lakes; Sevier Lake is now usually dry because water from its tributaries is used for irrigation. There is evidence of an ancient and much larger water body, Lake Bonneville.

The Middle Rocky Mountain Province is represented in Utah by the Wasatch and Uinta mountains. The east-west-trending Uinta Range is located in the northeastern corner of the state, where it attains elevations of 13,000 feet (3,950 meters) or more and rises several thousand feet above bordering plateaus. The Green River, the master stream in the region, has cut a spectacular winding canyon, some 3,000 feet (910 meters) deep, through the eastern portion of the Uinta Range. The north-south-trending Wasatch Mountains form a part of the western front of the Middle Rocky Mountains. They lie west of the Uintas, in north-central Utah. The western side of the range has a very steep front, whereas the folded eastern side has a more gentle slope. The crests of the Wasatch, lower than those of the Uintas, attain from 10,000 to almost 12,000 feet (3,050-3,700 meters). Most of the range is characterized by V-shaped canyons, which contrast with the angular outline, U-shaped valleys, and pyramidal peaks typical of the Uintas; the contrast is due to the fact that the Uintas were more glaciated than the Wasatch. The section of the Wasatch east of Salt Lake City and Provo was glaciated and has typical glacier-produced, U-shaped valleys and sharp peaks.

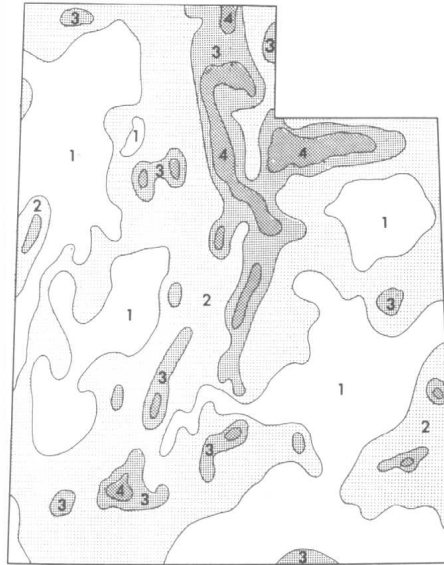
Climate. Climatic conditions vary considerably in Utah, largely because of differences in latitude and elevation. Temperatures are lower in the plateaus and mountains than in lower sections. January temperatures in the mountains in the northeast average less than 20°F. (−7°C.) and, in places, below 15°F. (−9°C.). However, in some of the lower, southern sections of the state January average temperatures exceed 30°F. (−1°C.) and, in a few places, 35°F. (2°C.). Summer temperature differences are about the same as those of winter, the higher elevations having July averages ranging from 55°F. to 60°F. (13°-16°C.), and the warmest section in the south having a July average exceeding 80°F. (27°C.). For most of the state, January temperatures average between 20°F. and 30°F. (−7°-1°C.), and July temperatures from 65°F. to 75°F. (18°-24°C.). Maximum temperatures for the state normally vary from 90°F. to 100°F. (32°-38°C.) and minimum temperatures from 0°F. to −2°F. (−18°-29°C.).

No part of Utah may be classed as humid, although mountains and high plateaus are better watered than areas of low elevation. Average annual precipitation in mountain and high plateau areas ranges from 16 to 40 inches (410-1,000 mm); the driest areas have an annual average of less than 8 inches (200 mm) of precipitation. Most of the Great Basin receives less than 16 inches (410 mm), and extensive portions receive less than 8 inches of precipitation. The Colorado Plateau receives from 8 to 16 inches, the smaller figure being characteristic of deep canyons and the higher of the more elevated plateaus. The Uintas and the Wasatch receive from 16 to 40 inches per year.

The length of the frost-free season is determined by both latitude and elevation, with high areas and northerly sections having a shorter growing season than lower and more southerly areas. The mountains and some of the higher plateau surfaces have a growing season of less than 90 days. Most of the western part of the state has a growing season of 120 to 180 days. The longest growing season is found in the south-central part of the state, where the frost-free season ranges from 180 to 240 days.

AVERAGE ANNUAL RAINFALL

All but the higher parts of Utah receive less than 20 inches—500 mm—of rain each year.

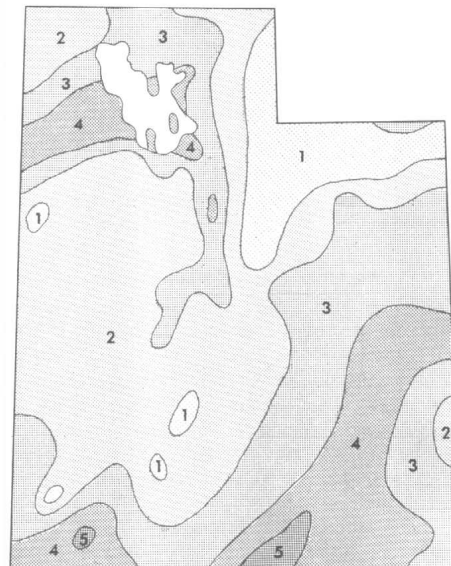


Mm	Inches	Mm	Inches
under 250	1	under 10	3
250-500	2	500-750	4
		750-1,000	30-40

Figures within areas are for identification purposes only.

GROWING SEASON

The growing season varies from less than three months in the mountains to eight months in the southern parts of the state.

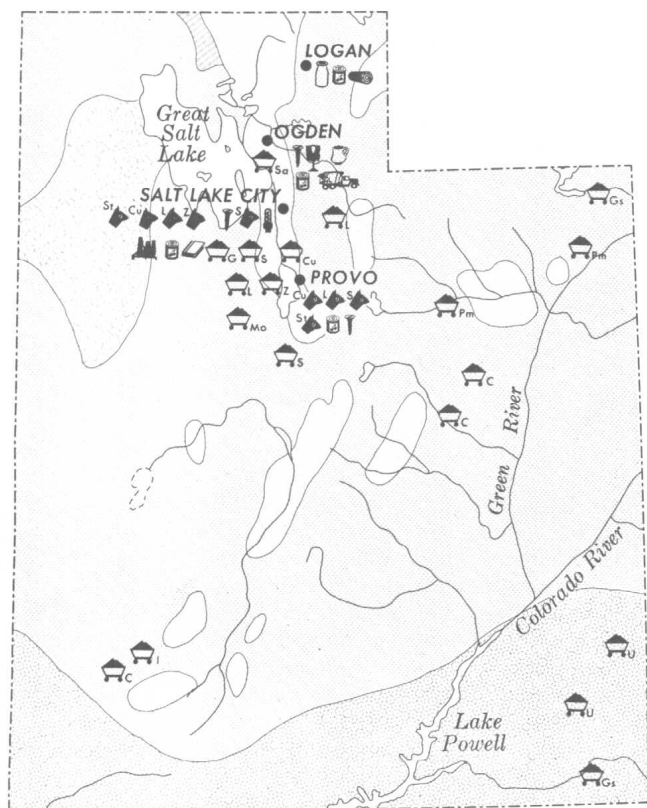
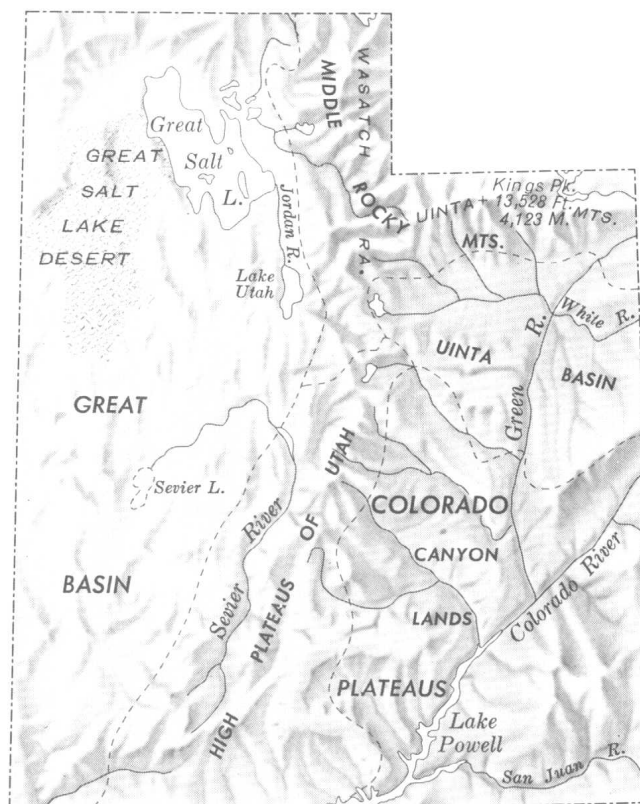


Average Number of Days in Frost-Free Period

1	40-80	3	120-160	5	220-240
2	80-120	4	160-200		

Figures within areas are for identification purposes only.

NATURAL REGIONS



ECONOMY

HEAVY INDUSTRY

- St Steel
- Cu Copper
- L Lead
- Z Zinc
- S Silver
- Petroleum Refining

LIGHT INDUSTRY

- Clothing
- Concrete
- Dairy Products
- Electrical & Electronic Products
- Food Processing
- Lumber & Forest Products
- Metal Products
- Printing and Publishing
- Stone Clay & Glass Products

MINING

- c Coal
- cu Copper
- g Gold
- i Iron Ore
- L Lead
- Mo Molybdenum
- G_n Natural Gas
- m Petroleum
- s Silver
- u Uranium
- z Zinc
- sa Salt

AGRICULTURE

- Wheat & Small Grains
- Special Crops & General Farming (Irrigated)
- Year Long Grazing
- Seasonal Grazing
- Desert

Soils. Topographic and climatic differences within Utah result in variations in the character of the soil within that state. The gray- or brown-colored soils typical of arid regions occupy much of the Great Basin and Colorado Plateau; such soils are little leached and high in mineral nutrients but are deficient in organic matter. Many dry areas, especially in the Great Basin, have soils that are too high in various salts to be useful for agriculture. A great variety of soils occur in such rugged areas as mountains and eroded plateaus; locally there may be useful soils, but many are likely to be thin and stony. Small areas in the southwest have chestnut- and brown-colored soils, marked by accumulations of lime in their subsoils. PHYLLIS R. GRIESS

NATURAL RESOURCES

Flora. Due to the great variations in altitude in Utah and the meeting within the state of three major physiographic provinces, Utah has a wide variety of plant life. A person climbing from the desert floor west of Provo, which has an elevation of about 4,550 feet (1,390 meters), to the top of Mount Timpanogos, 11,750 feet (3,581 meters) high, experiences the same changes in climate and life zones as he would in traveling from Mexico to the Arctic Circle.

Basin and Range Province. The Great Basin section of the Basin and Range Province is Utah's desert. Only a few trees and shrubs are adaptable to it. Toward the southern reaches of the Great Basin, in the warm desert region, the creosote bush dominates the landscape. Here are also found the mesquite and the Joshua tree. Farther north, in the cold desert areas and at the lower elevations, only shade interrupts the otherwise barren landscape. In the even colder, broad, high valleys and lower foothills is the sagebrush, which occupies a greater area than any other vegetation in the Great Basin. On the Great Basin mountainsides the piñon pine and the juniper grow.

Middle Rocky Mountains. The Wasatch and Uinta mountains are covered with a great variety of vegetation that changes with altitude. Along the banks of the canyon streams grow the willow-leaf cottonwood and the box elder. Slightly higher on the sides of the canyons are a variety of shrubs—red birch, mountain alder, hawthorn, and several types of willows. Higher still grow great thickets of bigtooth maple, scrub oak, chokecherry, sumac, service berry, and mountain mahogany. At higher elevations in the mountains grow forests of quaking aspen, Douglas fir, white fir, and blue spruce. Bright wild flowers carpet the ground between the stands of timber. In the high mountains, reaching to the timber line, are deep forests of Englemann spruce and alpine fir. In the alpine zone above grow only sedges, herbs, and alpine shrubs and mosses.

Colorado Plateau. The vegetation zones of the Colorado Plateau are much the same as those found in the Great Basin and the Middle Rocky Mountains, modified only slightly by differences in precipitation and temperature. In the low areas of the High Plateaus of Utah are extensive tracts of sagebrush and the piñon-juniper associations; in the higher areas appear great stands of conifers and some broadleaf trees. The Canyon Lands are dominated by the piñon-juniper associations. The saltbush and desert shrubs found in the Great Basin are also here. The blackbush (desert shrub) is found throughout the San Juan region and the Colorado and lower Green rivers. Where the mountains reach high enough to gather moisture, there are fine stands of conifers and a few of the broadleaf trees.

Fauna. *Mammals.* The principal species of large mammals found in Utah are elk, buffalo, moose, bighorn sheep,

antelope, mule-tail deer, Canada lynx, bobcat, and bear. Among the smaller mammals are the rabbit, squirrel, chipmunk, pocket gopher, prairie dog, and several other varieties of rodent. Other fur-bearing animals include the weasel, muskrat, beaver, badger, skunk, marten, fox, and ringtail cat.

Birds. Ducks are the most numerous of Utah's game birds, followed by the ring-necked pheasant, sage hens, pine hens, and ruffed grouse. The golden eagle is the largest of the predatory birds; hawks and owls are numerous. Utah's state bird, the sea gull, is protected by law in memory of its timely intervention against an invasion of crickets in 1848. Lesser-known birds found in Utah but rare elsewhere include the Treganza heron, the Utah horned lark, the Utah red-winged blackbird, and the gray titmouse. Crows and vultures are common in the southern part of the state. On the islands of the Great Salt Lake may be seen the great white pelican. In the canyons on the swift streams is found the water ouzel, or dipper bird. Other birds common to Utah are the house finch, the magpie, the cedar jay, the great blue heron, and the small marsh wren.

Fish. Among the fish native to Utah are the cutthroat, mountain whitefish, chub, sucker, minnow, sculpin, dace, and Bonneville cisco. Since the 1870's many varieties have been introduced, chiefly the trout, catfish, bass, and carp.

Reptiles and Amphibia. Lizards are found throughout the state. Also common is the desert horned toad. The sidewinder, rattlesnake, gopher snake, garter snake, and racer snake are also known.

Forests. Utah is lightly forested, with a total of 15,288,000 acres (6,187,000 hectares) or less than one third of the state's land area, in forests. Of this, only 3,825,000 acres (1,548,000 hectares) are classified as commercial forest. The concentrations of commercial forest are in the Uinta Range, the Wasatch Range, and the Dixie National Forest. The principal species found in the state are lodgepole pine, piñon pine, juniper, Englemann spruce, Ponderosa pine, Douglas fir, sub-Alpine (white) fir, and blue spruce, the state tree.

Nearly one half of the virgin forest that the first settlers found in Utah is still standing. These old-growth forests leave little room for young trees. Second-growth forests of sawtimber-size trees cover about one sixth of the commercial forest area. On almost one third of the commercial forest land there is a dense growth of "pole timber"—trees that are from 5 to 11 inches (13-28 cm) in diameter. These are tomorrow's sawtimber forests, rapidly approaching usable proportions.

Water. Utah's water supply falls, in the form of rain or snow, on high mountain watersheds, where it forms huge natural reservoirs. With the coming of spring, the snows melt, causing an initial heavy runoff which gradually declines until, by late summer, the flow of all streams decreases and many dry up.

About 53,000,000 acre-feet (65.4 billion cubic meters) of water falls annually within the boundaries of Utah. Another 750,000 acre-feet (925 million cubic meters) enters the state from the north in the Bear River. This total supply of 53,750,000 acre-feet (66.3 billion cubic meters) is reduced, however, by 2,334,000 acre-feet (2.88 billion cubic meters) of water leaving the state in streams tributary to the Colorado, the Columbia (via the Snake), the Virgin, and the Upper Bear rivers.

Though Utah's development has been made possible by wise management of water, in the future water may well be Utah's limiting resource. Increased demands by agriculture, industry, and new population centers necessitate compre-

hensive plans for the storage, conservation, and transportation of Utah's water.

Mineral Deposits. Utah, often called the Treasure House of the Nation, has the largest variety of commercial minerals of all the states. Metals found in abundance include gold, silver, copper, lead, zinc, molybdenum, uranium, and vanadium. Iron ore, coal, oil, gas, natural-rock asphalt, shale, rock salt, and sea salt, as well as alunite, gilsonite, ozocerite, elaterite, phosphates, nitrates, and potash are also found in rich supply. Only a few precious stones are found.

Conservation. The conservation of Utah's natural resources—particularly air, water, timber, grazing lands, and game—is the joint responsibility of federal and state agencies. The principal state conservation agencies are the department of social services and the department of natural resources. The Utah water pollution committee and the air conservation council, divisions of the department of social services, are charged with meeting acceptable standards for clean water and clean air. The department of natural resources includes the division of parks and recreation, the division of water resources, the division of water rights, and the division of wildlife resources.

Wild game refuges in Utah include a buffalo herd on Antelope Island in Great Salt Lake; an elk herd with winter feeding grounds near Logan; and the Bear River Migratory Bird Refuge west of Brigham City, one of the largest in the United States.

Public Domain. In 1976, 34,226,000 acres (13,851,000 hectares), or 65 percent of Utah's total land area, were in the public domain.

ECONOMIC ACTIVITIES

Utah's economy during the territorial period was built chiefly by the Mormon pioneers under the direction of the church leaders. The Mormons transplanted civilization to the desert lands, founded villages and cities, instituted irrigation, developed natural resources, organized transportation companies, constructed telegraph lines, built railroads, and produced and marketed for themselves through their cooperative agencies the goods necessary for their economic life, with little reliance on the outside world.

With the coming of the railroad in 1869, Mormon direction of the economic life of the territory was seriously challenged. Non-Mormons began to open mines, establish banks, enlarge merchandising, and in general helped tie the Utah economy to that of the nation. During the 1890's the Mormon Church relinquished its former role of leadership in general economic development, and individuals stepped in to direct the development of Utah's economy along *laissez-faire* lines.

After the turn of the century the economy of Utah became increasingly closely related to the economy of the nation as a whole. The demands of World War I caused a growth in manufacturing. During the 1920's agriculture and mining were depressed, and the economy was greatly depressed during the 1930's. The impact of World War II on Utah's economy was great. The construction of the Geneva Steel plant near Provo, of Hill Air Force Base near Ogden, the establishment of other defense installations, and the coming of new industries engaged in producing goods for national defense effected major permanent changes in the state's economy. Government payrolls became the state's largest source of personal income. The increased demand for labor reversed the outflow of Utah's population. New industries developed in the state, and the discovery of significant deposits of petroleum and natural gas, coupled with

the increasing demand for uranium, produced modern mining booms. Although the state continued to prosper in the 1960's and early 1970's, per capita income remained below the national average.

Agriculture. Agriculture was Utah's first economic pursuit and a major source of livelihood for many decades. Pioneer settlements were agricultural villages, founded as part of an over-all plan for an economically self-sufficient empire. It was not until after 1869 that mining developed to a sufficient extent to give agriculture competition as a major occupation.

From the beginning, a wide diversity of crops and livestock characterized Utah agriculture. Agricultural surpluses were freighted to mining camps and small towns in neighboring territories and states. The arid west provided insufficient rainfall for the maturing of crops, and irrigation early became one of the dominant characteristics of Utah agriculture.

Farms and Farmland. One fifth of Utah's total land area, or 10,361,700 acres (4,193,200 hectares), was devoted to farming in 1974. Pasture and range land constituted the great bulk of the total land in farms. Of the land in crops, about half was irrigated. In 1974 there were 13,130 farms in the state, with an average of 789 acres (319 hectares) per farm, as compared to 23,000 farms with an average of 537 acres (217 hectares) in 1954.

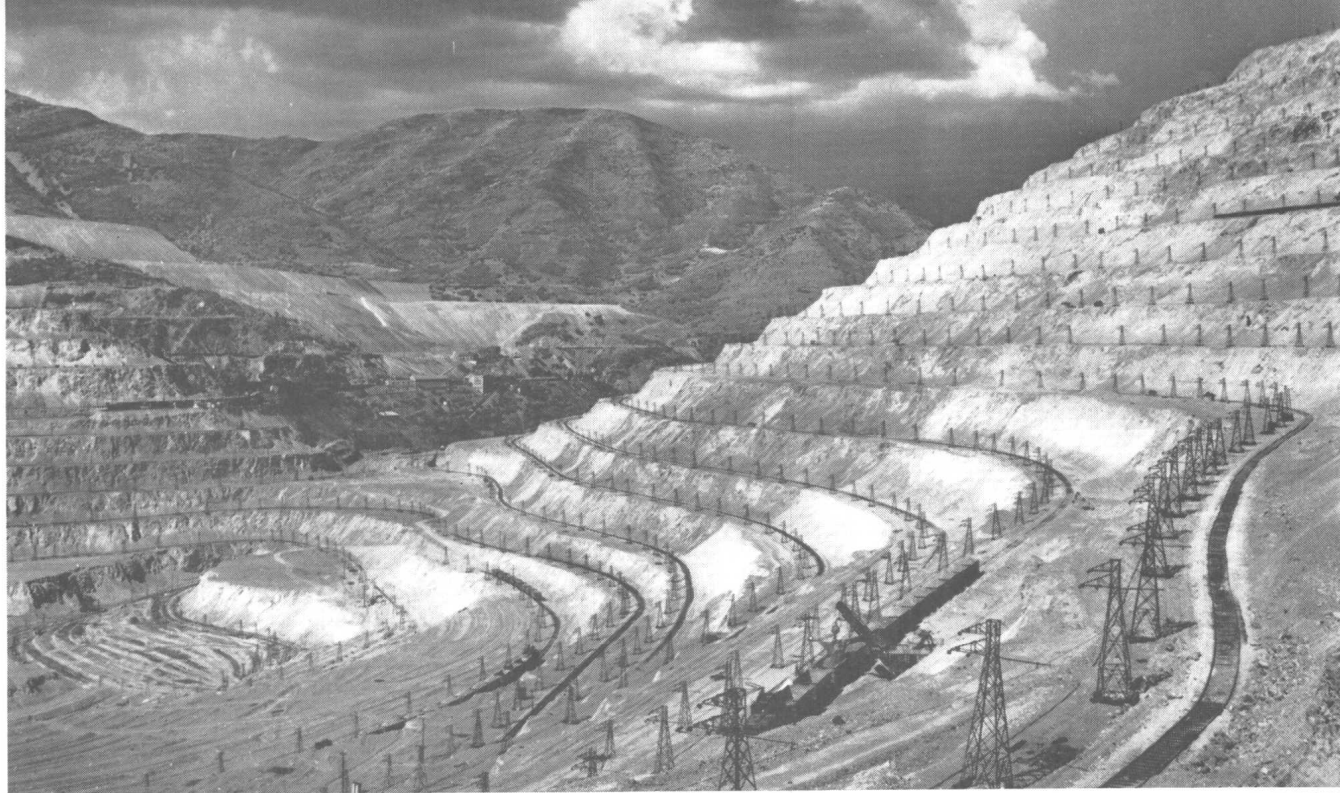
Principal Products. About 55 percent of Utah's land is useful for pasture and range, and beef and dairy production is therefore very important. About three quarters of cash farm income is derived from livestock and livestock products, with beef, dairy products, turkeys, and lambs the most important. Utah's chief crops are hay, winter wheat, sugar beets, and barley. Vegetables and fruits, especially cherries, potatoes, apples, peaches, onions, pears, and dry beans, also provide a sizable income for Utah's farmers. Greenhouse and nursery products are also important.

Among Utah's unusual agricultural specialties is mink raising, in which the state ranks third in the nation. In 1976 there were about 170 mink ranches in the state, concentrated in the northern portion. There are also a few beaver ranches, particularly in Davis County. The production of honey is an important industry, 50 percent of Utah's honey crop being exported.

Manufacturing. Manufacturing played an important role in Utah's pioneer economy. The pioneers of 1847 turned at once to making adobe bricks, to erecting grist

FARM PRODUCTION, 1976

Commodity	Quantity Produced	Sales
Crops		\$97,121,000
Hay	1,820,000 short tons	29,833,000
Wheat	6,519,000 bushels	17,855,000
Fruits and nuts		12,943,000
Vegetables		10,796,000
Sugar beets	319,000 short tons	6,405,000
Barley	6,930,000 short tons	6,256,000
Livestock and Products		\$262,186,000
Cattle and calves	132,900 short tons	97,177,000
Milk and cream	462,000 short tons	87,756,000
Turkeys	38,000 short tons	25,088,000
Sheep and lambs	15,250 short tons	14,052,000
Eggs	23,583,000 dozen	11,608,000
Hogs	8,170 short tons	5,961,000
Total, including items not listed above		\$359,307,000



JOSEF MUENCH

THE BINGHAM COPPER MINE, near Salt Lake City, is the world's largest open pit copper mine. Open cars carry ore to the smelter.

mills and sawmills, and plants to card wool, smelt iron ore, refine sugar, and to make clothing, furniture, and machinery. Home industries supplied most of the essential goods of life—soap, brooms, candles, pottery, and beverages. The processing of mineral products became important shortly after the coming of the railroad in 1869.

From 1860 to 1900 there was a steady growth in Utah manufacturing as homemade goods were gradually replaced by store goods. From 1900 to 1919 Utah experienced a rapid growth in manufactures, owing to the demands of World War I and the increased demand for goods from the Western states. With the close of World War I employment and wages declined sharply, not to rise significantly again until 1939, when the demands of World War II brought Utah manufacturing to maturity. Especially significant was the construction (1942-1944) of a completely integrated, \$200 million steel plant at Geneva. Ideally located

with regard to raw materials and markets, the plant had a marked effect on Utah's subsequent industrial growth.

Utah's industrial growth immediately after World War II was very rapid compared with the rest of the United States. This increase in industrial output occurred principally in the manufacture of petroleum and coal products, stone, clay, and glass products, nonelectrical machinery, missile guidance systems, and electronic equipment.

About 15 percent of Utah's total nonagricultural work force is employed in manufacturing activities. Utah's most important industrial activity in terms of the income it generates is the manufacture of nonelectrical machinery, followed by food processing and the manufacture of transportation equipment, fabricated metals, and electrical equipment. Other important industries include the manufacture of stone, clay, and glass products, printing and publishing, and the manufacture of petroleum and coal products and clothing. The production of primary metals is also one of Utah's most important industries. Most of the industrial plants are located between Brigham City and Provo, with the heaviest concentration near Salt Lake City.

Minerals and Mining. Because the Mormons sought to build an agricultural empire in the mountain West and deliberately ignored mining except for early but brief successes with coal and iron, it remained to the non-Mormons to develop mining in Utah. Mining received its first impetus from Col. Patrick E. Connor, commander of federalized California volunteers sent to Utah in 1862. In 1863 ore deposits rich in copper, silver, and lead were discovered in Bingham Canyon. Connor's soldiers, many of whom had had mining experience, were lured into neighboring regions and soon the major mining districts of Utah were defined: Bingham, Park City, Alta, Tintic, Ophir, Stockton, American Fork Canyon, Milford, Marysvale, and Gold Hill. The rich silver and lead ores of Bingham were profitably worked even without the benefit of railroad transportation, which reached Salt Lake City in 1870. With the coming of the rails to the mines, transportation costs were greatly reduced, and mining extended into surrounding districts.

MANUFACTURING STATISTICS, 1976

Industry Group	Value Added* (million \$)	Payroll (million \$)	Number of Employees
Nonelectrical machinery	252.2	103.7	10,300
Food products	190.3	74.5	8,400
Transportation equipment	175.4	87.5	5,800
Fabricated metals	127.5	45.0	3,700
Electrical equipment	106.8	38.9	3,700
Stone, clay, & glass products	105.8	46.9	3,800
Printing & publishing	98.9	40.4	4,300
Petroleum & coal products	72.4	15.5	900
Clothing	54.0	27.3	4,600
Lumber & wood products	39.8	18.9	2,200
Chemicals	39.0	12.4	1,200
Furniture & fixtures	21.9	11.7	2,200
Totals, including primary metals and other units not listed above	1,708.7	779.4	71,200

*The "value added" by an industry is a measure of its contribution to income. Value added is equal to the sum of wages, rents, and profits. It is calculated by subtracting from the sales price of the goods such production costs as raw materials and power (but not labor).

Through the early years of mining in Utah, mining had little general effect upon the economy of the state, but operated as a separate element. From 1869 to 1940, ores were smelted and directly exported. Since 1940, however, the processing of industrial metals and nonmetallic minerals to meet the needs of the rapidly growing Western states has made mining a more integral part of Utah's economy.

Each of Utah's counties has produced mineral wealth at one time. In 1869 gold production was begun in Tooele County. In 1871 the American Fork Mining District was organized out of the hundreds of claims located south of Little Cottonwood Canyon. Silver Reef, in southern Utah, produced silver in fabulous quantities during the 1870's. Petroleum in commercial quantities was discovered in 1948. Although Utah produced uranium in small quantities before 1948, it was the postwar demand that brought a uranium boom to Utah comparable to the gold rushes of the past century. Today, petroleum is Utah's most important mineral by value. Most of Utah's petroleum is produced in the eastern part of the state, particularly in the area east of Provo. Copper is Utah's second most valuable mineral. The largest deposits of copper lie in the area around Bingham. The mining of coal, Utah's third most important mineral, has become more important as a source of fuel coal and liquid fuel and as a source of chemicals for the rapidly growing synthetics industry. Almost all the coal mined comes from the east-central part of the state. Other minerals produced in significant quantities are natural gas, gold, zinc, silver, and sand and gravel.

MINERAL PRODUCTION, 1976

Mineral	Quantity	Value
Petroleum (crude)	34,304,000 barrels	\$318,911,000
Copper	185,500 short tons	258,157,000
Coal (bituminous)	7,967,000 short tons	182,712,000
Natural gas	57,416,000,000 cubic feet	28,995,000
Gold	187,300 troy ounces	23,475,000
Zinc	22,500 short tons	16,636,000
Silver	3,134,000 troy ounces	13,633,000
Sand and gravel	10,547,000 short tons	13,633,000
Salt	705,000 short tons	10,090,000
Lead	16,300 short tons	7,529,000
Stone	2,751,000 short tons	7,009,000
Lime	202,000 short tons	6,855,000
Gypsum	270,000 short tons	1,657,000
Other minerals ¹		154,880,000
Total		\$1,043,981,000

¹ Includes asphalt, beryllium, carbon dioxide (natural), cement, clays, fluor-spar, gemstones, iron ore, magnesium compounds, molybdenum, natural gas liquids, phosphate rock, potassium salts, pumice, sodium sulfate, tungsten concentrates, uranium, and vanadium.

Mineral deposits discovered in the early 1970's include a substantial body of copper ore near the Bingham open pit mine, uranium and vanadium near Monticello, and alunite and alumina near Cedar City. An underground copper mine at Bingham was scheduled to start operating in 1979. Plans were also under way to develop Utah's extensive deposits of oil shale and tar sands.

Tourism. More than 8 million tourists visit Utah annually. The major tourist season is summer, with most visitors stopping at Salt Lake City and Zion and Bryce National parks. Autumn brings large numbers of hunters from neighboring states, and winter brings sports enthusiasts to the state's ski resorts. Increasingly, visitors are making their way to the primitive areas—Lake Powell, Flaming Gorge, and the Canyonlands National Monument.



UTAH TRAVEL COUNCIL

FLAMING GORGE DAM, surrounded by vertical-walled cliffs and forested mountains. The lower end has become a popular recreation area.

Power. Electricity was introduced to the Salt Lake, Weber, and Utah valleys in the 1880's and 1890's. The remote areas in Utah received electricity through the federal Rural Electrification Program of the 1930's.

Most of the power used in Utah today is furnished by three private utilities, six municipal plants, and three rural cooperatives, and increasing use is made of the power generated at Flaming Gorge and Glen Canyon Dam. Utah Power and Light Company, which serves most of the northern portion of the state, generates 70 percent of its power by steam, making use of the abundant coal reserves nearby. Municipal and rural plants usually use water power from nearby canyon streams.

By 1977 Utah had an electrical generating capacity of 1,500,000 kilowatts. More than half of the state's power is produced in thermal plants.

Commerce and Trade. The early Mormon people in Utah planned an agrarian-based, self-sufficient, cooperative economy which operated with only partial success in opposition to the predominantly *laissez-faire* world. A church Tithing Office served as the storehouse and center of trade for many years, receiving and distributing surplus goods. The Tithing Office exported surpluses, particularly to mining communities in neighboring regions, and imported needed goods. In 1868 Zion's Cooperative Mercantile Institution (ZCMI) was established, with main offices in Salt Lake City and branch offices throughout Mormon country, to distribute locally produced goods and other goods brought in by railroad.

With the coming of the railroad and the development of mining, Utah's economy underwent significant changes. Salt Lake City became a banking and investment center for mining and railroad-connected business activities. With the development of the livestock industry, Ogden became the livestock shipping center of the west. Today, the state's major commercial centers are located in the populated area centered on Salt Lake City and stretching from Ogden on the north to Provo on the south.

More than 20 percent of Utah's work force is employed in wholesale or retail trade. Retail trade constitutes the largest single segment of private business in the state.

Transportation. No sooner had the Mormon pioneers located in Salt Lake Valley than they found themselves on a main route of travel to the West Coast, with emigrants and gold-seekers passing through eager to exchange money for produce and tired horses for fresh stock. Ever since, Utah has been at the "crossroads of the West," as wagon roads, railroads, and highways have crossed its mountains.

Utah became a center of railroad-building activity after the meeting of the Union Pacific and the Central Pacific railroads at Promontory Point on May 10, 1869. Some of the early railroads were the Utah Central, the Utah Southern, the Utah Northern, the Utah Eastern, and the Summit County. In 1975 service was provided by seven railroads. Utah had 1,770 miles (2,850 km) of track by 1975, compared with 2,082 miles (3,350 km) in 1940. The principal roads are the Union Pacific, Denver and Rio Grande Western, Western Pacific, and Southern Pacific.

There were 48,900 miles (78,700 km) of municipal and rural highways in Utah by 1976. Of these, 939 miles (1,511 km) were part of the national interstate highway system. By 1976 Utah had 55 public and municipal airports and 35 private airports. Included among the public airports were three military airports: Hill Field, Dugway Proving Grounds, and Camp Williams (National Guard). Wendover Airport is a joint military and civilian air field. Several major airlines serve the state. Two interstate bus lines provide service to the state. An interurban bus line connects Ogden and Salt Lake. Salt Lake City, Ogden, Provo, and Logan have city transit lines.

Telephone and Telegraph Facilities. The first overland telegraph was completed in October 1861, with wires meeting in Utah. In 1867 the Deseret Telegraph Company was completed; the company was built, owned, and operated by the Mormon Church until absorbed by Western Union in 1900.

By 1977 Utah had some 878,900 telephones in operation. Of these, 233,700 were business phones and 645,200 were residential phones. Telegraph services are supplied by Western Union.

Banking. By 1977 there were 66 commercial banks in Utah, with total assets of \$4.3 billion. By 1976 there were 16 savings and loan associations in the state, their total assets were \$1.8 billion.

Labor. The oldest labor organization in Utah is the Salt Lake Typographical Union, organized Aug. 3, 1868, as the Deseret Typographical Union, No. 115. Early in 1888 the building and construction trades were organized, and in 1902 they received a charter from the National Building Trades Council of America. The International Brotherhood of Electrical Workers, Local 57, was chartered in Utah in 1896. In Utah's early mining camps, labor organized as in other Western mining states. Located in the center of the mining West, Salt Lake City occasionally played an important role. Even so, Utah was never an important base or center of operations for unionism.

Utah was the first state in the nation to write a maximum-hours law. The first meeting (1896) of the state legislature took a most progressive step in writing a law that made eight hours the basic work day for underground mines and smelters. The act made history when the U.S. Supreme Court upheld the Utah statute in *Holden v. Hardy* (1898).

During the 1920's organized labor lost ground in Utah as elsewhere in the nation and, again as in the rest of the

nation, during the 1930's gained basic rights and advantages. The United Mine Workers of America, though in existence for many years, was not officially recognized in Utah until 1933. In 1936 the Congress of Industrial Organizations (CIO) set up the Steel Workers Organizing Committee to organize into an industrial union all of the employees of basic steel; and in 1942 the United Steel Workers of America came into being and the final merger with the Amalgamated Association of Iron, Steel, and Tin Workers (established in the 1890's) took place. The first local union in Utah was organized in 1937 at the Ironton plant of Columbia Steel Company, a subsidiary of United States Steel Corporation.

Utah has a rather conservative labor law with no unusual features. The state's first law dealing with union-management relations was written in 1937, rewritten in 1943, and revised in 1947. In 1955, a "right to work" law was enacted in Utah.

In 1974 about 15 percent of the nonagricultural work force in Utah was unionized, compared with 26 percent in the nation as a whole.

POPULATION

No reliable estimate exists of the number of Indians in Utah before the coming of white settlers. The Spanish added no permanent population to the area, nor did the mountain men in quest of furs in the early 19th century, and it was the Mormon migration that gave Utah its basic population. The first groups to come were chiefly from New England and New York. In the succeeding decades the migration consisted mainly of emigrants from the British Isles and the Scandinavian countries, with lesser numbers from other countries of western Europe and the United States. Mormon emigration from Europe was greatly aided by the Perpetual Emigrating Fund Company, established in 1849 to provide transportation to America for poor converts who were expected to return the money advanced for transportation. During its 40 years of operation, the company helped bring more than 85,000 emigrants from Europe to Utah.

The first significant non-Mormon residents of the territory were U.S. troops sent to Utah in 1858 and in 1862. During the 1860's, however, non-Mormons ("Gentiles") came in increasing numbers to engage in mining, business, religious, and educational work. With the coming of the railroad in 1869 the non-Mormon population grew more rapidly. Through the latter part of Utah's territorial period, its population was possibly 90 percent Mormon and 10 percent non-Mormon.

Population Characteristics. The 1970 population of Utah was 1,059,273. Between 1960 and 1970 Utah experienced an 18.9 percent growth in population, compared with the national growth rate of 13.3 percent. Although 13 rural counties showed a loss in population, communities in the southeastern section of the state experienced phenomenal growth, because of booms associated with uranium and reclamation projects. About 80 percent of the total population lived in urban areas, concentrated for the most part in the counties of Weber, Davis, Salt Lake, and Utah, situated along the Wasatch front north and south of Salt Lake City.

Utah's population is almost exclusively of northern European background. Ninety-eight percent of the population is white, with the remainder being Japanese, Indian, and black. Three fourths of Utah people are church members, and of that number about 90 percent (65 percent of the

total population) are members of the Church of Jesus Christ of Latter Day Saints (Mormon). Other religious groups, in order of size, are Methodists, Roman Catholics, Lutherans, Episcopalians, Presbyterians, Disciples of Christ, Baptists, and Congregationalists.

Cities. Utah's principal cities, with their 1970 and 1960 censuses, are listed below:

City	1970	1960
Salt Lake City (capital)	175,885	189,454
Ogden	69,478	70,197
Provo	53,131	36,047
Bountiful	27,853	17,039
Orem	25,729	18,394
Logan	22,333	18,731
Murray	21,206	16,806
Roy	14,356	9,239
Brigham City	14,007	11,728

GOVERNMENT AND POLITICS

Constitution. Utah is governed under its first constitution, adopted in 1896 and since amended more than 60 times—chiefly in the areas of finance and the judiciary. Noteworthy provisions include the right of women to vote and hold any office and those for initiative and referendum. There are no recall provisions. The constitution specifically forbids polygamy and calls for the separation of church and state and the noninterference of the church in state affairs, provisions growing out of the struggle for statehood.

Executive. The executive branch of the state government is made up of a governor, lieutenant governor, secretary of state, auditor, treasurer, and attorney general, all of whom are elected for four-year terms. There are about 60 major offices, boards, commissions, departments, and other units participating in the administration.

The governor has the power of veto over acts of the legislature (except that joint resolutions do not require the governor's approval), appoints all state and district officers whose appointment is not otherwise provided for, has control over finances through an item-veto on appropriations bills and through the supervision of the budgets of departments and agencies, may grant respites and reprieves in certain criminal cases, and is commander in chief of the military forces of the state.

GOVERNOR, STATE OF DESERET

Governor	Term
Brigham Young	1849-1851

TERRITORIAL GOVERNORS

Governor	Term
Brigham Young	1851-1857
Alfred Cumming	1857-1861
John W. Dawson	1861
Stephen S. Harding	1862-1863
James Duane Doty	1863-1865
Charles Durkee	1865-1869
J. Wilson Shaffer	1870
Vernon H. Vaughn	1870-1871
George L. Woods	1871-1874
Samuel B. Axtell	1874-1875
George W. Emery	1875-1880
Eli H. Murray	1880-1886
Caleb W. West	1886-1889
Arthur L. Thomas	1889-1893
Caleb W. West	1893-1896

STATE GOVERNORS

Governor	Party	Term
Heber M. Wells	Republican	1896-1905
John C. Cutler	Republican	1905-1909



THE STATE SEAL OF UTAH

The state seal was adopted in 1896, the year Utah achieved statehood. In the center of the seal is a shield on which is depicted a beehive flanked by sego lilies. The beehive, now the official emblem of the state, has long been a widely used symbol in Utah. Its use as a symbol is associated with Mormon scriptures. The sego lily is the state flower. On the shield above the beehive is the word "Industry," which is the state motto. Below the beehive is the date 1847, which was the year the Mormons arrived in Salt Lake Valley. Above the shield is shown a bald eagle, the U.S. national emblem, with outstretched wings. On each side of the shield is draped a U.S. flag. Around the rim of the seal are the words "The Great Seal of the State of Utah" and the date 1896.

William Spry	Republican	1909-1917
Simon Bamberger	Democrat	1917-1921
Charles R. Mabey	Republican	1921-1925
George H. Dern	Democrat	1925-1933
Henry H. Blood	Democrat	1933-1941
Herbert B. Maw	Democrat	1941-1949
J. Bracken Lee	Republican	1949-1957
George D. Clyde	Republican	1957-1965
Calvin L. Rampton	Democrat	1965-1977
Scott Matheson	Democrat	1977-

Legislature. The Utah legislature is composed of a Senate and a House of Representatives. There are 29 senators and 75 representatives. Senators are elected for four-year terms and representatives for two-year terms. Senate terms are staggered so that about one half of the membership is elected each two years. Regular sessions are held in odd-numbered years and last no longer than sixty days. Budget sessions are held in even-numbered years and last no longer than twenty days. Special sessions called by the governor for special legislation are limited to thirty days and to legislating on the matters for which they are called. A two-thirds vote of the members of both houses is necessary to override a governor's veto.

Utah's legislators are aided by a continuing research and reference staff including a legislative research director, fiscal analyst, general counsel, and auditor general.

Judiciary. The judicial power of the state is vested in the Senate, sitting as a court of impeachment; the Supreme Court; district courts; circuit courts; juvenile courts; and justices of the peace. The supreme court is composed of five justices elected on a nonpartisan ballot for ten-year terms. District court and circuit court judges are elected by popular nonpartisan ballot for six years. Judges of juvenile courts are appointed by the governor. Justices of the peace are elected by their precincts.

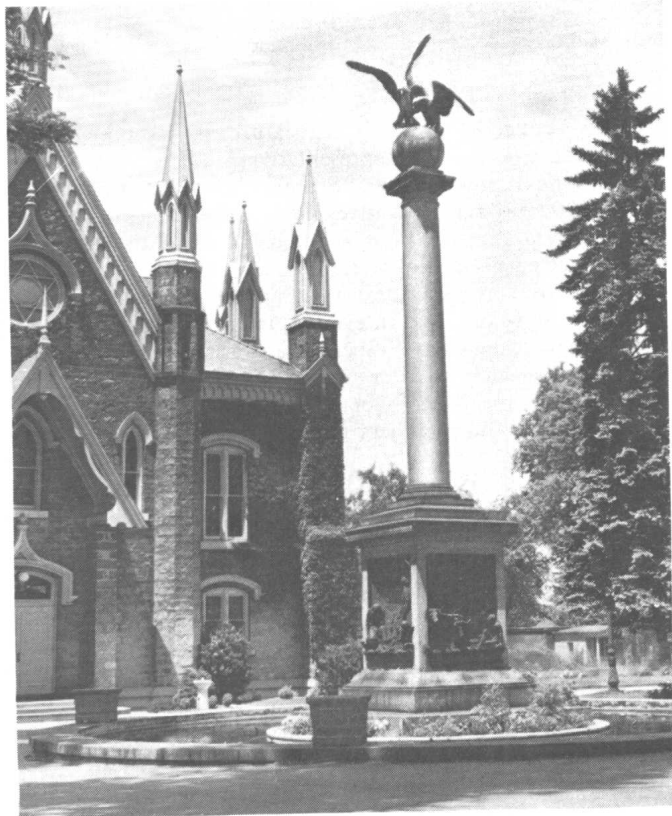
County Government. The county is the creature of the state, established to perform the following functions of government for rural areas outside incorporated cities: assess and collect property taxes; enforce laws and participate in court administration; administer local public welfare; construct and maintain highways, sidewalks, airports, and the like; supervise health and sanitation; conduct general elections; operate county hospitals and provide for the indigent; provide recreation and library facilities; provide fire protection; license businesses and trades; and record property mortgages, deeds, and other legal documents. The principal county officers are a board of county commissioners, which has responsibility for all county affairs and the supervision of all other county officers and departments. Other officers of the county government are a clerk, auditor, assessor, treasurer, recorder, sheriff, surveyor, attorney, justice of the peace, and constable.

Local Government. The functions of municipal government in Utah are similar to those in other American cities. State law prescribes the forms of government for municipalities according to the population class in which they fall. The commission form is permitted to cities of the first and second classes, the mayor-council form for third-class cities, and the president and town-board form for towns. However, the city-manager form is permitted for any city or town desiring that form of government.

Politics. In 1891 the national Republican and Democratic parties replaced the territorial People's and Liberal parties in Utah (*see History section of this article*). The Mormons would most likely have voted Democratic, but to avoid the continuation of Mormon unit-voting under new labels, a two-party system had to be established. To help achieve this end, the Church called on various ecclesiastical

THE SEA GULL MONUMENT, a memorial to the flocks of gulls that saved the crops of the pioneers during a cricket invasion in 1848.

PHILIP GENDREAU



leaders to vote Republican in an effort to equalize the party strengths. Elections in 1892 and 1894 showed a national two-party system emerging, and statehood was granted. Since 1900 Utah has voted for the victorious candidate in presidential elections, except in 1912, 1960, and 1976, when the state voted for William Howard Taft, Richard Nixon, and Gerald Ford, respectively.

Although Mormon leadership shows Republican leanings, many of the leaders are prominent Democrats, and the Church takes no official stand with regard to endorsing any particular political party.

National Representation. Utah has two members in the U.S. House of Representatives. The state has four electoral votes.

Finance. Revenue for the operation of the state government is obtained principally from federal grants-in-aid (about one third of the total), a general sales tax, individual income taxes, motor fuel taxes, corporate income taxes, and motor vehicle license fees. The principal expenditures are for education, highways, public welfare, natural resources, and hospitals. In the 1976 fiscal year Utah's general revenues amounted to \$945,206,000. In the same year, general expenditures were \$950,058,000.

SOCIAL AND CULTURAL ACTIVITIES

Education. The Mormons are dedicated to education as a part of their religion. They established schools at their gathering centers in the East and took the precaution before leaving Nauvoo, Ill., in 1846, of printing a supply of books for school use in the West. Almost immediately on arriving in Salt Lake Valley they established schools.

The Mormons provided for the education of their own children exclusively. In 1867, however, the first non-Mormon school was established by the Protestant Episcopal Church in Salt Lake City, and soon there were many non-Mormon schools established by various churches throughout the area. In response to the challenge of these denominational schools, a Mormon system of academies was established, beginning with Brigham Young Academy at Provo in 1875 and the Brigham Young College at Logan in 1877.

In 1890 the predominantly Mormon territorial legislature passed a law calling for a territorial system of tax-supported schools. The constitution of 1896 established a state educational organization which led eventually to a full-fledged secondary-school program. Nevertheless, Mormons, Protestants, and Catholics continued to operate separate school systems which paralleled the expanding public-school system. Gradually, however, the state-controlled and tax-supported school program gained the confidence of the people, and in 1912 the Mormons began to withdraw from full-time instructional programs and to establish a released-time system for religious instruction in connection with the public schools which they now supported. In 1920 the Church withdrew from all high school work in favor of the public schools, turned over some of its academies to the state for use as junior colleges, and moved out of secondary education entirely. It continued to maintain, however, a full-fledged university at Brigham Young University in Provo and to maintain religious institutions adjacent to university and high school campuses for the voluntary use of Mormon students.

Utah has consistently held a high place in the nation in educational achievement. In the mid-1970's, the state was among the nation's leaders in the percentage of state funds spent for education. Utah usually leads the nation in the median number of school years completed by its adult popu-

lation. Furthermore, the state generally ranks first in the percentage of its population that has graduated from high school. In the 1976-1977 school year, however, Utah ranked lower than the nation in the estimated average salary of classroom teachers (\$12,200; national average \$13,300) and in the estimated amount spent per pupil in average daily attendance in public schools (\$1,243; national average \$1,578).

In 1976-1977 Utah had 212,000 elementary school pupils and 6,600 elementary school teachers. In the same year, the state's secondary schools had an enrollment of 98,000 pupils taught by 6,300 teachers. There were 4,000 pupils in private schools in Utah.

State-supported institutions of higher learning are the University of Utah, at Salt Lake City; Utah State University, at Logan; Weber State College, at Ogden; Southern Utah State College, at Cedar City; College of Eastern Utah, at Price; Snow College, at Ephraim; and Dixie College, at St. George. Private institutions of higher learning include Brigham Young University (Mormon), at Provo, the largest denominational university in the nation; and Westminster College (Presbyterian), at Salt Lake City. During the 1977-1978 school year, the total enrollment for all Utah colleges was about 88,600.

Libraries. The Mormons interest in education coupled with their desire to keep a record of their activities led to the establishment of the Latter Day Saints' Church Historian's Library, today Utah's foremost private library. The Territorial Library, made up of books especially collected in the east for the purpose, opened its doors to the public on Oct. 14, 1851, and served as the major public library in Utah for over 40 years. In addition, small libraries were set up in various communities by literary groups, Sunday schools, and other organizations. The 1870 census reported the existence of 8 circulating libraries, 59 private libraries, 61 Sunday school libraries, 3 town and city libraries, and 1 territorial library; however, only 5 of these libraries contained more than 300 volumes.

In 1897 the legislature passed a law permitting cities to levy a tax for support of libraries, and in 1898 Salt Lake City founded Utah's first tax-supported public library.

Today almost all of Utah's population is served by public libraries, with a total of more than 3.3 million volumes and an annual circulation of nearly 9 million volumes. More than 20 bookmobiles under the supervision of the Utah State Library provide library service in the rural counties of the state. The oldest and largest public library in the state is the Salt Lake City Public Library, founded in 1898. It has an excellent collection of pamphlets and books on Utah and the Mormons and is a depository of the Library of Congress for Braille and books in sound. Also located in Salt Lake City are the Utah State Historical Society Library and the Utah State Library.

The best libraries in the state are found in the institutions of higher learning, that of the University of Utah being the largest. This library and those at Utah State University in Logan and Brigham Young University in Provo have significant collections on Utah and Mormon history. The Utah State Historical Society also has a notable collection of books on Utah and the Mormons, and the Carnegie Library at Ogden has a good collection of Western Americana.

The Church Historian's Library contains the richest extant collection of manuscripts and printed materials related to the Latter Day Saints. The Church's Genealogical Department Library, besides holding more than 150,000 volumes, has on microfilm one million reels of genealogical and historical data, chiefly from Britain and Western Europe.

Museums. Utah has many museums devoted to natural history, archaeology, and anthropology. The Natural History State Museum at Vernal features exhibits illustrating the geologic and fossil history of the area around Dinosaur National Monument. The Utah Museum of Natural History is maintained on the University of Utah campus. An agricultural history museum, Man and Bread, is maintained at Utah State University at Logan. The Fairview Museum of History and Art at Fairview features Indian and pioneer artifacts. At Lehi, the John Hutchings Museum of Natural History offers a varied archaeological collection. The Sons of Utah Pioneers maintain a Pioneer Village Museum at Laagoon, near Farmington.

The graphic arts are furthered by the Utah State Institute of Fine Arts, by exhibits in the capitol building and at the annual State Fair, and by the universities in the state. Museums exhibiting major collections of art include the Utah Museum of Fine Arts of the University of Utah, the Salt Lake Art Center, the Springville Museum of Art, and the Brigham City Museum-Gallery.

Musical Organizations. The most noted Utah musical group is the Mormon Tabernacle Choir, accompanied by the famed Tabernacle organ. The Utah Symphony, the Salt Lake Symphony Society, and the Salt Lake Oratorio Society have also received national recognition.

Press, Radio, and Television. Utah's first newspaper was the *Deseret News*, established in 1850. An opposition newspaper at its inception but the leading newspaper in the state today in terms of circulation, is the *Salt Lake Tribune*, established in 1870. Through the 1870's and 1880's most Utah communities had their own newspapers; even manuscript newspapers were issued. When paper was scarce, editors set up crude mills to convert rags into newsprint. About 600 newspapers have appeared at one time or another in Utah, most of them short-lived. In 1978 there were more than 50 newspapers published in Utah, 5 of which were dailies. The total circulation of the dailies was about 278,000. Utah's daily newspapers are the *Salt Lake Tribune* and the *Deseret News* (both with statewide circulation), the *Ogden Standard-Examiner*, the *Logan Herald Journal*, and the *Provo Herald*.

The state's first radio station, KZN (later KSL), began broadcasting on May 6, 1922, in Salt Lake City. The first television station, KTVU, began operating in Salt Lake City in 1948. In 1976 there were 51 commercial radio stations, including 16 FM stations, and 3 commercial television stations in the state.

Social Welfare. Responsibility for public welfare is shared by two bodies: the Church of Jesus Christ of Latter Day Saints and the state. From its inception the Mormon Church has shown special concern for the economic well-being of its members and until recently was the sole agency effecting major social welfare. The Church Welfare Program established in 1936 helps members to help themselves, rehabilitates them, and provides employment services.

State agencies responsible for social welfare include the state department of public health (1898), the juvenile court (1907), the state training school (1931), the public welfare commission (1936), and the state board on alcoholism (1947.) The public welfare commission has major responsibility for public assistance, welfare institutions, and services for children. The state department of social services provides services for the discovery and prevention of disease, assists crippled children, and conducts programs of maternal and child health and mental hygiene. It also conducts studies of sanitation problems, sewage and industrial