roads. A short narrow guage railroad runs from the place to Park City. Experiments go to show that it is of a non-coking character, and hence of little use in connection with the smelting of this Terrltory.

To the east in Wyoming are still further deposits of a similar lignitic character. South along the Wasatch, coal has been found in various places, and varying character, but owing to distance from railroad, in few places has much of anything been done.

Eighty to ninety miles south-east of this city, in and near San Pete Valley, a number of seams from six inches to six and a half feet in thickness, of excellent bituminous coal, has been found, while a little further to the east, among the mountains, others as wide as ten or eleven feet are being worked.

Already a narrow-guage road has been pushed up Spanish Fork, and this road makes them easily accessible. This coal yields a good quality of coke, which is being used at the furnaces in the Salt Lake valleys. Now it is delivered at the smelters much cheaper than can the Connellsville coke from Pennsylvania, and still yield a handsome profit. At the further beds mentioned, is a large number of coking ovens, turning out coke continually, of which a large stock is said to be on hand. Little need be said of the coal beds of Iron County, and those far south, some of which are twelve or more feet in thickness.

These and many others not mentioned, and but little known, often chance discoveries, prove the presence of coal throughout the Territory, and any future demand will be at once supplied, either from them or many others yet to be found.

The coal of Utah has a thickness of more than 200 feet, and lies along the eastern slope of the great Wasatch range, from the boundaries of Wyoming, through the Uintah Reservation, Pleasant Valley, on Huntington Creek, Castle Valley down to Kanab and Pahreah. There is splendid coal on Weber River and its tributaries, for ten to fifteen miles above Echo. We have thousands of square miles of good coal land, which is a splendid future for all of us and for the railroads.

In the Sanpete Valley, already mentioned, in the sandstones and conglomerates, with the coal, are beds of shale containing jet, ozocerite and almost enough oily matter to burn alone, while in the vicinity are springs, bringing to the surface considerable quantities of petroleum. Further to the north similar shales appear. In view of these facts, it is not improbable to suppose that oil will be found upon search being made, and Utah may yet supply at least her own markets.

SALT, GYPSUM AND SULPHUR.

Gypsum is abundant in Utah, the most notable beds being in San pete, above Cove Creek, on the Muddy and by Nephi. One vertical ledge is 100 feet wide. Fifteen or twenty miles below the railroad station at Salt Creek are seemingly inexhaustible quarries of salt and gypsum; the former yielding 90 per cent. of the pure article, are being steadily worked, and a number of tons daily are shipped to the Ontario mill for chloridizing purposes. Of this article the Territory can furnish almost any amount.

The northern part of Utah abounds in salt springs pouring into Great Salt Lake. The brine of Great Salt Lake is 11 per cent. solid matter averaging the lake, 85 per cent of which solid matter is salt. As evaporation continues, other salts separate from the common, leaving the manufactured article 97 fine. The sun makes thousands of tons every season. The price of the crude article is $5 per ton. Further to the south, along the flanks of volcanic upheavals, very extensive sulphur deposits have been unearthed. On these but little work has been done. They are awaiting further railroad facilities.

COPPER.

In the extreme north-western section of the country, within fifty miles of railroad, a copper district has been opened. The veins lying in micacious shale, associated with porphyry and varying from 5 to 20 feet in width, appear to carry almost all of the ores of copper, but mainly the oxide and glance, which yield sometimes as high as 50 per cent of the pure metal The mines are considerably developed and the prospects exceedingly good. There also appears copper in Copper Gulch, Sanfrancisco district, Cottonwood, Snake district, Red Butte Canyon, all over Beaver county, Bingham Canyon, Antelope Island, in the Great Salt Lake, in Tintic, (see description of that place) Uintah and in the granite range between Salt Lake and Ogden.

In view of the proximity to the railroads and the fine country in which they lie, these districts bid fair to become important ones. In the far south-eastern section of the Territory, not far from the Elk mountains, rich placer diggings are being opened. The Indians, who have been troublesome, have long prevented a fuller exploration of the eastern and south-eastern parts of the country, which are believed to be rich ones and well worthy of further attention.

IRON.

Iron ore is found more or less throughout the Territory, but notably in large quantities in certain places. Heretofore, its use has been comparatively limited, it being applied as a flux in the lead smelting business. To be sure, even in this line its use has been by no means inconsiderable, and the saving was great when the expensive ores from Rawlins, Wyoming, were replaced by others from Tintic; but still scarcely any attempt has been made to work it for its iron, and so, vast quantities of excellent ore remain unutilized. In the south-western part of the Territory, in Iron county, is a range of mountains containing *inexhaustible* quantities of a fine iron oxide, and within twenty-five miles there are large beds of coal. Their present remoteness from railroads renders them of but comparatively little value, but at the North where good iron, containing several per cent. of manganese is found; in view of the high freight rates from the East and the consequent high price of iron, its manufacture might at once be undertaken with profit. In Tintic, Beaver county and other places excellent iron ore is found.

The finding of such iron ore, as well as that of other metals unutilized, has often been through chance discoveries or through a search to supply a small local demand, but let there be once a demand and a chance for their future value at no distant day, and plenty more will be discovered throughout the Territory. People, especially those of limited experience and information, are slow to enter industries with which they are not familiar, and thus too many are content to wait for others to prove the value of great beds of copper, sulphur, iron, coal, salt, gypsum, veins of graphite, etc., before they undertake to avail themselves of them. An animus, such as is displayed in the search for the precious metals, would reveal such amounts of these as would astonish many at the resources of the Territory. All of these represent latent wealth, but awaiting the proper energy and development to become of real value. In the Salt Lake Museum there are samples of iron, chrome pigments, venetian red, chrome yellow, fire-proof paints, in fact, it is a store house of samples of Utah's productions.

SILVER, LEAD, BULLION.

Utah's great product is silver, lead, bullion, made from low grade ores at a close margin. The market lies at the East, where she has to compete with other ores and bullion. And when consideration is made that she has to ship her products over a thousand additional miles, paying a freight tariff therefor from four to six times that on the eartern roads, and then when we see her competition successful the conclusion as to her importance and value is at once drawn.

A high and exorbitant freight on the Pacific roads has acted in the past seriously against the interests of the country, especially at occasional temporary depressions of business, and the lead market in particular. Reduction of freight is what her citizens have a right to demand and expect.

Utah, comprising an area of 84,476 square miles, about equal to the New England States, contains a population of a little over 140,000 Mormons, and about 40,000 Gentiles. The former are generally an industrious and simple people, engaged in agriculture, grazing and so forth. The bulk of them are foreigners, unacquainted with our institutions and easily controlled by their leaders. Their settlements lie scattered throughout the Territory, at the mouths of the canyons and on the borders of streams and springs, where, by irrigation, over 150,000 acres of land have been redeemed. From this class must come much of the labor for the future development of the resources of the Territory.

From the character of the ores, smelting has been the usual method of treatment, and great is the improvement made of late years in that line of metallurgy. In the fine furnaces of the present day, furnished with the best machinery, supplied with the best talent, and turning out tons of fine bullion made from low grade ores, one would scarcely recognize the outgrowth of but a few years back, of the inferior little stacks reducing at enormous loss and great cost a few tons of rich ore.

The present furnaces are the finest in the country, using all the modern improvements, water jackets, excellent blowing machinery, and reduce from twenty to 160 tons each of ore a day. As only the best and most effective can live now, the old and small stacks are being replaced by new and larger ones, using all the modern improvements for economy. At present there are a dozen establishments using twenty-five stacks, in the operation of which turn out over 1,500 tons of bullion per month.

Following is a Statement of Bullion, Lead, Copper and Ore output from the Territory (Park City not included), for the year 1883:

Months.	Bullion,	Lead,	Copper and White Lead and Copper Matte.	Lead Pipe.	Ore.	Totals.
January	5,007,677	602,704	231,206	.....	.....	6,501,760
February	4,358,095	80,720	280,670	.....	.....	4,706,885
March	3,701,858	95,592	329,460	.....	46,840	4,283,177
April	4,362,407	23,076	148,410	41,000	21,000	4,597,893
May	5,049,854	.....	.....	74,415	816,035	5,940,304
June	4,389,693	.....	147,240	21,600	1,341,090	5,897,623
July	4,477,218	.....	.....	64,697	2,896,043	7,437,960
August	3,697,283	.....	.....	49,969	3,362,435	7,109,687
September	5,114,194	.....	.....	95,110	3,976,980	9,186,284
October	5,892,048	.....	.....	115,152	1,975,670	7,940,804
November	6,901,265	.....	.....	128,077	2,430,900	9,460,242
December	5,188,750	.....	.....	150,000	3,501,989	8,840,739
Totals	58,513,349	1,104,708	1,242,985	7,919,918	20,370,133	81,971,123

SMELTING AND REDUCTION WORKS OF UTAH.

The Germania is the most systematically run smelter in Utah, second to none. It is situated in South Cottonwood, seven miles from Salt Lake City, on the Utah Central and Denver & Rio Grande Railroads. The smelting works consist of four shaft and one reverberatory furnaces. The furnace fumes are conducted from the stacks in tight iron flues, 6x3½ feet to a large tight dust chamber 25x35 feet and thence by a flue 300 feet long to a stack 108 feet high. In addition, the works comprise everything necessary to produce fine silver bars, litharge and all kinds of lead, common, refined, white, sheet, pipe, shot and test lead. The latter is chemically pure. The four stacks have a daily capacity of 180 tons. Refining capacity 40 tons. White lead capacity 10 tons daily and everything else in proportion.

Francklyn smelting works are situated one mile north of the Germania. They consist of five shaft and one reverberatory furnace, capacity of 250 tons daily. Those works are with the Germania considered the best in the country, second to none.

The Park City smelter is situated at Park City, Uintah district, and consists of two shafts and one reverberatory furnace; capacity 60 tons.

Waterman smelting works, situated at Rush Lake near Stockton. They contain two shaft furnaces connected with a very efficient condensation chamber. The furnace is a round one having at the tuyers a diameter of three feet and four inches. Height from bottom of hearth to slag spout twenty-two inches, to centre of tuyers thirty-three inches, from tuyers to charge door eleven feet. There are four water tuyers with three-inch nozzles. The furnaces are nine feet high from the slag top to the charging. Their size is 30x40 inches in the hearth; above they are widened by means of a flat bosh to 4x4 feet.

Winnemuck smelting works are situated in Bingham canyon, on the terminus of the Bingham Canyon railroad. They have two reverberatory furnaces, a 60 horse power steam engine and boiler; one No. 4 and two No. 5 Root blowers; eight roasting stalls, roasting kilns and one dust chamber of iron.

Jordan smelting works are situated next to the Sheridan Hill smelting works. They have five shafts and one reverberatory furnace.

The Hanauer Smelting Works are situated about one mile north of the Germania. They have two shaft and two reverberatory furnaces.

The Mingo Smelting Works are situated at Sandy, on the Utah Central and Denver & Rio Grande Railroads. They have four shaft furnaces.

The Flagstaff Smelting Works are situated at Sandy. They have four shaft and one reverberatory furnaces, water jacketed furnaces are used.

The Pascoe Smelter is situated at the north-west side of Salt Lake City and has one shaft furnace.

In San Francisco District are four smelting works. The Godbe smelter with two shaft furnaces; the Campbell and Cullen smelter, with three shaft furnaces; the Williams smelter, with one shaft furnace; the Shauntie smelter, with one shaft furnace.

In American Fork Canyon is the Sultana smelter, with twenty charcoal kilns, owned by the Miller Mine and Smelting Company; this smelter has three shaft and one reverberatory furnaces. The shaft furnaces are of the Plity pattern, nine feet above the tuyeres. The section of the hearth No. 1 is twenty by thirty-six inches. It has six water tuyeres, with two and one-half inch nozzles.

The size of No. 2 and 3 in the hearth is twenty-four by thirty-two inches. They have four tuyeres each. All the furnaces are provided with the automatic tap.

Next to the smelters are the sampling works; capacity 200 tons daily, owned by J. C. Conklin; Pioneer Sampling Works, owned by R. Mackintosh; Sandy Sampling Works, owned by Messrs Scott & Anderson.

PROMINENT PEOPLE.

William M. Evarts has made $500,000 out of his law practice.

Mrs. Tom Thumb is posing in a museum at Chicago. She looks charming in widow's weeds.

Meissonier, the French artist, is painting a picture for Mr. Vanderbilt, to cost £40.000.

Simon Cameron will be eighty-six years old next March. He has been nearly sixty-five years in politics.

James G. Blaine's son James has now been expelled from college three times—each time from a different college.

Ex-Senator Conkling is credited with a desire to become a possessor of $500,000 and then retire to private life.

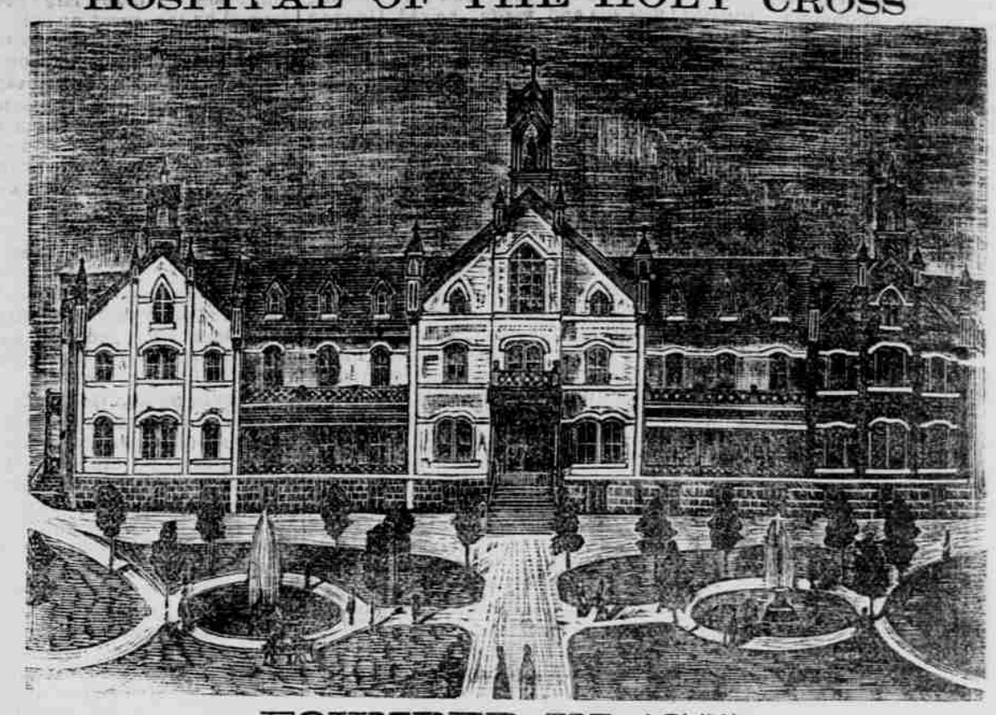
James Gordon Bennett is said to have become "prematurely old." His hair is turning gray, and he is as slow and precise in his movements as an old man.

Mr. Huntington, the railroad millionaire, is put down as worth $50,000,000. He is 65 years old, and has no family of his own blood. An adopted daughter is the sole heiress.

A mountain lion, weighing nearly 200 pounds, was killed on Powder river, a few days ago, by Albert Hacket.

Jay Gould is to be fined for non-attendance as a juror. Mr. Gould was probably spending the day at his tomb.

HOSPITAL OF THE HOLY CROSS



FOUNDED IN 1875.

The above cut of the Hospital of the Holy Cross will give many of our readers who have not had an opportunity of inspecting the building itself, an idea of what a beautiful structure it is.

LOCATION.—The building, which was erected in 1881, stands on a ten-acre block in the northeast part of the city and on the line of the Eleventh Ward and Denver & Rio Grande street cars. From the elevation on which it stands and the view which it commands of the Salt Lake valley and the lake, it is not only a healthy but a most desirable place for such an institution.

DIMENSIONS.—The building measures 164 x 65 feet; has three stories with a basement.

DESCRIPTION.—In the exterior of the building everything that would add to its beauty was embodied in the plan. The engraving shows in the front of the building three projections which break the sameness in so long a structure. The roof, which is partly mansard in its style, has in the centre, over the main gable, a large tower surmounted by a cross. On either side are cupolas which correspond in size and design with the centre tower. All the projections are finished with turrets which number twenty, all of which enhance its exterior beauty.

INTERIOR.—The inside of the building was planned in accordance with most approved modern ideas of hospitals. The attending physicians were consulted in everything that appertained to health in such an institution; not only the best means of ventilating and disinfecting, but the number of cubic feet of air necessary for each patient, together with the best arrangements for the preservation of order and cleanliness, which are so conducive to good health, were all duly considered before any room or ward was marked out in the interior plan.

PRIVATE ROOMS.—In connection with the Hospital, the management wished to combine a sufficient number of private rooms, entirely separate from the wards, to accommodate patients who may feel a repugnance to hospital wards and yet wish to be under the care of skillful and experienced physicians and competent nurses.

This admirable idea has been so successfully carried out that visitors entering the main auditorium, and thence to the spacious hall which runs the length of the first floor, can scarcely realize to themselves for the first time that they are in an hospital. On either side of the hall are rooms which vary in size from 14x16 feet to 14x24. Each room is furnished with a large wrought iron bedstead surmounted by massive brass knobs, a three-ply wire mattress, a lounge, an armchair, bureau, wash stand and small table. Each room is supplied with steam, and the patient, with a steam register and thermometer hanging on the wall, can regulate the temperature of his room.

LADIES' DEPARTMENT.—The east wing of the first floor which is separated by large doors, is set apart for lady patients. In this department is one large ward with a number of rooms neatly fitted up for lady patients, who may desire rest, medical treatment and a home combined.

SECOND FLOOR.—From the centre of the first floor a wide and easy stairway leads to the second floor. The landing is on the large hall which corresponds with that of the first floor. At right angles to this hall and leading to the centre gable is another equally wide but much shorter hall, lighted up by three large windows which command a view as far south as the eye can reach. On the south side of the main hall are a number of private rooms fitted up similar to those already described. A large reading room, and a ward for typhoid patients fill up the north end of the hall. On either end of the large hall, are two large doors which lead into the principal wards. The convalescent ward on the east end measures 28 x 65 feet; has twenty iron bedsteads with three-ply wire mattress placed in two single rows, and so far removed from the walls as to allow sufficient space to walk around the bed and attend to the patient's wants from whatever quarter relief will be most desirable. On the west side, for surgical patients, is a ward correspondingly large, but which is partitioned off into a large room for the patients and a smaller room which has been used as an operating room. This last room was deemed an essential appendage to the building, as every week one or more have been operated upon. The operating room is well lighted and furnished with all the requisites for a first-class operating room.

BASEMENT.—The basement corresponds with the two upper floors in every respect except the height of ceiling, which is ten feet, whilst that of the upper floors is thirteen feet. It is used for culinary purposes, has a large boiler room, which furnishes steam throughout the entire building, has three dining rooms, a workshop, storerooms, etc.

BATH TUBS AND WATER CLOSETS.—On the first and second floors are four porcelain-lined bath tubs with an abundant supply of hot and cold water, and six of the most approved patented water closets.

GROUNDS.—The grounds have been tastefully laid out in circular, diagonal and triangular plats which will in time present an attractive appearance. Two rows of trees on either side of the fence which encloses the block, together with several hundred trees which have been planted through the grounds, will not only add to the beauty of the place, but will in the course of a few years serve as a shade to convalescent patients when sauntering through the grounds.

GOOD WORKS.—Since the Hospital of the Holy Cross was founded in 1875, and opened its doors in 5th East Street to suffering humanity, the names of 3,328 patients have been enrolled on its books. Of these, 473 were charity patients, 50 were buried by the Hospital, 397 were female patients, the rest male.

TABLE OF CASES.—The following is a partial list of cases treated at the Hospital: Abcesses, aural, 3; abcesses, palmar, 2; abcesses, psoas, 4; alcoholism, 17; amputation, feet, 3, fingers 12, shoulder 4, leg 7; aneurism, 3; asthma, 2; burns, 17; cancers, 5; consumption, 66; colds, 60; contusion of head 8, knee 5, side 3, thigh 5; debility, 42; diarrhoea, 4; diphtheria, 14; dislocations, 116; dysentery, 9; dropsy, 11; dyspepsia, 21; epilepsy, 7; erysipelas, 33; fever, typhoid 187, intermittent, 41, brain 5, scarlet 4; fractures, 13; frosted, 21; heart disease, 10; hysteria, 2; lung congestion, 3; paralysis, 11: pleurisy, 2; lead poisoning, 2,172; pneumonia, 60; rheumatism, acute 85, chronic 71, sub-acute 17; scalds, 7; scrofulosis, 5; sprains, 17; sore eyes, 55; sore throat, 24; sore feet, 19; sore mouth, 5; sore head, 13; tumor, 9; ulcer of foot, 8, leg 5, shoulder 1; wounds, abdomen 2, lockjaw 1, jaw 1, knee joint 1.

During the past year 856 patients were admitted. Of these, 73 were charity patients; 520 were treated for lead poison, and 65 for typhoid fever; no deaths! There were 12 amputations and 16 cases of consumption; 3 of the latter died. Some of the most delicate surgical operations known to the profession were performed successfully here in the past year. Tracheotomy for foreign body in windpipe, 3 lacerated perineum, all cured; ovariotomy, two cases, one cured; one ablation of left upper extremity, died from opium habit; one visera vaginal fistula, left before well; two trephining, one died; one resiction of bones of leg, still in Hospital; one resiction in elbow joint for gunshot fracture, cured; one resiction of shoulder joint, cured; one lockjaw gunshot injury, cured; one gunshot wound of abdomen, died; one gunshot wound of jaw and throat, still in Hospital; one gunshot wound in thigh, died; three railroad injuries, two cured; one gunshot wound of knee joint, cured; one ablation of upper extremity for cancerous trouble, cured; one abcess of gall bladder, cured; one traumatic disease of knee, from a needle, died; five cases of hydrocele, all cured; one case piles cured; one case cut throat, cured; two cases extirpation of eye, cured: one double amputation leg and thigh, still in the Hospital.

The surgeons of the Hospital are Drs. Benedict and Pike; the physician, Dr. Fowler. Consultations on critical cases include the medical staff.

The favorable results accompanying the treatment of lead poisoning and typhoid fever during the last year, not one in 585 cases having died, together with the many successful surgical operations, make the Hospital of the Holy Cross, as a home for the sick and injured, second to none in America.

THE DESERET HOSPITAL.

In May, 1881, an association of ladies was formed in this city for the express purpose of establishing a hospital for the sick and injured, where they might receive the best medical care and nursing, and the attention of physicians skilled in the science of medicine. The officers of the association consist of a president, E. R. Snow Smith; vice president, Zina D. H. Young; secretary, Emmeline B. Wells, and treasurer Mrs. M. M. Barrett; an executive board of nine, and a committee on ways and means. The officers and executive board manage all the financial affairs of the institution.

The building known as the Deseret Hospital is situated in the Twelfth Ward in this city, and was previously occupied by the Sisters of the Holy Cross Hospital. The house was dedicated by President John Taylor and his counselors for an invalids' home on the 17th of July, 1881, and then opened for the admission of patients. Dr. Ellen B. Ferguson was installed as resident surgeon, and Drs. W. F. Anderson S. B. Young and R. B. Pratt as visiting surgeons, etc. Subsequently a change was made in the medical department, and Miss Mattie Paul Hughes succeeded Dr. Ferguson as resident surgeon, and has occupied the position since October, 1882. Dr. Anderson, a well known as an experienced and careful surgeon, attends as the regular visiting physician, assisting and directing Miss Hughes, who though quite a young lady, is very competent in the profession and a skillful practitioner. Drs. R. B. Pratt, E. R. Shipp and E. S. Barney are also visiting physicians. The surgery is well supplied with everything necessary for the performance of surgical operations. The instruments are the best that could be purchased in New York. The house will accommodate between thirty and forty patients, though the average number thus far has been about sixteen.

Up to the present time the fees from patients have only been about one-fifth of the entire expense of the treatment. The wards are well supplied with every comfort necessary, and the modern conveniences and furnishings that are so well adapted to the sick room. In fact, it is more like a home than a hospital. Prayers are held regularly morning and evening, and on Sunday services of the Church of Jesus Christ of Latter-day Saints are held there, and the sacrament administered to all in the house who are members of the church. These meetings are under the direct supervision of the bishop of the ward, who appoints the elders to preside over the meetings from time to time.

The members of the Deseret Hospital Association are expected to pay an annual subscription of one dollar each, and each branch of the Relief Society one dollar per month, and also the Y. L. and Y. M. Associations towards defraying the expenses of the institution.

Free donations have been given from time to time by individuals and several concerts and entertainments have given their proceeds to the Hospital. The Unity Club have been exceedingly liberal in this respect and the Ladies' Bazar held in the Social Hall contributed over a thousand dollars.

The various societies and associations of the sisters have been most liberal in supplying the hospital with bedding, quilts, etc., and many other useful things.

The great need of the association is a building of its own suitable to the requirements of such an institution; whereas now a heavy rent, in addition to other necessary expenses, places the ladies who manage it at a great disadvantage.

Information Wanted.

Information regarding Agnes Miller, who emigrated from Glasgow to Utah upwards of twenty years ago. Address her sister, Janet Miller, (or Fogo) 184 McLean street, Plantation, Glasgow, Scotland, who will be glad to hear from her.

Robert Newton, 227 Shaw Road, Oldham, Lancashire, England, wishes to learn the address of Martha Alice and Hannah Nield, daughters of Joseph Nield, late of Albert Mount, Oldham. They emigrated to Utah with a Mr B. Goddard.

News of the present whereabouts of Mary Gray, who emigrated to Utah from Tredegar in the year 1874. Address William Williams, 33 Picton St., Tredegar, Monmouthshire, Great Britain. — *Millennial Star.*