



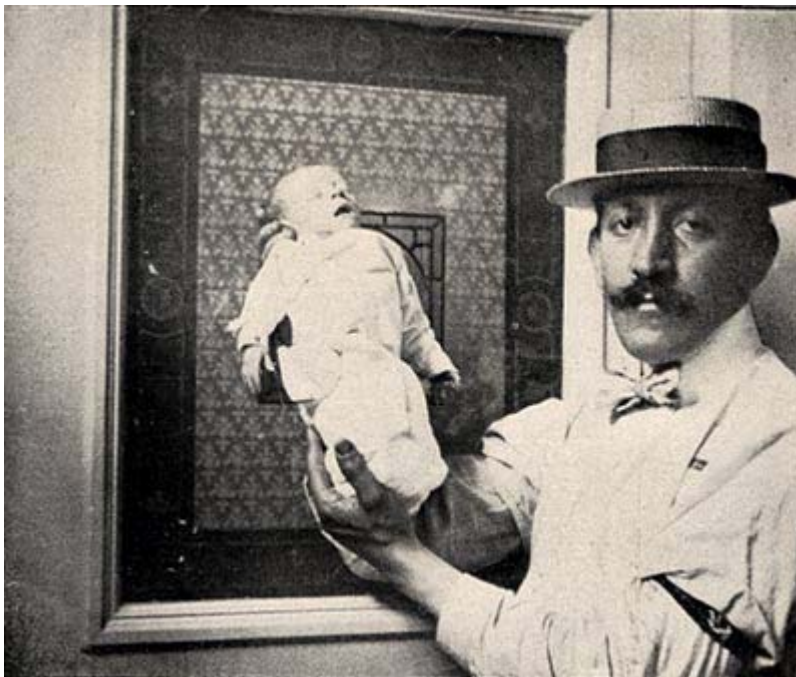
The Infant Incubator



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Unknown man holding one of the premature infants

Infant Incubators were invented around 30 years prior to the Pan-American Exposition but were still not widely used by the medical community in hospitals or clinics. It was recognized that the survival of prematurely born infants of around 7 months' gestation depended on keeping the infant uniformly warm, feeding it frequently, and keeping it free of disease. This was the goal of the designers of infant incubators. Proponents claimed that the survival rate of infants born 2 month's prematurely and cared for in an incubator were 85 percent.

The Infant Incubator was out of place on the Exposition because it was not an entertainment so much as an educational demonstration of the most modern method of caring for premature infants. The location of the building away from the more serious side of the Exposition irritated Dr. Martin A. Couney (aka the man who managed the Incubator and who had brought it from the 1900 Paris Exhibition (where it had been assigned to the entertainment district).

The exhibit was housed in its own two-story building. On the ground floor were the public display of the incubators and also a nursery where the infants who had 'graduated' from the incubator were kept home. Both areas were on display to the public for 25 cents (\$5.00 in 2001) to stroll around within the boundaries created by railings.

The Qbata Company provided the incubator which was designed by German inventor Paul Altman. It consisted of 12 incubators, each with its own temperature-controlled environment and filter supply. The means of maintaining the appropriate temperature inside the steel and glass cases was alternating water heated over Bunson burner; cool water, the action of which was controlled automatically by a thermostat. The managers were able to continuously maintain the temperature within 2 degrees Fahrenheit of the optimum.

The infants were fed and diapers changed every 4 hours after they were sent to the building's second story by a basket 'elevator'. The second story was used as a dormitory by the nurses.

Prematurely-born infant candidates for the Infant Incubator exhibit were solicited from the surrounding geographic area. At one time in August there were 100 infants being tended to. The exhibit was very profitable, made \$25,000 profit (\$500,000 in 2001) over the months of the Exposition.

After the Exposition closed, The Children's Hospital of Buffalo (opened 1892) purchased the Altman incubator.

incubators.

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The Infant Incubator

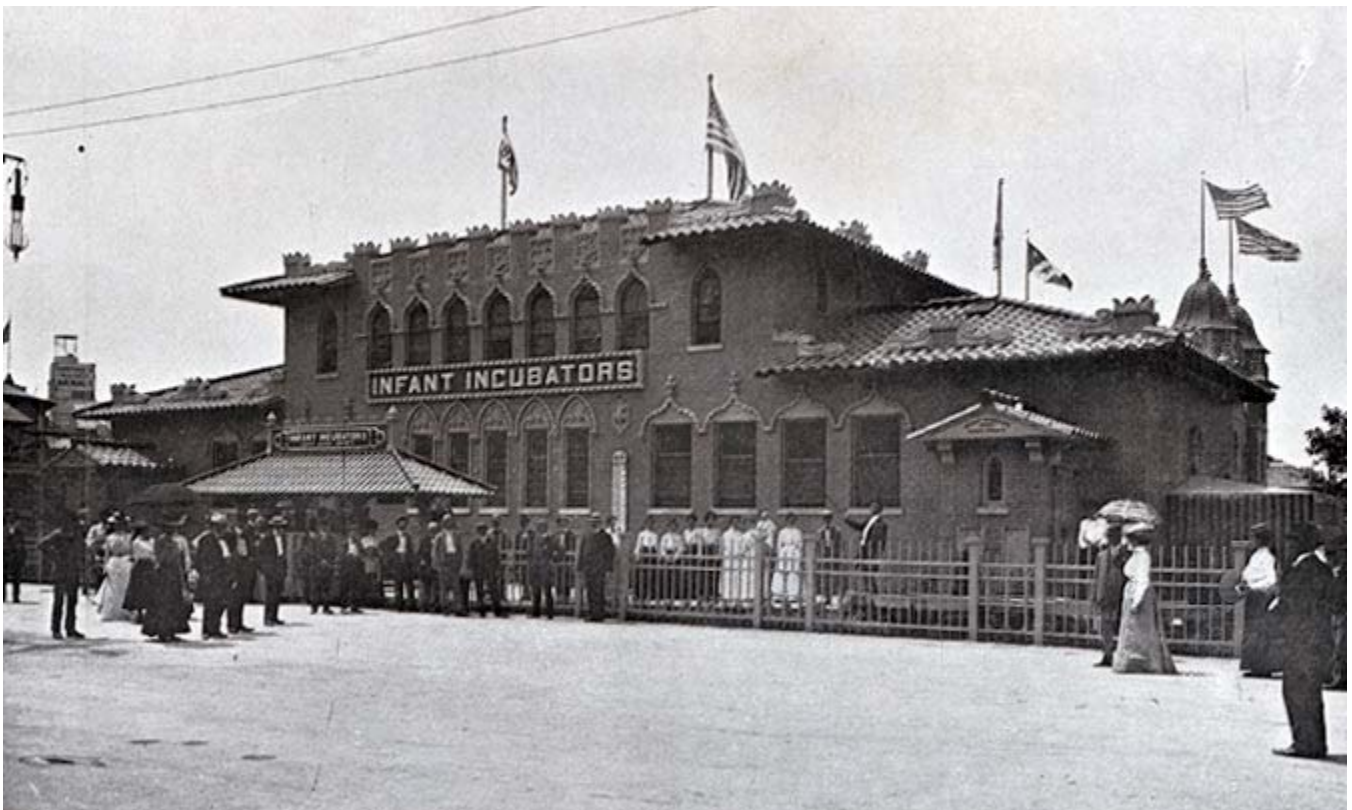


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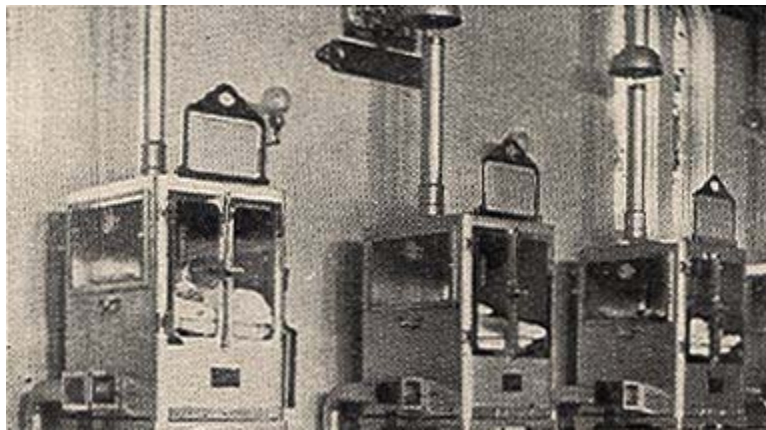
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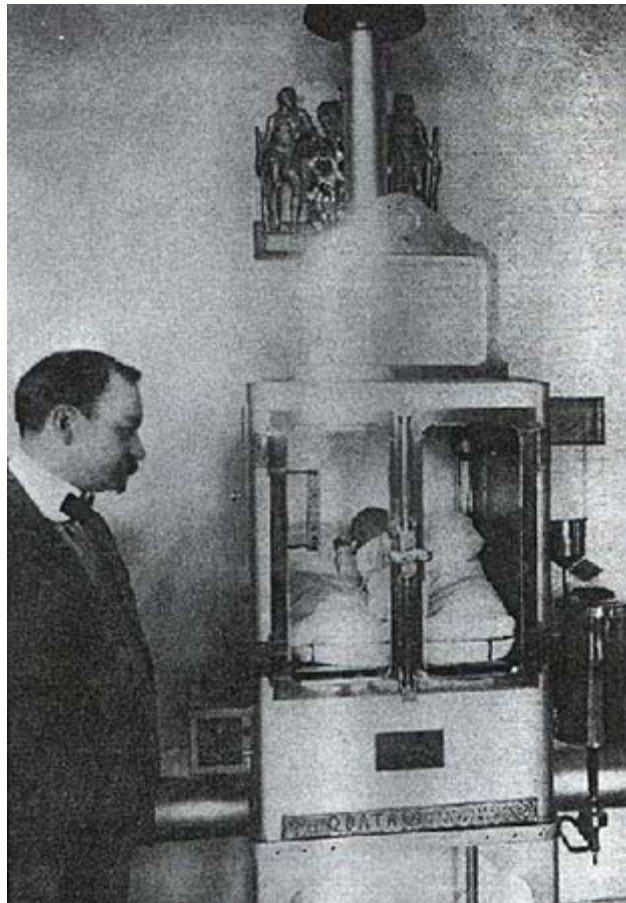
The exterior of the brick two-story building.



The incubator area, showing the railings which kept the public away from the incubators and out of the way of the nurses.



Each incubator had a chart affixed on top which showed the vital statistics of the infant within. But it did not display the infant's full name, as a privacy protection measure.



The infants, swaddled snugly in the 'German' fashion, were suspended in a padded wire basket bed.



View of the nursery area on the first floor.



Another view of the nursery area showing the basket 'elevator.'



Posed picture of nurses with infants that have 'graduated' from the incubator.



Posing with the infants are nurses especially trained in caring for incubator babies.

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[Twelve at the Exposition](#) - Buffalo Express, June 12, 1901

[Three Tiny Girls in the Incubator](#) - Buffalo Evening News, July 17, 1902

[Some Medical Aspects of the Pan-American Exposition](#) - Buffalo Medical Journal, August, 1901

[Twin Boys Come to Buffalo](#) - Buffalo Evening News August 2, 1901

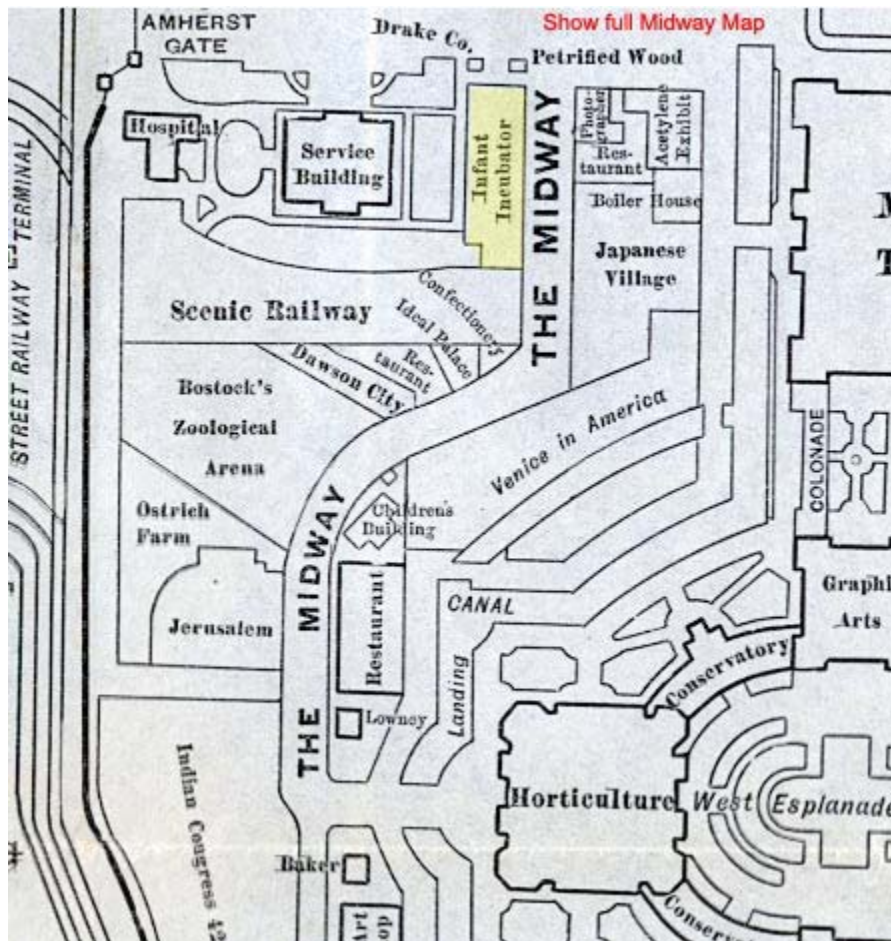
[The Incubator Baby and Niagara Falls](#) - Arthur Brisbane, September 1901 Cosmopolitan Magazine (Takes you out of this site)

[Baby Incubators at the Pan-American Exposition](#) - Scientific American, August 3, 1901 (Takes you out of this site)

[Exhibit of Infant Incubators at the Pan-American Exposition](#) - Pediatrics, volume 12, 1901 (Takes you out of this site)

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Location of The Infant Incubator - South Midway



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The Incubator Baby and Niagara Falls *

By Arthur Brisbane

[This article appeared in *Cosmopolitan*, vol. 31, no. 5 (September 1901), pp. 509-516.
The text is reproduced here in full.]

Men go to the Exposition at Buffalo to see and to think.

Two features of the Exposition well worth seeing and thinking about are chosen for discussion here:

Two vast extremes.

The weakest and the most powerful manifestation of nature's power.

The falls of Niagara, with the great system of lakes and rivers behind them.

The diminutive baby in its hot-air chamber, sightless, deaf, feeble-but with the great human race, the vast sea of organized thought, back of it.

All the world reveres the power and beauty of the falls. Men stand in the spray on the high banks, as the rainbows form and the green water sweeps over with millions of horse-power. Eighteen million cubic feet of water every minute, dashing down to carve out the solid rock. There is power marvelously manifested.

But what is that power beside the force that may originate in the tiny brain of an incubator baby?

The brain is smaller now than half of an apple. But that brain may start a work that will persist, and affect men's destiny, when the falls, working their own ruin, shall have dwindled down to an even, placid stream without so much as a ruffling of the water to tell

where once the great power rushed by.

Look at the falls and look at the baby.

A mighty river flows swiftly and quietly until suddenly it drops into space over a ledge of solid rock one hundred and sixty-four feet high. There is dull thunder in the air, a roaring that has not ceased for ages upon ages. The mind cannot conceive the force of that torrent. Like so many chips it would wash away every vestige of the great Exposition and every building in the city of Buffalo.

But, if you will see it, there is more to interest in the little form behind the incubator glass than in all the roaring and power of "the Thunder of Waters."

The difference between the force of the Niagara River and that of the newborn baby is this: One, the river, represents material force, the mere force of gravity. The child's brain represents spiritual force, the power of organization and of speculation. The power sent here in fragile human forms to rule the falls, and other manifestations of crude power, regulate nature and do the work of embellishing and cultivating the globe.

Have you ever seen a baby in an incubator? Look at one now.

Through a thick plate of glass you see a tiny form arrayed in spotless linen. Blue ribbons indicate elbows and knees. The tiny human being lies on a soft cushion, under its head a pillow as big as a man's hand. It is pathetically short and mysteriously still. The head is small, the face pink and tranquil, with the solemn tranquillity of peaceful old age. The hands are so small that a beetle might almost wear them for claws. They are gently closed. The baby is supremely happy and comfortable, with the happiness that knows no want, feels and craves nothing. That incubator baby begins earthly life in the blissful state of Nirvana, for which the Buddhist struggles through existence.

The typical American mind, ever suspicious, watches the little creature with growing doubt. Is it a real baby, or a wax one put there to deceive the public? The nose, in size and shape like a small huckleberry, gives faint promise of future character. It draws in the heated air so softly that breathing is invisible. Perhaps long watching shows the waxen fingers open and close, very slowly. That means that a revolution is approaching in that small human world. The baby wants to be fed, and soon you will realize that he is alive. His face is drawn into odd shapes. A feeble wrinkle, inherited from some ancient relative, appears above the eyes. The eyes are tightened into knots, the hands are jerked up over the stomach-sole seat of serious sensation-and a mewling sort of cry tells the watchful nurse that feeding-time has come.

He is moved from his nest of heated air, carefully wrapped in woolen coverings. He is weighed, fed as nature intended he should be fed, weighed again and put back to resume

his interrupted, sleepy contemplation of the infinite. If he does not weigh enough, he is persuaded in various ways to absorb more nourishment. His life is regulated, and, unlike older mortals, he is contented that it should be regulated. Hot air, cleanliness, a soft bed and good food satisfy him.

Of all minds, a vast majority are more deeply impressed, of course, by the falls of Niagara than by any baby, however interestingly presented.

We are used to babies, and a majority of us see but little in them at best.

In Niagara Falls the human mind sees almost as many different interesting possibilities as there are different sorts of human beings.

The scientist looks at the great force going to waste. He says, "I'll harness it." And he does. His harness attached to the cataract now lights the distant city and drives machinery many miles away.

The adventurous creature with dull imagination sees only danger and a chance for possible personal achievement by taking the risk. He says, "I'll go over the falls myself." And he does go over in a barrel, to meet his death or to sit proudly in a dime museum the rest of his days.

The astronomer, looking at the earth as a tiny speck in space, sees in human admiration of the falls only interesting proof of our infinite human littleness. He wonders that any man should study Niagara Falls when he might study comets traveling hundreds of miles per second with streaming tails of fire millions of miles long.

The bride and groom, full to the brim with the little emotion which constitutes their world, see in Niagara Falls only a suitable background for a photograph. The groom slaps his chest and says, "Our love is as strong as the cataract." He forgets that, like the cataract, his love will recede, presumably.

The student of social problems finds suggestion and even ground for indignation in the study of the falls.

The earnest single-taxer knows that the government has been compelled to pay vast sums in order to establish national parks near the cataract. He knows that the falls are receding every year. It occurs to him that a speculative millionaire might buy up both banks of the Niagara River two miles above the falls and leave to his heirs absolute control of the cataract in the future. It maddens this single-taxer to think that this small investment now would enable the heirs of the plutocrat later on to own every foot of Niagara Falls real estate and compel the government to pay ruinous prices once more for park space.

There is theoretical logic in the single-taxer's views and in his anger. The cataract does recede. It recedes one foot every year on an average. If a man bought both sides of the river two miles above the falls, he would control all the cataract real estate in exactly ten thousand five hundred and sixty years from now. It would take that length of time for the cataract to move back two miles, so that the plutocrat's heirs would need to be very patient and pay taxes for a long time. Incidentally, by the time it shall have receded two miles the cataract will, according to scientists, be reduced in height to eighty feet and will hardly be worth seeing.

It is probable that in that distant day the troubles of the single-taxer will have been adjusted even to his satisfaction, as a natural process of civilization. It is certain that at that time men will read with amusement of the primitive days when their fellows harnessed up a petty waterfall in order to move their engines.

In that far-off time the problem of conveying the strength of a waterfall a few miles away will appear as childish as the invention of the wheelbarrow seems to us now. Tides will long since have been harnessed. The brains then living on this big driving-wheel called the Earth will have learned to utilize the forces in the great machine on which they revolve daily.

Intellects are now struggling with the problem of abstracting electric force from coal direct. They will then be thinking of the problem of utilizing direct the sun's energy, or the power of gravity in our satellite donkey-engine, the moon.

But this has led us from our small, tiny-faced friends in the rows of incubators.

All kinds of little human dynamos lie in those hot-air boxes.

One with a few spears of red hair and a very determined expression at feeding-time is of pure Irish stock. If his emotions could be translated into coherent speech, he would undoubtedly express a desire to challenge any baby of his weight in Incubator Row. The nurses declare that he tries to fight them, although he weighs less than five pounds.

Another, of whom, perhaps, more later, is of German blood. In spite of his youth, he is distinctly philosophical. It is easy to imagine that he devotes hours of speculation to a nearby shed in the Exposition where scientists are experimenting with different breeds of cows, testing their good qualities with various kinds of food, and especially their availability for nourishing motherless infants.

Side by side are three little creatures whose relationship is recognized at a glance. These are the Cohen triplets, taken by their careful father and mother to the home where the best chance for development will be given them.

Possibly you would envy the man who would own the falls of Niagara. But you would envy

much more wisely him who shall possess for his own the possibilities of development wrapped up in those little Cohen triplets. You would possess the possibility of wealth beyond the dreams of avarice, as Doctor Johnson prophetically said when auctioning off the Bass' ale brewery. And you would possess, also, possibilities of power, intellectual and artistic, beyond the dreams of human ambition.

One triplet with the right start, education and incentive might give you the wealth of a Rothschild and enable you to buy, without feeling the outlay, all the power of the falls and the land for miles around. Another might give you the genius of a Heine or the admirable moral purpose of a Spinoza, more desirable than all the money that all the Rothachilds ever dreamed of. The third might contribute to your powers and to the world a Hersehel in astronomy, a Mendelssohn in music, or a genius like that of Bernhardt in the art of interpreting genius.

Those three little creatures lie in their nests of warm air, quiet and dull, waiting for the feeding-hour. They are frail, insignificant little atoms compared with the great torrent that roars and rocks the ground a few miles away from them. But any one of those three small heads might develop a force far superior to that of many Niagaras.

When you go to the Exposition at Buffalo, you are sure to visit the falls without advising. Be advised here to devote to the babies in their incubator at least as much thought, if not as much time, as to the giant waterfall. In the evening, when you come out of the incubator building, you will find the Exposition lighted with wonderful effect by the invisible power generated at the falls and brought through wires to the little glass bulbs.

Towers of light, avenues of light, arches and fountains of light, dazzle you with their glitter and glare. Nothing, you think, could be more impressive-until you look above and see, afar off in the dark, one single star that makes all the lighting of that little corner of the earth seem like the flickering of a few fireflies fluttering about in the face of eternity.

The power of Niagara lights those lamps and floods the Exposition with brilliancy. But in the brain of an infant is born the power that lights civilization, that lights the path of men or their journey toward a decent social order.

We can measure and limit the power that thunders at Niagara. We know that it is indestructible; that we may at will utilize it as heat, motion, light, electricity. But who can measure or limit, or understand the power that is in the human brain? That power also is indestructible. It bestows immortality on all who think. It involves the marvelous combination of comparison, observation, induction, deduction. It is the force that rules the world, studies and gradually understands the universe.

Of that wonderful power of thought the seed is planted in every infant brain. And for that reason the incubator baby, silent, unimpressive, insignificant apparently, deserves to rank ir

importance with the falls of Niagara when nature's wonders are studied intelligently.

P.S.-A LESSON FOR MOTHERS

The baby in the incubator is born into a world of trials and troubles before his appointed time. For that reason science provides for him in the incubator a home as like as possible in temperature and other conditions to that which he has hurriedly abandoned.

One incubator baby of German parentage was studied by this writer. There is a lesson for mothers in that German baby, as there is in every incubator baby, amid it shall be told.

The German baby hurried into the world almost three months ahead of time. He weighed three pounds, and doubled his weight in six weeks. His heart was about as big as the end of your thumb, and his liver-as in all newborn babies-was monstrously large, nearly as big as that of a child of ten. If you want to admire nature's wisdom, study the newborn baby's liver, with its changed position in the body and its wonderful adaptation to a milk diet.

That little German infant, like all babies born too soon, presented an aspect of extreme old age. It was one mass of wrinkles all over its body. Nature does not waste effort. The baby unborn has no need of adipose tissue, and the tissues of the body, intended to act as cushions, protecting us from the outside material world, are provided only just before birth.

He arrived quite bald, toothless of course, with wrinkled skin and an aspect of unbelievable solemnity. No man one hundred and twenty-five years of age ever appeared one-half as ancient.

HERE IS THE LESSON FOR MOTHERS

The baby did so well at the end of six weeks that its mother insisted on removing it from the artificial nest. It was well cared for by a mother of at least average intelligence. But it failed rapidly, and would have died soon had it not been put back in its shelter.

It suffered, not merely through irregularities of temperature, but through brain fatigue.

Mothers would do well to remember that the chief thing in caring for a baby is to keep its brain quiet. An agitated infantile brain exhausts the blood-supply, takes heat from the stomach, where it should be, to the brain, where it does harm, and kills off millions of children. This particular baby was not agitated mentally by the usual processes of forcing intelligence. He paid attention to nobody.

But removed from his incubator his brain was forced to work, in order to regulate

temperature. Every human brain contains among its millions of distinct parts a mechanism which devotes its energies to dealing with conditions of heat and cold. This thermotic apparatus causes closing of the pores, when sudden cold strikes the body, and regulates in other ways our physical ability to undergo changes of temperature. So, at least, said the wise doctor that cared for the German baby. This feeble effort of one tiny brain function was sufficient to diminish the baby's vitality and menace his life.

Mothers blessed with healthy children normally born should learn from the German baby's narrow escape to let their children's minds rest as long as possible, while the body gets its start. Nature sets the example by making the baby deaf for a long time after birth. Mothers and nurses often do not know even this.

To-day the German baby is doing well. It is as heavy as its competitors on the block and will live to do its share of the world's hard work. It will do infinite good, should the story of its advent here below impress upon mothers the fact that building up the baby's body involves keeping its brain quiet.



*** MY DEAR MR. WALKER:**

To describe adequately the Exposition at Buffalo would mean to review the history of the world in general and the development of this continent in particular.

A preliminary feature of such a task would be a description of this land's transition from a home of many bison and a few savages, to a nation of many savages and a little preliminary civilization.

According to Professor Blackie, we should "think" through a book. This well may be applied to a national exposition. He who will THINK his way through the Exposition at Buffalo, or even part way through, must find something interesting to tell, though he describe but a fragment of the splendid edifice.

I have selected two extreme features for discussion. I hope the bringing together of natural phenomena as widely divergent as the falls of Niagara and an incubator baby will interest some of your readers-and that shall not entirely waste the space that you are good enough to offer me.

Yours very truly, ARTHUR BRISBANE.



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Some Medical Aspects of the Pan-American Exposition

(From *Boston Medical and Surgical Journal*, July 18 and 25, 1901)

Reprinted in the **Buffalo Medical Journal**

August 1901

The Pan-American Exposition presents certain features of particular interest to medical visitors, which, however, are so widely scattered that many of them are overlooked by the casual observer, who has no official guide to their location. Hence a brief mention of their whereabouts and special points of interest may be of value.

The Emergency Hospital, supported from the funds of the exposition and treating its cases gratuitously, is located immediately on the right of the West Amherst street gate, through which the majority of visitors enter the exposition grounds. It is an artistic little building of cream-colored staff, topped off with a dull red roof. It was erected early on the process of constructing the fair, to meet the medical and surgical emergencies contingent on the presence of a large number of workmen, many of them engaged in more or less hazardous callings. Its functions are confined purely to emergency work, and any severe cases received during the day are transferred to the Buffalo General Hospital, or other points outside the grounds, if prolonged treatment is required. No cases are allowed to remain over night in the Emergency Hospital, and no venereal cases are treated therein. The institution has a capacity of 26 beds, and includes a small dispensary fitted up with a few simple remedies, a surgical dressing-room, an excellent little operating and a small diet kitchen. It is admirably administered under the supervision of Dr. Roswell Park, the Medical Director of the Exposition, whose surgical abilities are well known to the profession, assisted by Dr. Vertner Kenerson, both of whom visit tire institution one or more times daily. The personnel of the hospital consists of six young physicians who act as the house staff, and two of whom are constantly on duty. Four nurses constitute the nursing staff. The hospital supports an ambulance service, consisting of one automobile ambulance, the drivers of which are medical students from the University of Buffalo.

Up to the present time, the hospital has treated about 2,200 cases, of which about 700 were surgical. At present most of the cases requiring attention are of a medical nature and are of trivial character, about 30 cases being treated daily. The majority of these cases are of a diarrheal nature and are furnished by the employees of the large foreign concessions in the Midway, such as the "Streets of Cairo," "Indian Congress," "Filipino Village" etc. One member of the house staff usually visits these larger concessions daily, to ascertain the presence of any cases needing medical attention. Sir far, the professional work has been very light. A few deaths and seven accidents occurred as a result of falls by workmen during erection of the exposition buildings and, as was to be expected at a fair where electricity is made such a prominent feature, several fatal accidents among the workmen have occurred from contact with defectively insulated electric conduits. Scarcely any cases of sunstroke and heat exhaustion have as yet occurred, even during the hot wave which recently prevailed over the eastern part of the United States. Cool lake breezes are a pleasant feature of Buffalo summer climate and seem to substantiate the claim that Buffalo is the coolest city to the Union during the summer. There has not been a night this season when the visitor would not require the use of a blanket if to sleep in comfort. Mosquitoes and flies are almost unknown in Buffalo, and the visitor is certain to be free from their annoyance. To return to the subject of the Emergency Hospital, it may he said that while this institution possesses no unusual features to those acquainted with hospital service, its equipment is of the most modern type, and its neatness and order, together with the efficacy of its service, reflect much credit upon those in charge.

Infant Incubators

A few steps from the Emergency Hospital is a building which somewhat resembles this institution in appearance. It is the building of the "Infant Incubators," which a "barker," in high hat and frock coat terms "the only scientific attraction on the Midway." The Qbata Company, which controls this concession, appears to be coining money, for, strange as it may seem, this attraction is one of the most popular on the Midway. Its patrons are not only those who have a professional interest in the subject, but also a large proportion of the curious, particularly those of the feminine persuasion. As the "barker" says, "there is nothing improper in the exhibit," but his statement that there is "a whole houseful of infants," must be taken with the usual Midway grain of salt. Inside, the visitor is ushered into a large room, with impermeable walls and floor, railed off around the walls. There are about a dozen of the Qbata incubators, something more than half of which are usually occupied by small mites of humanity prematurely introduced to the world. The incubator consists of a nickel frame with glass sides, making a box about two feet square, to which access is had by a door in front. The infant neatly bundled up, lies on a small

mattress supported on springs so delicate that the whole frame gently oscillates with every movement, even the breathing of the child.

The temperature in the incubator is regulated by a thermostat, which maintains a constant temperature of about 26 degrees C., the necessary warmth being supplied from water pipes running from a small tank heated by an oil lamp. Ventilation of the incubator is secured by small aspirating fans, the incoming air being rendered sterile by filtration through cotton. Wet nurses provide nature's food for the sustenance of the infants, the latter being removed from the incubators and fed every two hours, weighed, and the cleanly condition of their linen verified. This is done in a small nursery, adjoining the incubator room, which is fitted up with bath tubs, baby baskets, and the like, in a way to satisfy aseptic ideas and delight the esthetic. A chart on each incubator shows the age, sex, weight, temperature and period of gestation of each child. One small morsel of humanity on exhibition was stated to have weighed 2 lbs. 1 oz. on entrance and to have gained 5 oz. in about a fortnight's sojourn in the incubator. The period of gestation of nearly all the infants is stated as about seven months. The appearance of some of the infants would appear to justify this statement, though it would require a slight elasticity of the professional imagination to believe this with regard to others.

The supply of infants is recruited from Buffalo and vicinity, they being cared for gratuitously by the Qbata Company. I was informed that a premature arrival in a family prominent in Buffalo society and a small papoose from the Indian Congress were admitted on the same day.

The Qbata Company claims that 85 per cent of viable infants may be saved by their incubators. The question naturally presents itself as to whether this is worthwhile; whether the race as a whole does not suffer from the preservation of these weaklings to perpetuate their kind. Medical science is a little illogical in respect to the results obtained, and in its efforts to preserve the individual it forgets to consider the effects of such action upon the race as a whole. Every stock raiser appreciates the necessity of healthful environment, abundant food and fresh air in maintaining a breed of animals in a state of high physical development; and sanitary science insists upon the necessity of these conditions for the physical uplifting of the human race. The stock raiser, however, breeds only from the most sound, healthy and perfect animals, and thus secures a physical conformation and constitution upon which the conditions of environment can act most advantageously. Medical science, on the other hand, does not hesitate to undo the advantages gained by the hygienic rules it has promulgated, by preserving the weakling, the deformed, and the tuberculous, and placing these defectives -- who would otherwise surely have perished in an active struggle for existence -- in a condition to transmit their deficiencies, deformities and vices to generations as yet unborn. Certainly, in regard to the physical standard of the human race, the medical profession is in the position of tearing down with one hand while it builds up with the other.

On the whole, the exhibit of infant incubators furnishes much food for reflection and is well worth the cost of admission. The concession is well cared for and everything about it is kept neat, clean and attractive, and elicits the commendation of visitors in this respect. I suspect that the general opinion in regard to the infants themselves is fairly well expressed by the Englishman whom I overheard remark as he emerged from the incubator room, "Only fancy commencing life as a Midway exhibit, don't you know!"

A Creche Needed

In my last letter a description was given of the Exposition Emergency Hospital and the "infant incubators" on the Midway. From the latter subject to that of the care of young children accompanying older persons visiting the fair the transition is easy. At present a "creche," where tired mothers may safely leave their children, is much needed.¹ The Children's Building at the south end of the Midway, originally intended for this purpose, has been converted into headquarters for representatives of the press, for which latter purpose its location and size render it particularly suitable. There has been some talk of establishing nursery tents at each of the main entrances to the grounds, but as yet nothing has been done in this respect, nominally from lack of funds. The matter is one which merits the serious attention of the exposition authorities, and any additional cost resulting from the operation of these nurseries would probably be more than repaid by an increase in the gate receipts. With the poorer classes the mother frequently cannot take an outing unless accompanied by her children, from lack of anyone who can be relied upon to care for them during her absence. If the exposition provided places where infants might be safely left, the fair would undoubtedly be patronised to a greater extent by mothers of this class. Sightseeing on a warm day while carrying a baby in arms is not conducive to enjoyment on the part of the tired and overworked mother nor good temper and health on the part of the unfortunate infant exposed to the heat, noise and crowds.

Crossing the Midway the average medical visitor proceeds to the beautiful court of fountains, and turns his steps toward the exhibition made by various departments of the government, well called the "back-bone of the exposition." On his way he will very likely visit the Ethnology Building, which contains an ethnological display which, though not large, is of unusually high character. In this building the medical men interested in anthropology will find a certain display on this subject worthy of attention, chiefly among the exhibits in the gallery.

Pure Food Exhibit

In the exhibit of the Department of Agriculture, located next the Ethnology Building, in the annex on the right of the main Government Building, the display made by the section on foods will prove of much interest to the medical man. This exhibit is in charge of Dr. Stewart of the Bureau of Animal Industry, and occupies one-fourth the floor space of the building, being located immediately west of the main entrance. Much space is devoted to the subject of adulteration of foods, and numerous specimens, tastefully arranged in jars, are used to illustrate the appearance of some of the more common articles of food, both pure and after adulteration by some of the more common methods. The exhibit is particularly rich in its display relative to the adulteration of spices. An interesting series of specimens illustrates the various grades of canned fruits and vegetables, from the highest quality down to the watered and reprocessed article billed by the dishonest tradesmen as "first quality." The artificial coloration of various foods is shown; also the crude material from which these pigments are obtained, and the special forms in which they are employed commercially. One test tube shows 10 gr. of copper recovered from a single 1 lb. can of string beans. The possibility of tin poisoning is illustrated by 5 gr. of stannous oxide recovered from a 1 lb. can of tomato soup.

An excellent series of food preservation is shown in glass containers, each bearing the chemical analysis of the contained article and the actual market cost of the materials, together with the selling price. Such remarks as "formaldehyde solution; retail price, \$1.00 per gallon; value of materials less than 4 cents," point their moral very concisely. One cannot but wish that the Government would follow the example of the German authorities in respect to patent medicines and proprietary nostrums, and publish the formulae and ingredients of all such preparations, together with their cost of preparation at market rates for materials. The fortunes amassed by many of the concerns controlling patent medicines of certain therapeutic efficiency undoubtedly depend upon secrecy of preparation; for the hard-headed citizen can scarcely be expected to spend a dollar for a ready-made article when he can have the same thing put up at the corner drug-store for half the money. The enactment of a law requiring all manufacturers of patent medicines to print the formula upon the label is respectfully submitted as worthy of the best efforts of the profession in respect to future legislation.

An interesting exhibit in connection with the artificial preservation of food is seen in a collection of tubes displaying quantities of salicylic acid and other substances recovered from small quantities of food stuffs preserved by their agency. Half a test tubeful of salicylic acid is shown as having been recovered from a single tin of canned soup - and one is moved to marvel that cases of poisoning from preserved food stuffs are not more common than they are. "Preservative," - combination of boric acid and salt, colored with cochineal, - made famous in the army beef controversy, is here given a prominent place. One of the exhibits among the jams and preserves is labelled: "Strawberry Jam." Sweetened with glucose, stiffened with starch, colored with an aniline dye, preserved with benzoic acid and artificially flavored." The strawberry part of this delectable compound apparently exists in the imagination alone. It is highly unfortunate that the exhibit does not specify the particular brands and give the manufacturers' names of the articles whose analysis are displayed, so that the observer might not only appreciate the extent to which food adulteration is practised, but might know what brands to avoid in making future purchases. Those whose greed is such as to render them willing to injure the public health to more quickly fill their purses should be publicly pilloried and made to suffer the financial loss which would follow exposure of their nefarious practises.

An interesting series of "wines," made by fermenting glucose, colored with aniline dyes and preserved with salicylic acid, is also on exhibition. It is stated that these "wines" are sold to the trade at from 25 cents to 35 cents per gallon.

A large case in the centre of the building contains a bomb calorimeter, used for the determination of the force or fuel value of food stuffs. The same case also contains a model of Atwater's respiration calorimeter, as used by him in his investigations on nutrition at Wesleyan University.

Meat Examination

In the Bureau of Animal Industry, a feature which attracts the attention of crowds, is the microscopic examination of pork for trichinae and other parasites, as carried out by the Department of Agriculture at the large packing houses. A small laboratory is here fitted up, in which three young women make these microscopic examinations in the presence of the visitors, and exhibit samples of infected meat. Nearby an interesting series of pathological specimens, both wet and artificial, showing various types and lesions of disease in the animals used as food, will prove interesting to all medical men, and is well worthy of careful study by health officers and those who have to do with food inspection. This exhibit is supplemented by a large series of lantern slides, showing bacteria, pathogenic lesions, etc.

Many artificial preparations illustrate the method of infection and pathologic changes in Texas fever, the investigations into the cause and nature of which by the Agricultural Department formed the entering wedge which opened the way to a wider knowledge of the transmission of disease by insects, the latest triumph of scientific medical research. A small but completely equipped biologic laboratory is also shown in this section; also various protective and curatives are, and illustrations of the steps in their preparation. The municipal health officer will find much to interest him in the nearby display of sanitary dairy cans, bottles and utensils; and the photographs, illustrating the sanitary methods now employed in the best class of dairies to minimise the danger of transmitting disease by their products.

Before leaving this exhibit the physician, who naturally has much to do with horses, will find it of advantage to inspect the case illustrating the causes of lameness in horses, proper and improper methods of shoeing, and the like. The knowledge to be obtained in a few minutes from this exhibit will be of much practical value, and may save suffering on the part of the animal and money and annoyance to the owner.

Medical Departments of Army and Navy

Proceeding through the connecting arcade to the main Government Building the professional visitor will find much to interest him in the exhibits made by the medical departments of the Army and Navy and of the Marine Hospital service. The exhibit of the Medical Department of the Army - the largest single exhibit of any character in the entire exposition - consists of a model brigade field hospital, lack of suitable floor space in the Government Building having rendered any indoor display commensurate with the importance of the department, quite impossible. While the present exhibit is most admirable so far as it goes, it is to be regretted that the Army Medical Department, with its magnificent museum, Surgeon-General's library and completely equipped laboratories to draw upon for exhibits did not have the opportunity of demonstrating its resources and the magnitude and value of its work by an indoor display. It is understood that but 400 feet of inside space was placed at the disposal of the department, so that probably the latter did wisely in refusing to make an indoor exhibit which could not be representative.

The brigade field hospital tents are located on the large plot immediately south of the arcade between the fisheries and main Government Buildings and are much visited, not only by physicians, nurses and military men, but also by a large class who have - or who have had - friends or relatives in the regular or volunteer armies, and are interested in the care of the sick soldier in the field. The hospital has a capacity of 100 beds - or a proportion of about 2 per cent, from a command of 5,375 maximum war strength - and is completely equipped for field service down to the last authorised dose of medicine and tent peg. The purpose of the exhibit is to leave nothing to the imagination of visitors, but to demonstrate the equipment of the medical department in respect to the brigade hospital unit, in quantity, size and capacity, as well as in variety and quality. The exhibit is peculiarly unique and attractive, since the equipment displayed is largely composed of the articles lately incorporated in the supply table of the medical department, as a result of the labors of a board of medical officers who were engaged for nearly two years on the improvement of the hospital equipment and medical supplies. Nearly every all the important articles here shown have been adopted by the medical department within the past twelve months, and the exhibit as a whole undoubtedly represents a much more modern and complete equipment for the care of the sick and wounded in the field than could be shown by any other army in the world. Medical men will be most favorably impressed by this exhibit, with the resources and progressiveness of the Army Medical Department. The hospital tent wards of this exhibit are pitched in the form of a cross, with a central covered spare. The medical and surgical tents, office, mess and kitchen tents are located within the arms of the cross, presenting an arrangement not only attractive and compact, but so devised as to afford the casual visitor a good idea of army medical service in the field with the minimum expenditure of time and effort.

The dispensary tents contain drugs and medicines in such quantities, varieties and proportions as military experience, since the outbreak of the war with Spain, has shown to be required for a brigade of maximum war strength, under conditions of field service, for a period of ninety days. The new model medical chest displayed in this tent is a marvel of simplicity and compactness and should prove of special interest to medical officers of the state troops. Weighing only about eighty-five pounds, it yet contains an abundance of medicines and medical supplies for a regiment for three months. This chest forms one of the regimental set of three field chests, - the medical, surgical and steriliser, - one chest of which can be carried by a single coolie, two can be carried on a litter, and the whole three of which may be carried on a pack mule. The brigade hospital reserve supply of medicines is shown in milk in the original bottles, but the Hospital corps man in charge explained a simple method of packing such reserve medicines which would be used in the future; the method depending on the issue of medicines in bottles of standard sizes and shapes, four small bottles making a packet of the same proportions and size as one large bottle, and doing away with the necessity for the use of partitions or packing materials in the containing chests, to prevent breakage. The ward tents used in the exhibit are of the new model Munson hospital tent pattern recently adopted by the medical department, as a result of exhaustive trial in the United States and in the tropics, as being much superior to the old hospital tents, formerly employed for the shelter of the sick. The wards are very cool and attractive, the tents are admirably ventilated, and the subdued light and seclusions these tents afford must be very grateful to the sick soldier. One is struck by the remarkable economy of space, transportation and labor possible by the new method of packing the hospital furniture and equipment. A complete outfit of cots, chairs and tables for each tent, allowance of six patients, goes in a single small chest, while all the bedding, pajamas, mosquito bars, and the like, pack in a single canvas bag - thus saving the necessity of opening numerous chests and boxes to secure the various articles necessary to outfit the tent on establishing the hospital. In the covered space between the four wards an extremely interesting series of photographs is displayed, illustrating actual field work of the medical department in transportation of wounded, first aid and field surgery, and hospital establishment.

¹ A Creche has been established --Ed. B. M. J.

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Twelve at the Exposition

Tiny Mites of Humanity Receive Most Assiduous Care From Nurses and Physicians

Buffalo Express
June 12, 1901

Exposition visitors to the Incubator building on the Mall cannot but be impressed by [illegible] the infant incubator. By means of the incubator, the prematurely born child is given the right start in life. Ordinarily, only about 25 per cent of those babies live but when cared for in the incubator fully 85 per cent are saved.

There are twelve infants at the incubator now, eleven of them being in the incubators. The twelfth one has been out of the apparatus four days, and is in a wire basket in the nursery, where she will remain for observation purposes for five weeks when she will be returned to her mother. She is a perfectly developed and beautiful child, with no indication that she was nurtured in an incubator. With one exception they are all Buffalo babies. The babies are brought in a comatose condition, and it is only by drastic measures that the incubator doctors are able to bring back vitality. If the cases are not brought too late, there is always some chance for saving them.

As soon as a child is received, it is given a synized bath in water and mustard, then two drops of brandy are placed in its mouth, which acts as a stimulant. Its body is then rubbed with alcohol and the child is placed in the incubator, and kept in temperature of 96 degrees Fahrenheit for four or five days, being removed regularly day and night every 1 1/2 hours to be fed about fifteen grams of nourishment with a nasal spoon.

Its food consists of milk supplied by healthy wet nurses. The child being too weak to have a desire for food, the milk is placed in a small glass, which is immersed in a larger glass containing warm water, that keeps the milk at the proper temperature. The spoon is also heated to the same temperature, and the child is fed a drop of milk at a time through the nose, inhaling the food as it breathes. With all the precaution taken to keep nourishment at the proper temperature the incubator doctors find that the food has not the same life-giving qualities as it would have if the child drew it from the mother. The little one is never out of danger until such time as it has the strength to take at least 30 grams or one ounce of nourishment at a single feeding.

When it becomes strong enough to swallow, it will evince a desire for food, and it is then fed by means of a teteralle, a device whereby Nature's food is gravitated to the child's mouth.

Every child is weighed before and after each feeding, to ascertain the amount of nourishment he took. A complete record is kept of this, as is of every other detail of that infant from the time he was born. The report and number of each child is in full view in front of the incubator to which he belongs.

The incubator looks much like showcases, with so little metal in view as to be scarcely noticeable. They are raised from the floor by steel rods to a convenient height for the observer. The child lies on a soft padded bed of woven wire and his chamber is entirely of glass, so that he is in full view of the spectators. The air in the incubators is kept at a uniform temperature by means of an automatic contrivance, and fresh air is introduced through a large pipe. The air is first purified by passing through an antiseptic fluid and then through cotton, and warmed before it is permitted to pass into the infant's apartment. The atmosphere is kept humid by a pan of water which is placed under his little bed.

The tiny mites are dressed similar to other infants, except that their feet are wrapped up in swaddling clothes. The boys and girls are distinguished by ribbons, the boys wearing blue and the girls pink. There is no danger of a mother receiving the wrong child from the incubator, for as soon as a baby is received into the institution a necklace of seventeen [illegible] believed by the

Germans to be lucky, with another tag stamped with the child's initials and number is sealed on its neck and remains there until after it leaves the institution. A card with the corresponding number is placed on the child's incubator.

The youngest child in the institution has been nicknamed Cocoa by the trained nurses in attendance. it was born in this city on Sunday, June 2nd, and was received at the institution on the morning of June 3rd in an expiring condition. He is a small child but has a pair of strong lungs that enable him at times to cry lustily, much to the amusement of the spectators.

A tiny boy, labeled, "A. S., No. 45," born on Sunday, June 2nd and received on June 8th in bad condition, is being treated for opthalmia, an inflammation of the eyes. His eyes are bandaged, not to keep out the light, but for the application of medicine. Whe he is older, the physicians say his eyesight will be good and that he will not suffer any ill effect from his present trouble.

"L.W., No. 41," and "B.W. No. 40," twin girls, receive considerable attention from visitors. When they were received, their combined weight was seven pounds and yesterday it was eleven pounds and twelve ounces.

Little Willie is the pet of the institution, having been the first child admitted. He is yet in his incubator, but will come forth on Monday, June 24th, when he will have his full sense of sight and hearing. He has benn in the institution since April 26th and weighs five pounds, eight ounces. His weight when born was two pounds, fourteen ounces.

After a child's time in the incubator has expired, he is kept in the nursery under observation for five weeks, during which time he is weaned and taught to use cow's sterilized milk. The children are cared for night and day by trained nurses from the Berlin baby incubator institution. The are always kept in a perfectly hygenic condition and are given more attention than they would receive from their mothers.

At the close of the Exposition, the Qbata Company, which has the exhibit, will open an institution in Boston, Mass., and later in every large city in the United States.

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Twin Boys Come to Buffalo

Wee Mites Will Be Placed in the Infant Incubator at the Pan-American

Buffalo Evening News (New York City, via Associated Press)
August 2, 1901

Twin boys of Joseph and Theresay Cuneo, now two weeks old, and whose combined weight is less than four pounds, have been taken to Buffalo to be placed in the incubator room at the Pan-American Exposition, where it is hoped they will have a chance for life. On their journey to Buffalo they were wrapped in a nest of cotton wadding, hot water bags and blankets. A few days after their birth their parents became alarmed because the babies steadily lost what little flesh and weight they had.

Before the infants started for Buffalo one of them weighed only one pound, 12 ounces; the larger weighed two pounds, one ounce. The smaller twin had refused nourishment for two days. His face was not much larger than a silver dollar. Each babe is less than 12 inches in length.

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Three Tiny Girls in the Incubators

Triplets and Their Mother Arrive From New York and Go to the Midway

Buffalo Evening News
July 17, 1901

A family of triplets arrived at the infant incubators this morning from New York City. They are good healthy girls, and they weigh altogether nine pounds. They came in a special compartment in the Lackawanna Express, which arrives at Buffalo at 7:45 o'clock, attended by their mother and three trained nurses. The babies are seven months' children. They are 12 days old, and from appearances they have good chances of living if treated in the ordinary way, but the mother feared for them, and having heard of the incubators, she posted off to Buffalo as soon as she was able, and here they are.

The little mites of girls are Roumanians. They have black hair and a good deal of it for babies of their dimensions. They all look alike even to their mother who had them marked for identification so that there would be no mix up in the sleeping cars. Dr. Coney was on duty at the Incubators when they arrived. He was overjoyed at the coming of his guests and he immediately prepared the central three incubators for their reception. Never before has the incubator had a guest from so great a distance. All the nurses were delighted to do the babies honor in the way of getting out soft wrappings and safety devices for their comfort.

At 10 o'clock the three girls were sleeping soundly in their berths. They are duly numbered and recorded in the books of the institution, but in order to be known by their mother who will be a constant attendant on them as she looks through the glass at her babies, Dr. Coney fixed a black bow on the dress of Rebecca, a red one for Rose and a white one for Sophia.

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