

RADIUM, UNIVERSAL LIGHT BRINGER, HAS MADE THE BLIND TO SEE.



This letter has so far defied all attempts at healing.

WHITE MICE DIED FOR LACK OF BREATH.

A most interesting observation was made on a dozen white mice, placed in a glass jar with liberal provisions. On the top of the jar I put a small box of radium, encased in pasteboard and metal.

The mice enjoyed themselves for twice twenty-four hours.

After that they exhibited signs of distress, lying listlessly on their backs. On the fifth day all were dead.

Investigation proved that every one of the rodents died of paralysis of the breathing centers.

Radium's influence on the skin suggests that it may be a powerful aid of medicine in curing skin diseases.

Several of my medical friends are experimenting on the lines indicated, and on Lupus the results so far have been very encouraging.

Another interesting fact: I subjected the uninfected egg cell of a lower animal to radium rays, and it began to develop.

In the case of rabbits I observed that their coat improved on the side subjected to radium rays. In short, I am all together hopeful that radium may do for us many things heretofore considered impossible. Too bad that it is so scarce and expensive as to be without reach for the poor blind especially.

Perhaps the State will help them, now that their future begins to look bright.

I certainly think that the blind man's chances for getting back his sight, or acquire it, have unmeasurably improved since the discovery of radium.

In this respect let no one be discouraged by reports of experiments that failed.

Those described by the writer were entirely successful, and the minutes of the case are at the disposal of all interested.

Eye specialists of all nations should at once begin experimenting with radium.

C. S. LONDON, M. D.

Doctor London placed a box of radium behind a screen and the blind child sprang excitedly toward it. He could see the light.

Special Correspondence of The Sunday Republic.

St. Petersburg, June 30.—I made a blind boy see by means of radium, and the fact justifies a detailed discussion of the new element's properties and the hope it holds out to suffering mankind.

The radium preparation placed at my disposal for experimental purposes looked, at first sight, like a bit of ground tobacco, resembling the same in substance, and color.

After I had satisfied myself to that effect, my assistant, a chemist, asked permission to place a black bandage over my eyes.

I wore the same five or seven minutes, when he came toward me with a small box containing the very radium I had previously examined.

Holding the box before my covered eyes at a distance of from four to six and one-half inches, the following sensations manifested themselves:

My blind-folded right eye had a distinct perception of light, growing stronger as my assistant advanced upon me, at centimeter stages. (Three centimeters equal to one inch.)

It seemed as if my right eye had entered into a light sphere, yet there were no sharp contours or outlines.

Next the boxed radium was advanced toward my left eye, which up to then had but scantily perceived by the light-bringer, and immediately following the light sensation in my right eye became dim, while that in my left materially increased.

I asked the assistant to place the radium, paste-board cover and all, into a small metal match box, whereupon the experiments were renewed, the result being almost similar. The light sphere observed was but a shade less bright.

Then I placed my hand over the blind-folded eye and saw as much as before.

Two friends put their hands over mine. Result the same.

Here, then, was a light-bearer for the more or less sightless, the degree being hardly of any consequence.

Still blindfolded, I asked my assistant to point the radium toward my forehead.

Then, too, I perceived the light sensation described; that is, I saw the radium rays, not the boxes holding them prisoner.

Some time later a friend called, who has a peculiar nervous head.

We held the box several inches away from the back of his head, his eyes being blindfolded. According to his description he experienced the same light sensations that had astonished me.

At the time of writing the above experiments have been tried on a dozen or more reliable men and women, with the results noted.

STARTLING DISCOVERIES MADE IN DARK ROOM.

We next experimented in a dark room, dispensing, of course, with the blindfolding business.

As expected, the same results were had.

Still later a person possessed of one sound and one unsound eye was experimented with. It developed that the light impressions conveyed by radium on the sound eye

were stronger than those on the other.

The left eye of another young person investigated is minus a retina. The radium rays made no impression whatever on that eye.

Every optician will tell the reader that a perfect crystalline lens is necessary to insure good sight. Our experiments show that a good, healthy crystalline lens diminishes the impressions of radium rays on the eye. It seems to repel them.

The question arose: Can a blindfolded person, or a person in a dark room, perceive articles on which radium rays are reflected?

Experiments proved that such is impossible, for radium rays penetrate the article, and, in part, are swallowed up by it.

With respect to the experiment of holding radium above the line of the eye, it was observed that the lower half of the retina caught the rays; myself and others had been under the impression that the light came from above.

We did not know the assistant's position till later.

We continued experiments in the way that the assistant described, with his radium box, various figures, representing numbers, letters, diagrams and words before the blindfolded persons. All these figures were instantly recognized. This latter fact still more strengthened my belief that radium may be placed in the service of the blind with most beneficial results.

With this end in view I thought at first of playing the radium rays on the retina directly, but that was an error of theory as well as of practice, for, in the first place, not the retina of sightless persons resembles the other, and, again, radium rays may have with living tissues. So we were forced to resort to mechanical apparatus.

LIGHT COULD BE INTENSIFIED OR DIMINISHED.

To this end we employed barium-platin cyanide, and holding same at a certain distance from the box with radium, saw it light up with subdued yellowish-green fluorescence, the peculiar appearance presented by certain substances on being viewed by reflected light.

The light, moreover, could be intensified or diminished by moving the radium box nearer or farther away.

To the apparatus, figures, writing, diagrams, etc., may be attached, and after it is lit up by radium, the blind can perceive the meaning or characters, the only condition being that the attachments are of nontransparent material, black paper, lead, etc.

Our experiments further show that under such conditions the sightless eye is easily educated.

Remember, though, there must be no side-lights, none other but the fluorescence. The principle, let me add, is not new. It is the same that enables us to see the stars at night, and to see them the better the darker it is.

Next we experimented with a box of radium placed behind the screen, with the result that on the opposite side an intense light spot appeared.

The several blind people under my obser-

vation were able to perceive that spot and to follow its movements. The radium box described a circle behind the screen and the blind man imitated the same with a pencil on a sheet of paper.

Let us now convey the words were conveyed to those previously educated in schools for the blind in the same way.

I therefore maintain that it will be possible to teach the blind to read and write by way of radium, also to draw figures, etc.

Among others I introduced an 11-year-old boy to the new method.

In the first year of his life this boy had become blind, owing to an affection of both nerves of vision.

Yet his eyes were still capable of receiving a certain amount of light impressions; he can distinguish between light and darkness.

BLIND BOY LEARNED TO READ.

After a week of experimenting the blind boy learned to make out letters that were radiographed on the screen.

The letters were about three inches high and some three inches apart.

To-day my little pupil can read words composed of letters.

That much demonstrated, the physiological aspects of radium should be examined.

According to my own observations, its impress on organisms has three different periods.

The first is more or less latent, at least I could perceive of no visible changes.

During the second period the organisms seem to be in a sort of inflamed state, not always patent to the eye, yet requiring close examination.

The third period is that of destruction more or less far-reaching, according to the intensity of the radium-rays employed.

This indicates that radium-rays, when we completely understand them, will lend themselves to various medical purposes inasmuch as a gradual scale of exposure may be established, the result depending upon time and the quantity and quality of the radium used.

Furthermore, I ascertained that the influence of radium rays on organisms depends, in a large measure, on the nature of things coming in contact with the rays. We have reason to believe that certain plant and animal seed does not develop under radium rays; leaves lose their healthy green color, etc.

I subjected the skin of a guinea pig, of a rabbit and a young man to radium rays and during the first three days observed no change, on the fourth day the skin looked inflamed, a swelling appeared and finally an open wound of the kind known in medicine as ulcus necrosum.

MR. AND MRS. HENRY BIER ARE PARENTS OF THE LARGEST FAMILY IN NORTHEAST MISSOURI



MR. AND MRS. BIER AND THEIR FAMILY. No. 1, Lizzie; 2, Thomas; 3, George; 4, Alice; 5, William; 6, Henry; 7, Mr. Bier; 8, Mrs. Bier; 9, Joseph; 10, Nellie; 11, John; 12, Frank; 13, Edward; 14, Marguerite.

Special Correspondence of The Sunday Republic.

Palmyra, Mo., July 12.—There is probably no man better known or more respected in Marion County than Henry Bier, who has the distinction of being the father of the largest family of living chil-

dren in this part of Northeast Missouri. He and his wife have twelve children at their table, all in the best of health, happy and assured of a competence for years to come.

When President Roosevelt made his re-

markable address on race suicide Marion County people immediately thought of the fine example which Mr. and Mrs. Bier had given to their neighbors.

This couple have succeeded in becoming the owners of several hundred acres of

fine Marion County farm land, and are now resting content, while their children are taking their full part in the activities of the community.

Mr. Bier was born in Shelby County, Missouri, June 11, 1844, being 57 years old at present. His parents were natives of Germany, who brought him to Palmyra in 1867.

He was raised on a farm, educated in the common schools, and previous to buying a grocery in this town in 1874 worked at shoemaking, plastering and bricklaying. After conducting the grocery for a number of years he turned the business over to his son Frank, and his daughter Lizzie.

He was married to Miss Mary Finnegan of Quincy, Ill., on September 20, 1872.

With most of their children they now live on one of the best farms hereabouts. Fourteen children were born to them, twelve of whom are now living.

The picture of this family contains the parents and the living children, as follows:

Henry Bier, aged 57; Mrs. Mary Bier, aged 49; John, 25; William, 25; Lizzie, 20; Thomas, 21; Frank, 19; Marguerite, 17; Henry, 17; Nellie, 15; George, 12; Edward, 10; Alice, 7; Joseph, 2.

TOLD IN FIGURES.

Uncle Sam's annual income is \$558,887,148.

Russia has fifty-seven warships at Port Arthur.

Florida's orange and pineapple crops is estimated at \$2,500,000.

The birth rate among the foreign born in Massachusetts is 23 per 1,000. Among the native-born it is 17.

Nearly one-half of the mortality in the United States is from diseases of the lungs, and 75 per cent of it preventable.

The postal receipts for the fiscal year ending with June were \$1,908,967, an increase over the previous year of \$128,622.

There are 27 lead pencil factories in Germany, which employ 2,513 persons and export each year 1,614 tons of pencils, worth \$2,000,000.

Mr. Carnegie's gifts to countries other than the United States are recorded to the amount of \$5,821,550, making Mr. Carnegie's total gift to libraries \$14,366,950.

At present there are about seven lakh-firms engaged in gem-cutting in the States, with not far from \$5,000,000 invested. There are probably about 250 skilled lapidaries at work, earning at age \$1,000 apiece a year.