



SILENCER FOR LIGHTNING

## ENGINEERING

## Artificial Lightning Now Without Deafening Noise

See Front Cover

COMPLETE lightning phenomena can now be produced in comfort in the laboratory. One artificial 100,000-ampere lightning stroke produced in Westinghouse's Sharon, Pa., testing laboratories caused spectators to hold their ears to shut out the thunderous noise, as shown on the front cover of this week's SCIENCE NEWS LETTER.

Engineers have developed a muffler, however, which shuts out the noise and allows observers to stand close to the lightning current generator while it is operating.

Tests in the laboratory during the past three months showed engineers the futility of conventional protective apparatus and brought out the ability of the "deion gap," a device for "snuffing out" lightning currents, to protect against even direct strokes of lightning.

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## MEDICINE-CRIMINOLOGY

## Would Criminal Become Leper To Change His Fingerprint?

WOULD a desperate criminal be willing to contract leprosy in order to escape the law?

Dr. Leonidio Ribeiro, director of the bureau of identification in Rio de Janeiro, Brazil, has made public research which raises this question for crime detectors. He gave convincing proofs, with photographs, that finger prints of persons with leprosy change so greatly from what they were before the illness that they are useless for purposes of identification.

Dr. Ribeiro's investigations were carried on in the colony for lepers in Curupaity, Jacarépaguá, Rio de Janeiro. Of two hundred cases examined for his report, 80 per cent. were found to have changed finger prints after the onset of the disease. The number examined included both men and women. In non-leprosy persons white streaks were found in 10 per cent. of those investigated. In lepers he found that 70 per cent. had these white lines. These lines so changed the papillary pattern that the prints no longer made identification by the finger print method possible.

It is estimated that there are over five million lepers in the world. In this leper population there may be many thousand criminals who, if their crimes were committed before the onset of their disease,

could never be identified by their finger prints.

Two other diseases, scleroderma, which is not contracted at will, and radio dermatitis, an industrial disease, also change the finger prints to a marked extent. These diseases have already been taken into consideration with suspects known to have these ailments.

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## NEUROLOGY

## New Kind of Pain Due to Chemical Tissue Changes

A NEW KIND of pain resulting from chemical changes in tissue surrounding nerves was described before the Second International Neurological Congress meeting at London by Sir Thomas Lewis, fellow of the University College, London, and member of England's Medical Research Council.

The more usual type of pain arises when the nerve endings are stimulated by direct physical contact.

Sir Thomas cited experiments showing that malnutrition or injury of tissues may cause chemical changes which stimulate the sensory nerves and bring pain.

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## EDUCATION

## Care of Blind Children Is Outlined for Parents

"A BLIND child eight years old who has had no previous training is almost hopelessly late."

Hopelessly late for what? To be started on the road to normal associations with seeing people.

This sharp warning is issued by the Canadian National Institute for the Blind, in its efforts to induce relatives of blind babies to give these children a fair start in life, and to lose no time making that start.

The printed instructions that the Institute offers to the parents of blind children are impressive, even for the casual reader to glance over. They are "common sense," and simply told. Yet, there is no doubt in the world that thousands of households with blind babies in them would never think of some of these important things to do for their handicapped children.

Giving the blind baby his good start includes such items as these, taken from the Canadian instructions:

Teach the child to walk at the same age as you would the seeing child.

As soon as possible teach the child to dress and undress; to wash himself; to comb his hair; to take care of his clothes; and, when at the table, to use properly a spoon, fork, and knife. A blind child should do all these things

as well as a seeing child; but you must be patient and give the child much practice in doing such things because he can not learn by observation.

Watch carefully the child's personal appearance and bearing. He can not see how others act and so readily acquires habits which are disagreeable to his companions. Some of the most common mannerisms of blind children are rocking the body, twisting the head about, sticking the fingers into the eyes, distorting the face, swinging the arms, shaking and hanging the head in walking, and bending over in sitting. As soon as you observe such practices in your child, you should set yourself with patient determination to break them up, and with gentleness and firmness to rectify them. Once they become habits, years of schooling will not undo the mischief.

Allow the child to take part as early

as possible in household duties.

Speak with your child frequently, for, since he can not read the loving care which is written on your face, he has a special need of hearing your voice. Ask the child frequently what he hears and feels, and encourage him to ask many questions as to what is going on around him.

Take care what you say before your child, for the blind child is more attentive to all that he hears than the seeing child is.

Never express regret in his presence at his blindness. Never allow others to do so. Encourage him to be happy and bright and to do his work with spirit and pleasure in order that in later years he may become independent of outside assistance.

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road. The highway can be built for around \$450 a mile, where \$1,500 is a minimum cost for a mile of asphalt road. Thus, by this method many roads can be surfaced which do not get enough traffic to warrant the expense of a hard surface finish.

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#### ETHNOLOGY

### Discover Where Indian Maid Tricked Spaniard De Soto

THE SCENE in the American wilderness where a clever Indian girl "made a fool" of Hernando de Soto has been located by a modern exploring scientist following de Soto's trail.

Dr. John R. Swanton of the Bureau of American Ethnology announces that the celebrated incident took place "with high degree of probability" near Franklin, North Carolina, on the Little Tennessee River.

Here, the lady of Cofitachequi, Indian woman chief who was carried captive by the marching Spaniards, outwitted de Soto and even managed to take her trunkful of pearls with her in the escape.

The Indian, described by de Soto's secretary as a young girl of fine bearing, had come to greet the Spaniards riding in a litter covered with delicate white fabric. She had taken off her pearl necklace to present to the Spanish governor, and talked with him gracefully and at her ease. The fresh water pearls greatly impressed the treasure-hunting Spaniards, who explored and found quantities in the village buildings. When they moved along, the lady of Cofitachequi was carried with them, and one of her woman attendants bore a cane box, like a trunk, filled with unbored pearls.

But one day she slipped into a thicket off the road, carrying with her the attendant, pearls and all. And all de Soto's army, searching frantically, could not find her.

Dr. Swanton, well-known authority on de Soto's route to the Mississippi, picked up an ancient, well-marked trail which ran across steep mountain ridges to Franklin. Matching the narratives in various de Soto expedition diaries to the terrain, he located the probable site of the old Indian town of Xualla, mentioned in de Soto adventures, and placed the escape of the girl on the plain of Franklin. The location, he said, fits all requirements of the scene as described by the Spaniards.

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A ton of onions may yield no more oil than one-tenth of a pint, but that small amount is highly potent.

#### ENGINEERING

## Highways of Salt In Use Now In New York State

HIGHWAYS of salt are now being built as the result of the experiments of Dr. Cloyd D. Looker, research director of the International Salt Company of Ithaca. These "salt-soil-stabilized" roads are proving very successful as highways which do not carry a lot of traffic but which must be built and maintained at a low cost. In the "farm-to-market" type of road, where traffic does not exceed 500 cars a day, it is considered one of the cheapest and best methods yet devised to "get the farmer out of the mud."

A highly successful road of this type has been in use for the past two years to connect the city of Ithaca with its new airport. A temporary salt road was installed while the airport was in process

of construction. Thousands of loads of "fill" moved over this highway, which will shortly be hard surfaced to join a permanent artery of travel.

More than one method can be used in applying the salt. One way is to mix the salt with the road material by blading, meanwhile sprinkling water on to moisten the mixture, and then rolling it to a firm surface. Another method is to build the road up in layers, interspersing a layer of salt with layers of road material. The salt thus laid soon permeates the entire mass by capillary attraction. About 12 tons of salt are used to the mile of an 18-foot highway, or about two pounds per square yard.

The salt draws the moisture from the air and keeps the surface moist. At the same time it reduces the film of moisture around each particle of clay, so that the clay packs down to a harder surface. Not only does the salt compact the clay, giving a concrete-like surface, but it also crystallizes on the road surface and retards evaporation of water from the road, thereby keeping the material underneath in a moist condition. Once the crystallization has taken place, the road sheds water during a rain and does not become slippery or muddy. It resists traffic abrasion to a marked degree.

The cheapness of rock salt is one of the great virtues of the salt-stabilized

## ● RADIO ●

Tuesday, August 13, 3:30 p. m., E.S.T.  
COLLECTING OLD HOUSES, by Dr. Laurence V. Coleman, Director, American Association of Museums.

Tuesday, August 20, 3:30 p. m., E.S.T.  
WHY WE NEED BIRDS AND MAMMALS, by Dr. Joseph Grinnell, Professor of Zoology, University of California.

In the Science Service series of radio addresses given by eminent scientists over the Columbia Broadcasting System.