

genital defect like harelip and is thought to be due to an arrested development of certain structures of the body. The first hair coat, which covers the body of a child before birth and is usually shed soon after birth, persists in cases like this of the Russian lad. The development of nails and teeth may also be faulty, and one authority questions whether such persons ever get a set of permanent teeth.

The condition is very rare. Perhaps not more than 30 unrelated families

having it are known. Most of the cases have been reported from Russia. In the Russian cases the hair is light, while in cases reported from India the hair was dark. Previous studies show that once the condition appears, it will very probably appear in the next generation.

The Kharkov boy's chances of making a living by appearing in circus side-shows is slim, because the Soviet Union does not countenance exhibitions of this sort.

Science News Letter, March 9, 1935

PUBLIC HEALTH

Big Increase Reported In Scarlet Fever

MORE cases of scarlet fever are being reported to the U. S. Public Health Service each week this winter than at any time since 1928. The increased prevalence of this disease is widespread. Over one hundred new cases were reported during one week from each of sixteen states. For the week ending February 23, latest for which figures are available, more than six thousand cases were reported.

This is less than were reported the week before, but health authorities believe the drop is only temporary. The peak in number of cases is not due for another two or three weeks. Scarlet fever cases always increase gradually from early fall until a high point is reached in the middle of March, when the number of new cases falls off sharply again. The present increase is considered the regular seasonal one, but it is much greater than any for the past six years.

Measles is also widely prevalent. Nearly as many cases are being reported this year as last, when the largest number ever recorded was reported.

The general deathrate and cases of meningitis and smallpox have all risen slightly this year. Health authorities are not worried about this, however, as the record good health of the country in 1933 and the early part of 1934 was so unusual that it could not be expected to last.

Science News Letter, March 9, 1935

ASTRONOMY

100-Inch Telescope Mirror Now Wears Aluminum Coat

THE GIANT 100-inch diameter mirror of the Mt. Wilson world's largest telescope now wears a coat of reflecting aluminum instead of conventional silver.

Dr. John Strong, California Institute of Technology physicist who developed the process for putting aluminum surfaces on glass mirrors in a vacuum, breathed a sigh of relief when the biggest job he has ever undertaken came to a successful conclusion.

Astronomers foresaw similar coating of the still larger 200-inch mirror now cooling at the Corning Glass Works. Moreover, they were remembering the potential savings of millions of dollars

PHYSICS

Ultraviolet Rays Audible With New Detecting Device

Old Tin Can and Jet of Water Used by Scientist To Determine Strength of Invisible Rays

AN OLD tin can, a bit of old rubber sheeting, a water jet, and a spark gap are essential parts of a new ultraviolet detecting apparatus developed by Dr. R. D. Summers of the physics department of the University of Pennsylvania (*Review of Scientific Instruments*, February).

With the simple and inexpensive equipment it is possible to hear the presence of the soundless and invisible rays which cause sunburn and likewise prove the presence of the still more piercing radiation from radium.

Dr. Summers took an old tin can, cut out the top and bottom and mounted a piece of rubber sheeting across one end. Placing the can on its side he directed a fine stream of water against it. When no vibrations were present the water jet hit the rubber and flowed silently to a collecting trough. Vibrations, however, make the water stream strike with less smoothness and—like the string and can telephone systems of boyhood—the sound comes out as a rattle and chatter.

The same sounds issue from the can when a source of ultraviolet light or radium rays is brought into the vicinity of the apparatus.

So sensitive is the device that the ultraviolet light from a match held several yards away can be detected.

The frequency of the clicks issuing from the apparatus, Dr. Summers finds, is a measure of the intensity of the ultraviolet light or of the radium rays.

Immediately adjacent to the water jet is a spark gap connected to a 2,000 volt source obtained from a small transformer like those used in lighting neon advertising signs and passed through a rectifying radio tube to convert it into direct current.

The spark gap is adjusted to a distance where the spark is just unable to jump the gap. Attached to one spark gap terminal is an electrode set close to the stream of water issuing from the jet. Being charged to 2,000 volts it attracts the water stream slightly.

As ultraviolet light or radium rays fall on the copper terminals of the gap electrons are emitted and the conductivity of the gap cut down. At the same time the electrical voltage on the gap is decreased. Hence the attraction of the terminal for the water jet is varied and the stream falls on a different place on the rubber sheet of the tin can.

It is the minute varied spraying of the water stream on the rubber—like a gardener watering a lawn—which creates the tell-tale sounds and thus detects ultraviolet light.

Science News Letter, March 9, 1935

The birthrate in England and Wales in 1933 was the lowest in the records of those countries.

Waterfowl that get their feathers soaked in oil-polluted water are apt to die from cold, starvation, or drowning.

for astronomy, for aluminum surfaces make telescopes work so much better that a 60-inch mirror instrument is as good as a 100-inch instrument. The difference in cost is nearly a million dollars.

Coating of the present world's champion telescope mirror with aluminum is the culmination of a series of experiments rushed through in the last few weeks.

Just a few days ago the 60-inch mirror at Mt. Wilson was aluminized and hurried back into place to test its im-

proved reflecting power. Ten smaller auxiliary mirrors have likewise been coated.

The previous champion of aluminized telescopes was the 36-inch mirror at Lick Observatory, also coated by Dr. Strong with his vacuum evaporation apparatus. This mirror was found to give fifty per cent. better reflection than ordinary silver for photographic purposes. The aluminum surface does not need to be re-applied frequently as does silver.

Science News Letter, March 9, 1935

Use of short-wave radio in medicine is no new thing; it has been successfully employed for several years in the treatment of certain diseases requiring a rise in temperature. Hitherto, however, the whole patient has been put into a state of "artificial fever." Dr. Nagelschmidt's advance consists in finding a method for localizing the effect.

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ARCHAEOLOGY

Cornfield Discovered Beneath Georgia Mound

AN INDIAN cornfield of the "deep South" so old that, after it was abandoned, an Indian mound was built on the furrowed ground, has been discovered near Macon, Ga., in perfect condition.

The cornfield reveals a system of cultivation known to the ancient mound builders of the South but entirely different from the typical Indian method of corn-growing. The field, discovered under the mound, was preserved through perhaps a thousand years by the sand mound raised over it and a thick cap of red clay loam over that which shut out rain and weather influences.

Discovery of the field is announced by Dr. A. R. Kelly, who has been mak-

MEDICINE

Short Radio Waves Used For Treating Parts of Body

SHORT radio waves promise speedy relief for the particular kind of painful and often disabling lame shoulder or elbow which physicians call bursitis. This new medical use of short radio waves was announced by Dr. Willis R. Whitney, vice president in charge of research of the General Electric Company.

Bursitis was described by Dr. Whitney as "sand in the human bearings." A bursa is a small closed sac. There are many of them in the body, generally lying between muscles and tendons, and containing a little thin liquid. Their function seems to be that of lubrication, making the motion of muscles easier. Stony deposits which may be seen by X-ray pictures are sometimes found in these sacs—the sand in the bearings. Injury, infection or unusual exercise of an arm or shoulder are thought to be causes of the condition.

Until recently surgical removal of the deposit with the bursa has been the best method of treatment, Dr. Whitney pointed out. It now looks as if surgery would be unnecessary in the future because enough heat can be induced in the body by high frequency currents to dissolve the lime deposits.

Dr. Whitney reported successful treatment of two cases of bursitis by his high frequency apparatus. Some years ago he developed a high frequency induction method of producing artificial fever for the treatment of paresis. Further research on high frequency currents led to discovery of their usefulness for treating bursitis.

Science News Letter, March 9, 1935

SHORT radio waves can now be used in medical treatment of selected regions of the body, by a technique developed by Dr. Franz Nagelschmidt of St. Bartholomew's Hospital, London, England. Dr. Nagelschmidt interposes a cylinder of wax and ebonite between the radio generator and the patient, localizing the heating effects of the radiations, which have wave lengths of from three to twenty meters (*Nature*, Feb. 23)



TREATING LAME SHOULDER WITH RADIO WAVES

Patients suffering from the painful, disabling kind of lame shoulder known as bursitis may be treated by short radio waves instead of surgical operation. The coil wrapped, around the shoulder of Dr. W. R. Whitney, General Electric Company researcher, carries the high frequency currents which induce enough heat in the body to dissolve the lime deposits that cause the trouble.