

A NEW X RAY TUBE.

In Photography, of recent date, is described a new form of X ray tube said to be peculiarly powerful in producing rays of remarkable penetration, and is designed by W. Watson & Sons, of London.

Many of the weak points which we have always grumbled at in such tubes have been rectified in this. For instance, although it is a little matter, the terminals are made of stout metal, and the electrodes are very widely separated. The internal arrangement of the tube is somewhat different from its predecessors. The cathode is a small one, and the anode consists of a ring mounted in line between the platinum disk, which is insulated from the anode and the cathode. It appears that the whole cathodic stream is concentrated by means of this ring upon the platinum, and the glow which is seen in the tube does not encircle the entire globe, but only the portion which is illuminated by the reflection from the platinum disk. The brilliance that the tube gives on the fluorescent screen is simply remarkable, while, for radiographing, those who have had opportunities of testing it say that the exposure is about half that previously necessary with the focus tube. We have seen a very fine radiograph of a man's heart taken with one of these tubes in fifteen minutes.

Finality has not been reached in tubes yet, but an advance of this description should not go unrecorded. The same manufacturers are also making a very useful rheostat to be used in the circuit between the battery and the induction coil. It is composed of a long coil of platinum wire which offers a great resistance to the current, and control is afforded by means of a connecting arm which rides above the coil of wire and is in contact with it.

A MODEL JOURNAL.

"The SCIENTIFIC AMERICAN is now in its fifty-first year of publication. In celebration of its fiftieth anniversary a special edition of 72 pages was issued reviewing the great inventions of the last half century, and the discoveries that have been made in science since the first number of the magazine was published.

"No expense was spared to make that number in every way worthy of the occasion, and all in all it reflected much credit on every one who took part in its getting out. In text and typography every item was up to date, the former covering about the whole field that has been added to our knowledge during the last fifty years. The number itself, full of half tone illustrations made by one of the labor saving modern inventions, and the price at which it is sold are of themselves impressive testimonials of our advancement in the typographical art. Of all weekly publications of its kind the SCIENTIFIC AMERICAN is certainly at the head of the procession."—The Trade Postal Journal, San Francisco.

Thank you, Mr. Editor, for your kindly notice, and to the more than three thousand of our contemporaries for mentioning in their columns their appreciation of our anniversary number.

And for the further courtesy of our confrères in recommending their readers to become subscribers to the SCIENTIFIC AMERICAN, we add the suggestion that every public library and school in the land should



A NOTABLE COLLECTION OF NEWSPAPERS.

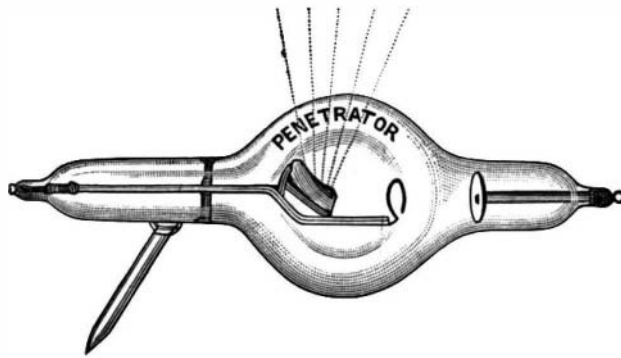
keep the paper on file, for the beneficial influence it exerts on the community.

The above half tone engraving was made from a photograph of the pile of newspapers which came to this office, exclusive of monthly magazines and foreign exchanges, containing notices of the anniversary issue.

THE degree of LL. D. has been conferred by Harvard University on Prof. Alexander Graham Bell.

Kitasato's Work in 1895 in Serotherapy.

Kitasato has collected from reliable sources 26,521 cases of diphtheria in Japan previous to serotherapy, with 14,996 deaths (56 per cent); while of 353 cases treated here from November, 1894, to November 25, 1895, there were only 31 deaths (8.78 per cent). There is reason to believe that the mortality can be lowered if the treatment could be commenced early in the course of the disease. Thus in 110 cases in which injections were made within forty-eight hours after the invasion all ended in recovery. On the other hand, of thirty-three cases treated after the eighth day of the disease, eleven were lost. Some of the patients were brought



AN IMPROVED ROENTGEN TUBE.

into the institute in a moribund condition, and six children died within five hours after admission, six more within ten hours; altogether, twenty-one cases (two-thirds of the total mortality) were lost within the first twenty-four hours. As to the effect of the serum on the course of the disease, the first to be noted is:

1. The fall of temperature; in many cases the deferescence was almost critical, and it takes place usually at the end of twenty-four to forty-eight hours.
2. The separation of the false membrane, which takes place as a rule after the return of the temperature toward the normal. Very large casts of the trachea and larger bronchi have been coughed up.
3. Urticaria-like eruptions were observed in very many cases, being in some quite severe and annoying. They, however, disappeared in a few days without any treatment.
4. In four cases marked albuminuria was observed at the time of admission. In these cases albumen disappeared from the urine in the course of the treatment. Pyrexia was accompanied by albumen in the urine, but there was no reason to believe that any renal trouble was caused by the injections.
5. Five cases developed paresis of the soft palate. I wish to note, in conclusion, that microscopic as well as culture examinations were made in every case, and Dr. Kitasato's report only deals with those cases in which Loeffler's bacilli were demonstrated to be present.—Dr. Nakagawa, in London Lancet.

Common Poison Plants.

The Department of Agriculture at Washington is shortly to publish a large illustrated report on poisonous plants, and we are told by the Washington correspondent of the Boston Evening Transcript, who sends to his paper (September 19) an interesting letter on the subject, that it is making original analyses and tests of supposed poisonous plants that are submitted to it, with a view to accounting for many of the mysterious deaths reported every summer from eating unknown plants or roots. The correspondent adds some paragraphs about common poisonous plants, one or two of which we quote below. He says:

"The woods, the meadows, and even the gardens are full of poisonous plants which people generally have no suspicion of. It was never imagined that the common elder was dangerous until two years ago, when five boys near Tarrytown, N. Y., mistook some of the rootlets for sassafras and gnawed the bark. They were all dead within a few hours. . . .

"How many persons . . . are aware that buttercups are poisonous? Yet it is a fact that these blossoms are very dangerous. No cow will eat them, and hence the old notion that the color of butter was produced by buttercups must fall to the ground. Cows do not hesitate to eat hay that contains dried buttercups, because in that condition the flowers are harmless; the poisonous principle, being volatile, has disappeared. . . .

"Fully half of the laurels and rhododendrons are poisonous. 'Lambkill,' so fatal to sheep, is one of the laurels. Trailing arbutus belongs to the same family, but is harmless. . . . The root of the common kidney bean is a powerful narcotic. Comparatively well known as a dangerous plant is the 'jimson weed,' which is often seen by the roadside, conspicuous by reason of its big white flowers. . . .

"One of the wickedest of plants is the water hemlock, which grows rank in moist places; its fleshy roots are agreeable to the taste, though fearfully poisonous; they are rendered yet more dangerous by their resemblance to parsnips and to the roots of the esculent 'cicely,' found in similar localities. The meadow hemlock is believed to be the plant that furnished the poison

of which Socrates partook when condemned to death; it grows in fields by the sea and on mountain tops also, bearing large clusters of tiny white flowers; the poison causes headache and imperfect vision, with loss of power to swallow; in large doses it paralyzes the nerves and breathing muscles. The bulbs of daffodils have been boiled in soup by mistake for leeks, with fatal results; to chew even a small bit of one of the flowers is perilous. The bark and seeds of the laburnum are both poisonous.

"One is surprised to learn that many common garden plants are dangerous. The leaves and stems of the potato have narcotic properties. The berries of the potato are extremely poisonous. The skin of old and sprouted potatoes contains a specific poison known as 'solanin.' The young and unripe potatoes which are esteemed such a delicacy in spring by people who can afford to buy them are poisonous raw, but cooking makes them harmless. The flowers of the jonquil, snowdrop and white hyacinth are all bad. The narcissus is particularly deadly; to chew a small scrap of one of the bulbs is apt to be fatal, while the juice of the leaves is an emetic. The berries of the yew have killed many people. Sorrel is sometimes eaten in salads, with distressing results. It is pretty well known nowadays that it is not safe to eat many peach pits or cherry kernels at once."

We have not space to quote the whole of this indictment of the common plants and flowers by modern science. Suffice it to say that it includes the lobelias, wild parsnips, lady's slipper, horse chestnuts, lily-of-the-valley (said to be "fearfully poisonous"), jack-in-the-pulpit, poke root, autumn crocus, the leaves and flowers of the oleander, the bark of the catalpa, the monkshood, and the foxglove, not to mention many varieties of mushroom, some of which, as is well known, are among the most virulent of poisons. In fact, after reading this article one is almost afraid to let a little child run alone into the fields, or even into a flower garden.—Literary Digest.

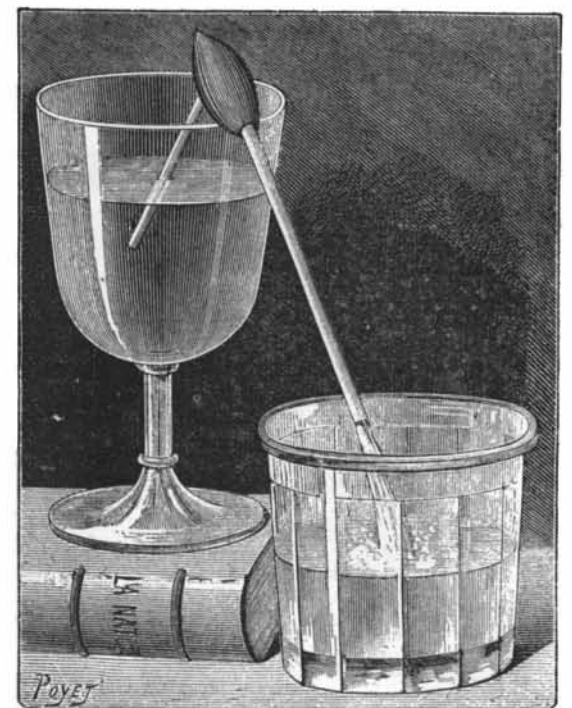
Large Granite Block.

Much inconvenience is experienced in finding a railroad route from Bellows Falls, Vt., to New Orleans having bridges high enough for the largest block of granite ever quarried in Vermont. The block is 15 feet square and 3 feet thick. It is intended for the noted Moriarty monument in that city. It was quarried in Barre, and has been moved to the dressing sheds. A special car is being built by the local roads, on which it is intended to set the block on edge, allowing the lower side to swing through the bottom, extending to within 8 inches of the rails. The weight of the block exceeds 50 tons. Investigation shows that most routes have bridges too low for the block to pass through.

SIPHON MADE OF A STRAW AND A PEACH PIT.

Bore two holes at right angles in a peach pit, and into each of them fit a straw (one of the straws being longer than the other), and make the joints tight with wax. It will suffice to suck through the longer straw in order to prime the siphon thus formed and cause the liquid to flow.

The same result may be obtained by beveling one of



SIPHON MADE OF A STRAW AND A PEACH PIT.

the extremities of each of the straws and then uniting the latter with a little modeling wax.

We are indebted for the cut and description to La Physique sans Appareils, by Gaston Tissandier.

WE learn from La Vie Scientifique that M. Etienne will shortly introduce in the French Chamber a bill introducing the decimal subdivision of time.