

The Treatment of Neuralgia.

Aconite is an old remedy in neuralgia, which has, however, not altogether realized the expectations which were formed of its value. The power which it often lacks has been lately claimed for its alkaloid by Professor Gubler, who announced that aconitia is almost infallible in trigeminal neuralgia. This substance was long banished from the materia medica for internal use, but it has been employed occasionally since the discovery of a crystallized form by Gréhaud and Duquesnel in 1871. Its value in neuralgia has lately been investigated by the New York Committee on Neurotics, of which Dr. E. C. Seguin is the chairman. The dose of all forms of aconitia is about the same, the initial dose being about half a milligramme ($\frac{1}{10}$ grain) twice or thrice a day. Gubler states that the dose of amorphous aconitia may be gradually raised to half a centigramme, but Duquesnel's preparation has to be given with greater caution. There are, however, differences in susceptibility, and some persons cannot bear a larger dose than $\frac{1}{10}$ of a grain; while one case was met with in which $\frac{1}{4}$ of a grain every three hours was tolerated.

From a trial of the treatment in a series of cases, the committee conclude that, on the average, distinct physiological and therapeutical effects may be obtained by giving $\frac{1}{10}$ of a grain three times a day. Of six cases of severe trigeminal neuralgia, one, probably a reflex neuralgia from a decayed tooth, was not at all benefited. Three cases of epileptiform neuralgia were slightly or only temporarily relieved. Two cases were cured. One of these had existed for seven years, with an interruption of seven months, procured by resection of the affected nerve. The results thus afford a partial support to M. Gubler's assertion.

The value of ammoniacal sulphate of copper in the treatment of the same affection has been asserted by M. Féréol in a recent communication to the Académie de Médecine. He states that in cases in which every treatment has failed, even the administration of gelseminum and of aconitia, a cure or remarkable relief may be obtained to the most severe symptoms by this drug. Among the examples he gave of its use was the following: Trifacial neuralgia of two months' duration, with absolute (?) insomnia, was unrelieved by the extraction of teeth, quinine, bromide, aconitia, or tincture of gelseminum, hypodermic injections of morphia, or arsenic. From the first day of the administration of the ammonia sulphate of copper there was a notable remission in the symptoms and cessation of the insomnia. In one case the dose was pushed to eight grains without any other accident than nausea. It has the drawback of occasioning a persistent metallic taste in the mouth. Only one case of intolerance was met with; in that a grain and a half of sulphate of copper occasioned violent vomiting.—*Lancet*.

Chinese Physicians.

According to the *National Medical Review*, when the Chinese physician examines the pulse, he places the arm of his patient on a cushion; then he applies the index, the middle and ring fingers on the anterior face of the wrist in such a way that the index finger may be nearest the arm, and the ring finger nearest the hand. The physician then elevates and depresses each finger, alternately, with more or less force, like one playing on an organ. They examine, also, during a limited number of respirations, each of the nine pulses, which are formed, according to their doctrine, on each hand, and they deduce from these their prognosis, at once, without hesitation; make their prescriptions, and attend to administering their medicines on the spot; receive the fee and retire, not to return unless again summoned.

The Chinese physicians imagine a multitude of odd connections between the viscera of the human body and the elements, the seasons of the year, the stars, colors, etc. The heart, they say, is analogous to fire, to the planet Mars, to summer, to spring, and to southern climes. It comes from the liver, begets the spleen and the stomach, is antipathic with the kidney, and receives no injurious influence from its contact with the lungs.

During the springtime the pulse is like a tense cord; in summer it is more developed and becomes exuberant; in autumn it appears as if floating; in winter it is rather quiet.

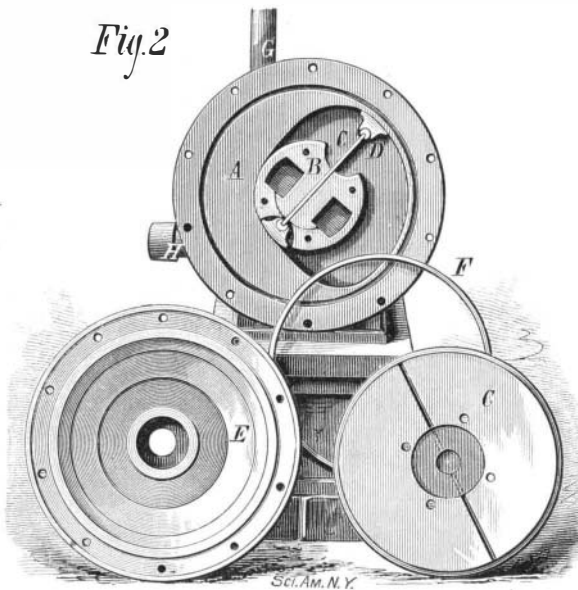
They think that the spirits and the blood, both vehicles of heat and humidity, run through all parts of the body in twenty-four hours. This daily circulation, they say, commences in the lungs at 3 o'clock in the morning, and ceases next day at the same place and at the same instant. The knowledge of the canals through which this is effected constitutes, in the eyes of Chinese physicians, the fullness of anatomical knowledge.

They count six canals which pass directly from above downward, and an equal number which return from below upward; eight canals run transversely, and fifteen obliquely.

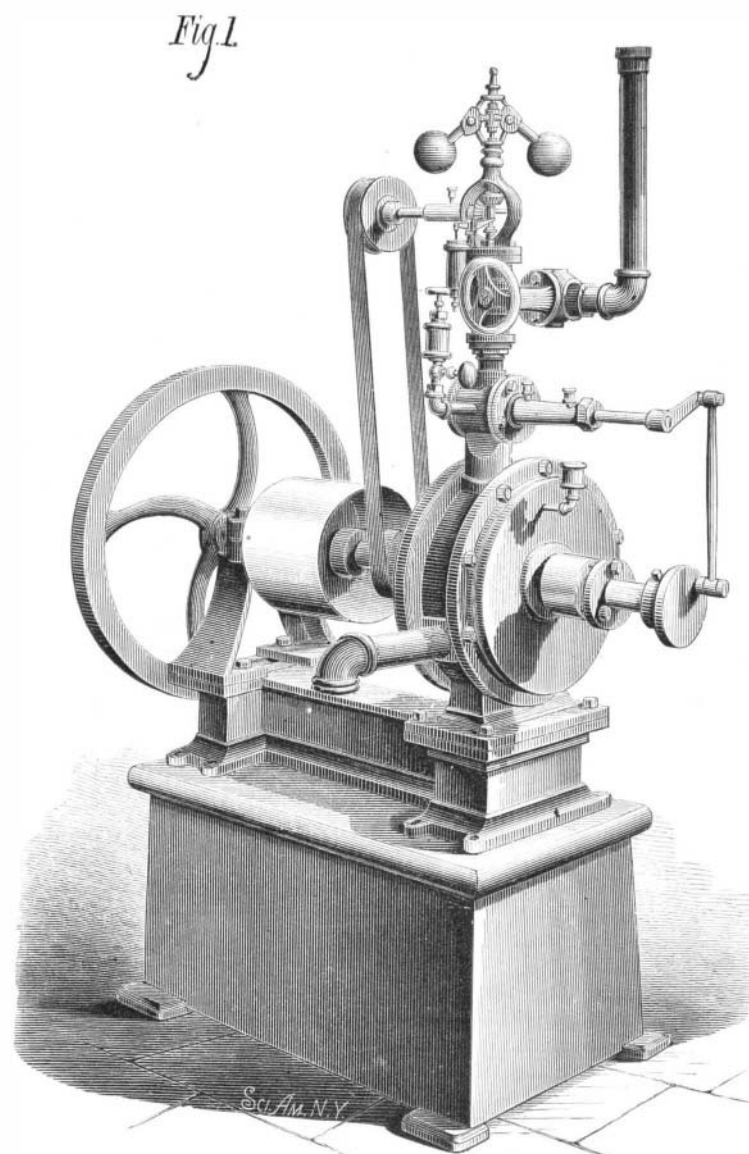
A NEW ROTARY ENGINE.

The construction of rotary steam engines has received the attention of many of the best engineers and mechanics, with results that have usually proved anything but satisfactory. However, it is claimed by the manufacturers of the engine shown in the accompanying engraving that, after having several of them in use at their own factory and in various other places, they are satisfied that it is practical and that it must for many uses supersede the reciprocating engines.

The case, A, contains cams and abutments, and the cylinder, B, has attached to it the heads, C C, which rotate with

**ROTARY ENGINE.**

it when the engine is in motion. The blade, D, is provided with packing saddles or shoes at each end. The cylinder has packing rings, F, and the outside heads, E, are recessed to admit the cylinder heads, C, and are bolted to the case in the ordinary way. The cylinder, B, and the rotating heads, C C, are slotted for the accommodation of the blades, D. Steam being admitted at the steam port, G, forces the extended end of the blade around to the exhaust port, H; before reaching this point, however, the blade passes up the cam, and is shifted endways through the cylinder, B, so that when the upper end of the blade, D, reaches a position in front of the port, G, the expanded steam is exhausted through the pipe, H, and the motion is continued as before, the blade passing around the inside circle of the case, A, and up through the cylinder, B, as it moves forward. The packing rings are placed in a suitable groove in the case, and are pressed against the cylinder heads by means of steam which is admitted through a small passage extending from the steam port to the back of the rings. The saddles at the

**NOTEMAN'S ROTARY ENGINE.**

ends of the blades are attached to the blades by means of a knuckle joint which allows them to adjust themselves to any angle of the wearing surface of the case; the pressure when at work, always keeps them packed against the case, so that the wear of the saddles or case is taken up and a perfect steam joint always maintained. The cut off, as shown in Fig. 1, is a novel feature in this rotary engine; as the steam is exhausted but twice to a revolution, it is perfectly practical, and may be set to cut off the steam at a third or half the stroke, as may be desirable, thus utilizing the expansive force of the steam. One notable point in this engine is the absence of springs or any kind of soft packing. The manufacturers state the joints are so well protected that there is no possibility of the escape of steam until it has done its work.

This engine is the invention of Mr. Alonzo Noteman, of Toledo, Ohio, and it is manufactured exclusively by Messrs. D. E. Saltonstall & Co., of the same place.

Legal Practice in London.

In the legal profession in England there are three distinct and well defined branches of practice; and the boundary lines of the several spheres of enterprise may not be overstepped. The solicitor transacts ordinary business, and advises his client, both as to the avoidance and the redress of grievances. He asserts the rights of the layman who intrusts his interests to his keeping, and avenges the wrongs inflicted upon him by others, so far as these functions can be performed with the aid of the ordinary appliances which the law affords. When matters become more complicated than the simple remedies will suffice to cure, the solicitor seeks the aid of counsel. The client cannot go directly to the latter to the prejudice of the general practitioner at law; nor can counsel transact ordinary business for laymen, however willing they may be to pay his fees or secure his services. An opinion may of course be obtained on the most trivial subject, but the case must be submitted through a solicitor, or counsel cannot entertain it, so that the wider professional interests are duly protected. There is a still more exclusive class of practitioners, who act solely as consultees and leaders—the Queen's counsel—who are prohibited from appearing in most cases before the courts without a junior. By this simple but effective organization of labor, any unseemly conflict of aims and interest is prevented, and the public benefit, not less than the profession, by the arrangement made and carried out.—*Lancet*.

New Pigment Process for Enlargements.

The *Association Belge de Photographie* publishes a pigment process by Dr. Van Monckhoven, which is especially adapted to solar enlargements. He dissolves wax in benzene, charges a small quantity of cotton with the solution, and applies the latter to a light piece of plate glass. The plate is then provided with a coating of collodion or varnish, and then immersed in water for thirty minutes. It is then taken out and placed flat upon a table, where it is coated with a mixture consisting of a colored pigment, gelatine, and bichromate of potassium, which having become firm, the plate is allowed to dry in the dark. In place of this (in addition to this) Monckhoven usually takes pigment paper, sensitized in the usual manner by dipping in a solution of bichromate of potassium, places it upon the collodionized surface of the plate—previously moistened with water—rubs it down in order to obtain perfect adhesion, and finally leaves it to dry. The plate is then exposed in the solar camera (enlarging apparatus) by allowing the picture rays to act, through the plate, upon the film treated with bichromate. The exposure is regulated by the assistance of the photometer. The plate is subsequently immersed in warm water of 30° for fifteen minutes, then in water of 60°, after which the sheet (paper) is detached, and the picture developed in the usual manner. It is then fixed, and a piece of white gelatine paper is finally affixed to the picture by means of the roller. When this has become perfectly dry, the picture is detached. If white gelatine paper be used, which is very brilliant (glossy), the picture will retain its smooth appearance even if it is mounted on cardboard. If, on the other hand, dull looking gelatine paper be employed, the picture will have the appearance of any ordinary print obtained by single transfer. Relative to this process, Monckhoven declares the exposure of the pigment film as adhering to the plate to be essentially new. The following advantages are claimed:

1. The net-like appearance of the pictures and the spontaneous insolubility of the chromo-gelatine will be avoided.
2. A perfect evenness (uniformity) of the paper, and a greater durability of the same, are obtained.
3. All drawbacks of the single transfer process, as imperfect adhesion, air bubbles, and other casualties well known to persons using the pigment process, are successfully avoided.
4. The resulting prints remain perfect, and the pictures are clear and sharp beyond comparison.

Spiders and Ants—Island of St. Thomas.

A large ground spider (*Lycosa*) is very abundant in the island, inhabiting a hole in the ground about six inches in depth and from half an inch to an inch in diameter, and with a right angled turn at the bottom to form a resting chamber for the spider. Some negro boys dug the spiders out for me. They said that their bite was poisonous, and that they fed on lizards, leaving their holes at night to search for them.

The boys soon grubbed one out with a knife, a great heavy venomous-looking brute about three inches across. It bit savagely at my forceps. The holes of these spiders were so common that on one tolerably clear patch of about an acre in extent they were dotted over the entire area at about one or two feet distance from one another. I noticed the holes at once, and was astonished when the boys told me they were spiders' holes.

A species of white ant (*Termite*) is very common, which makes large globular nests as much as two feet in diameter, and which are perched high up in the fork of a tree. The nests are made of a hard brown comb. From the bottom of the tree covered galleries, about half an inch in breadth, lead up on the surface of the bark to the nest, looking like long narrow brown streaks upon the trunk of the tree. The galleries usually follow a somewhat irregular course up the trunk to the nest, reminding one of the curious deviations which are always to be seen in foot-paths cut out by people walking across fields, in their endeavors to go straight from one point to another. The galleries, or rather tubular ways, for they have bottoms to them, are made of the same tough brown substance as the nests, and are cemented firmly to the bark. Though they are so broad in order to allow numerous ants to pass and repass, they are only high enough for the ants to walk under. I broke one of these galleries, and a number of soldier termites came out and began biting my hands, hardly making themselves felt, but as brave as if they had a sting. I had to break a considerable length of the gallery before I got to any of the working termites, as they had retired from the scene of danger.

A species of peripatus is found in St. Thomas, but I did not succeed in meeting with any. An agouti, a species of rodent (*Dasyprocta*) occurs in the island, and Mr. Wyman told me that it was common in the gullies near his sugar plantation.—H. N. Moseley, "Notes by a Naturalist."

THE CYCLODES.

The cyclodes are so called on account of their teeth, the crown of which is rounded, and which reminds of the sharp and cutting teeth of other reptiles that belong to the same class. The cyclodes have a large round trunk, which diminishes regularly from the neck to the extremity of the tail. The tail and body form one piece. The snout is blunt and the tongue is flat, is covered with scales, and has the shape of a lance, with an incision at the end. The eyes are oval and oblique, and are behind the mouth. The neck is very short and narrow. The body is covered with smooth scales arranged like a coat of mail. The claws are small in proportion to the size of the body. The fingers are short, plump, and nearly cylindrical. Three species of cyclodes are found in New Holland—the cyclode of Casnarina, the black and yellow cyclode, and the cyclode of Boddaert.

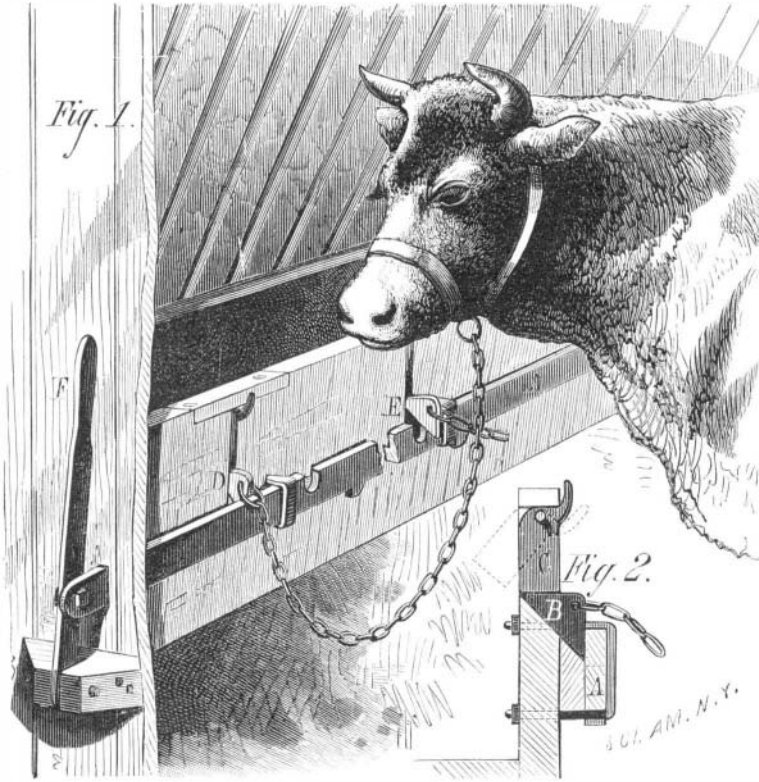
The giant skink, or the cyclode of Boddaert, is shown in the engraving. It has a more elongated head than the other two species. The upper part of the body is marked with transverse alternating fawn colored and brown stripes. Sometimes these stripes pass down the sides, when the brown or black ones are covered with large yellow spots. Back of the eyes there is a dark stripe which extends as far as the shoulders. In some of the animals the top of the head is reddish, while in others it has a black border. This species attains a length of about fifteen inches.

Like most of the skink family it is very slow in its movements and will lie for hours perfectly immovable, and generally prefers warm and obscure places. While walking the belly drags along the earth, for the legs are short and too feeble to support the body. It lives on pulpy fruit, small animals, and young birds.—*La Nature.*

FASTENING AND RELEASING DEVICE FOR CATTLE STALLS.

The practical value of inventions of the class represented in the accompanying engraving can scarcely be overestimated. The frequency of fires and accidents which imperil cattle and horses imprisoned in stalls, has rendered something of this nature an absolute necessity, and its convenience in every day use is worthy of consideration.

The front board of the troughs, or the head walls of a series of stalls, are all arranged in line, and a horizontal continuous bar, A, extends through all of the stalls, and is supported by staples or keepers, and provided with a stop pin



WATTERS' FASTENING AND RELEASING DEVICE.

which limits its motion. In the headwall, or in the front of the trough in each stall, there is a vertical recess having an inclined bottom running out into the stall. In the upper part of this recess is pivoted a gravity catch or detent, C, which extends downward into the recess just far enough to leave a triangular chamber for receiving the triangular bit, B, which is attached to the end of a chain or rope about the animal's neck. This arrangement is clearly shown in Fig. 2. It will be noticed that the bar, A, extends along in front of the recess which contains the bit, B, and in conjunction with the gravity catch retains the bit.

In the bar, A, there are notches corresponding in position with the recesses in the troughs, and at one end of the bar there is a lever, F, by which it may be moved longitudinally.

There are two ways of releasing the animals. If only a portion are to be released, or if it is desired to release them separately, it may be done by throwing up the gravity catch as shown in dotted lines in Fig. 2. When it is desired to

This device has met with the approval of farmers' clubs and farmers who have examined and tested it. Further information may be obtained from Mr. James D. Watters, of Bel Air, Md.

Experiments in Cross-Breeding Plants.

Professor W. J. Beal, desirous of testing the accuracy of some of the statements in Darwin's work, "The Effects of Cross and Self Fertilization of Plants," has been making some experiments, the results of which he records in the *American Journal of Science and Arts*. His first experiments were with Indian corn. Yellow dent corn was obtained from two men in different parts of Michigan. In one case the corn had been kept ten years or more on the same farm, and in the other instance fifteen years or more on the same farm. In both cases the corn was much alike. The two lots were planted in alternate rows in a plat by itself. The tops of one set of rows were all cut off, thus securing a perfect cross on those stalks. Seed from this cross was saved and planted to compare with corn not so crossed. The yield from the crossed seed exceeded the yield of that not crossed, as 153 exceeds 100.

The next experiment was with black wax beans, a variety much cultivated for the purpose of supplying an early crop, and a kind that may be eaten, pod and all, while young. Eight rows were planted, alternately old and crossed stock, and fifteen beans planted in each of the rows. This was on May 31, 1878. On the 22d of July the pods on the two lots of plants were about alike in size, but those fit for cooking numbered 108 on the old stock, and 353 on the crossed; a difference of over three to one in favor of the crossed stock. On August 9th the pods fit for cooking, or past that condition, were 883 on the old stalk and 1,048 on the crossed. On or before the 16th of September all were harvested. The total number of pods was found to be, on the old stock 818 and on the crossed stock 1,859. The beans of the old stock weighed 29.77 ounces, while those of the crossed stock weighed 70.33 ounces, or nearly in the proportion of 100 to 236. Six lots of fifty beans each were taken at random from the old stock, weighed, and the average for fifty found to be 269½ grains. A like experiment with the crossed stock gave an average of 213½ grains. The average weight of an equal number of beans from each stock was nearly as 100 to 79 in favor of the old stock.

Poisonous Properties of Laburnum.

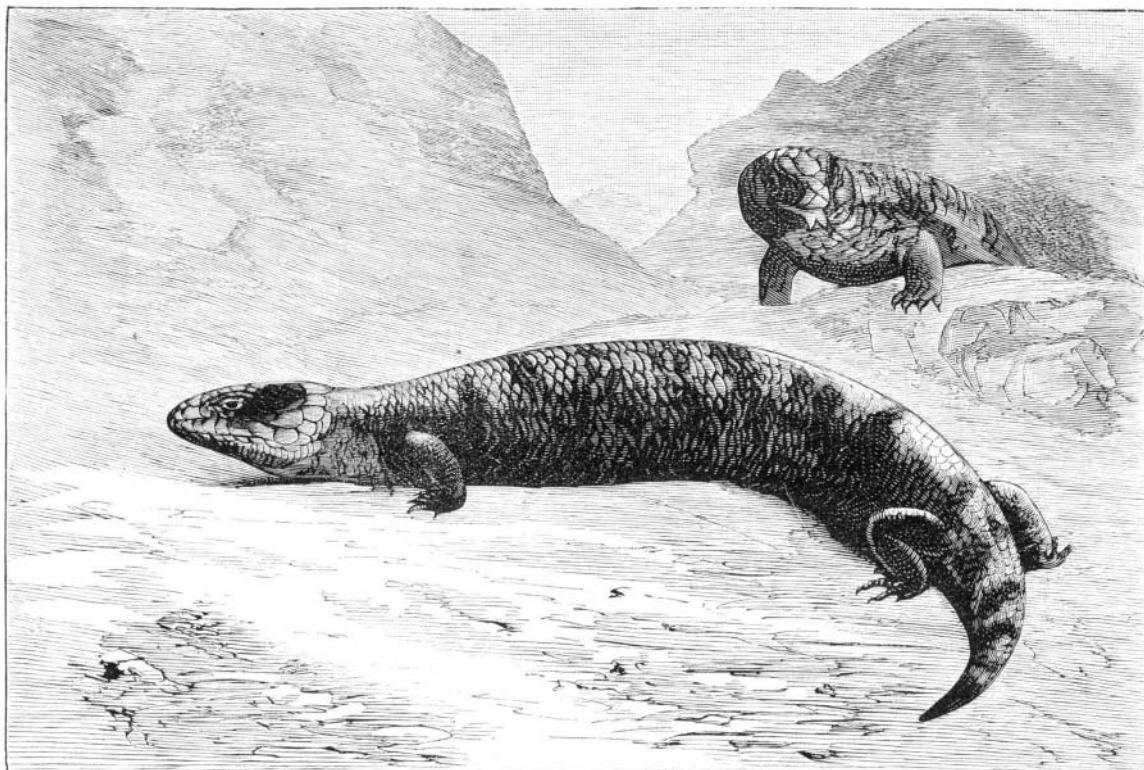
The laburnum (*L. vulgare*), a small ornamental leguminous tree very common in our gardens under the name of "golden chain," is quite a favorite with both young and old on account of its being an early bloomer, as well as because its flowers are very pretty.

A writer in the *Gardener's Chronicle* calls attention to the fact that the seeds of this plant act so violently as an emetic that they are justly deemed poisonous, but it seems very little known that all the parts of this tree—leaves, flower pods, and even the bark and roots—are highly dangerous and contain the *cytisin* discovered by Husemann and Marne in 1864.

A dose of 0.03 of a gramme injected under the skin is sufficient to cause the instantaneous death of a dog or a cat. Dr. Christison was the first who observed the fatal poisoning of a man by cytisin, and more than a hundred cases of poisoning by this alkaloid, of which the majority were fatal, have been recorded in medical literature. Children particularly, who had eaten of the pods or seeds of laburnum (ten seeds kill a child), but also adults who by mistake had taken flowers of this plant instead of false acacia to prepare a tea, were dangerously affected. The symptoms of this kind of poisoning are not at all characteristic, and unfortunately no antidote is as yet known for it.

Japanese Cement.

Mix the best powdered rice with a little cold water, then gradually add boiling water until a proper consistence is acquired, being careful to keep it well stirred all the time; lastly, it must be boiled for one minute in a clean saucepan. This glue is beautifully white and almost transparent, for which reason it is well adapted for fancy paper work, which requires a strong and colorless cement.



CYCLODE OF BODDAERT, AT THE JARDIN DES PLANTES, PARIS.

loosen all of the animals as quickly as possible, as in a case of fire, the bar, A, is moved longitudinally by means of the lever, F, bringing the notches in the bar opposite the bits, B, as shown at E (Fig. 1), permitting all of the animals to escape simultaneously.