

**THE CLAMOROUS FROG.**

BY C. FEW SEISS.

This frog, first described by Merrem as the *rana clamitans*, is a widely distributed species, and, although numerous in many sections of this country, is commonly supposed to be the young of the bullfrog (*rana catesbeiana* of Shaw). It is, however, a distinct species.

There is one strong specific character in the clamorous frog by which it can always be identified, namely, the elevated fold of skin which originates behind each eye, passing over each tympanum, and disappearing near the bend of the back. These cutaneous elevations are always present in the clamorous frog, even in quite immature animals, while they are never found in the bullfrog at any age.

I have seen specimens of this frog colored almost exactly like the bullfrog, so color alone cannot be taken as a criterion in the specific identification of frogs; nor can it in the majority of animals.

I subjoin descriptions of three living specimens of *rana clamitans*.

No. 1 (male). Form rather robust; snout somewhat pointed. Head, anterior part of body above, and back of tympanum, bright green; posterior portions of the back and sides pale olive brown, or light greenish brown. Arms and legs pale olive brown. Upper posterior surface of body and legs, also the sides, spotted with small pale blackish-brown blotches and spots; nates mottled darker brown and white. Tympanum almost twice the size of the eye, bronzed, with a light green center. Throat lemon-yellow, passing into yellowish white on the abdomen. A few dark marks on the upper jaw. Body and posterior extremities slightly tuberculous. Latero-dorsal cutaneous ridges prominent, extending from orbit to bend of back. Length, from tip of snout to vent,  $2\frac{1}{8}$  inches.

No. 2 (female). Snout less pointed than in No. 1. Head, and anterior part of back, grass-green; posterior part, and legs, olive brown, much darker than the preceding. A few blackish brown spots on the rear back. Legs barred with black-brown. Sides spotted black and white. Labials marked with blackish brown wavy lines, inclosing whitish spot. Tympanum but little larger than the eye. Nates

and latero-dorsal ridges, as in the male; the brown mottling of the nates darker, almost black. Skin more or less tuberculous. Length  $2\frac{1}{4}$  inches.

No. 3 (female). Before each orbit, below each nostril, a large green spot. Rest of head and fore part of body, dull olive green, with a tinge of brown. Remaining parts as in No. 2, but the colors paler and the markings less distinct.

The male, as described above, was called the spring frog, *rana fontinalis*, by LeConte, Holbrook, and DeKay; and the green and yellow frog, *rana flavi-viridis*, by Harlan. Holbrook says the spring frog is only found in cold spring water.

bly swallowed head foremost, and the devourer presented a ludicrous appearance, when a posterior extremity of the unhappy young frog protruded from either side of her mouth, having the appearance of a huge waxed moustache.

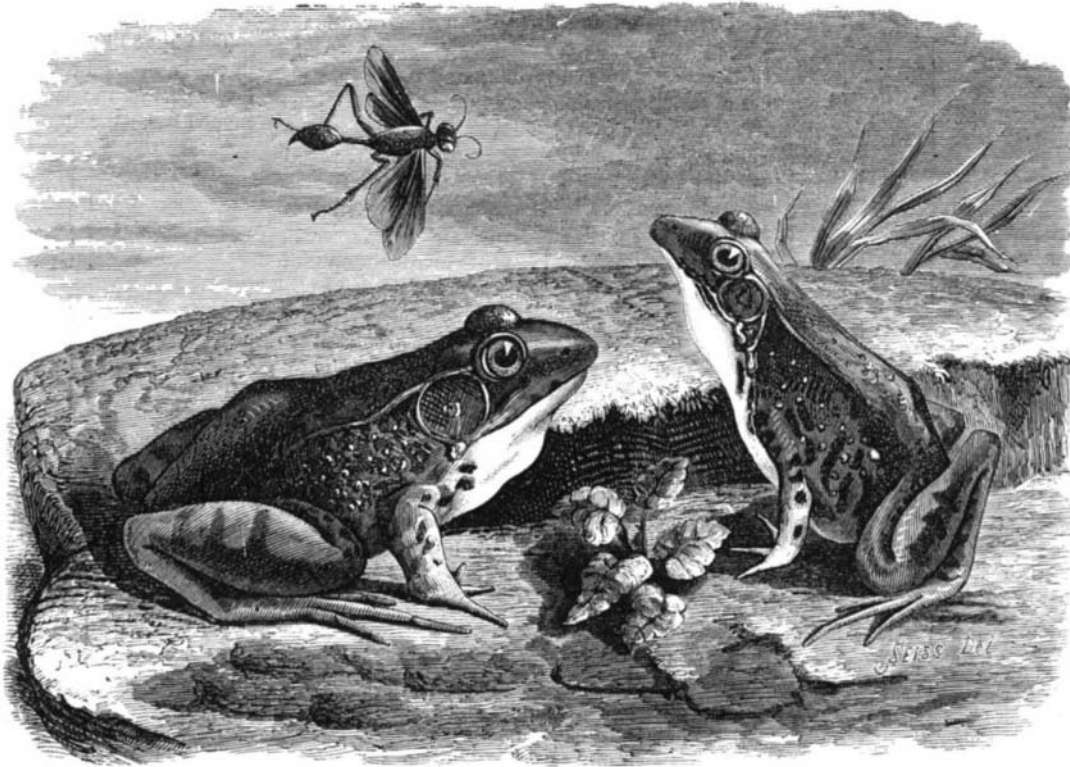
**Electricity of the Heart.**

Muscular contraction, it is known, is always accompanied with electric phenomena; the difference of electric potential between two points of a muscle, undergoes a diminution, which, according to Bernstein, precedes, by about one one-hundredth of a second, the contraction of the muscle. This electric variation has been observed on various muscles, and in particular on the heart (by Du Bois Reymond and Kühne), and recently M. Marey has represented it graphically by photographing the indications of a Lippmann capillary electrometer. The *Journal de Physique* states that M. De la Roche has tried the experiment on the heart of a living man. Two points of the epidermis of the chest were connected with the poles of a capillary electrometer, by means of electrodes, formed each of a bar of amalgamated zinc, with a plug of muslin at its lower end saturated with sulphate of zinc. Held with insulating handles, the bars were applied, one with its plug opposite the point of the heart, under the left nipple, and the other to another point of the chest. The mercurial column was then seen to execute a series of very distinct periodical pulsations synchronous with the pulse; each pulsation even marked the double movement of the heart (of the auricles and ventricles). The amplitude corresponded to about

one one-thousandth Daniell.

**THE IWAKUNI BRIDGE, JAPAN.**

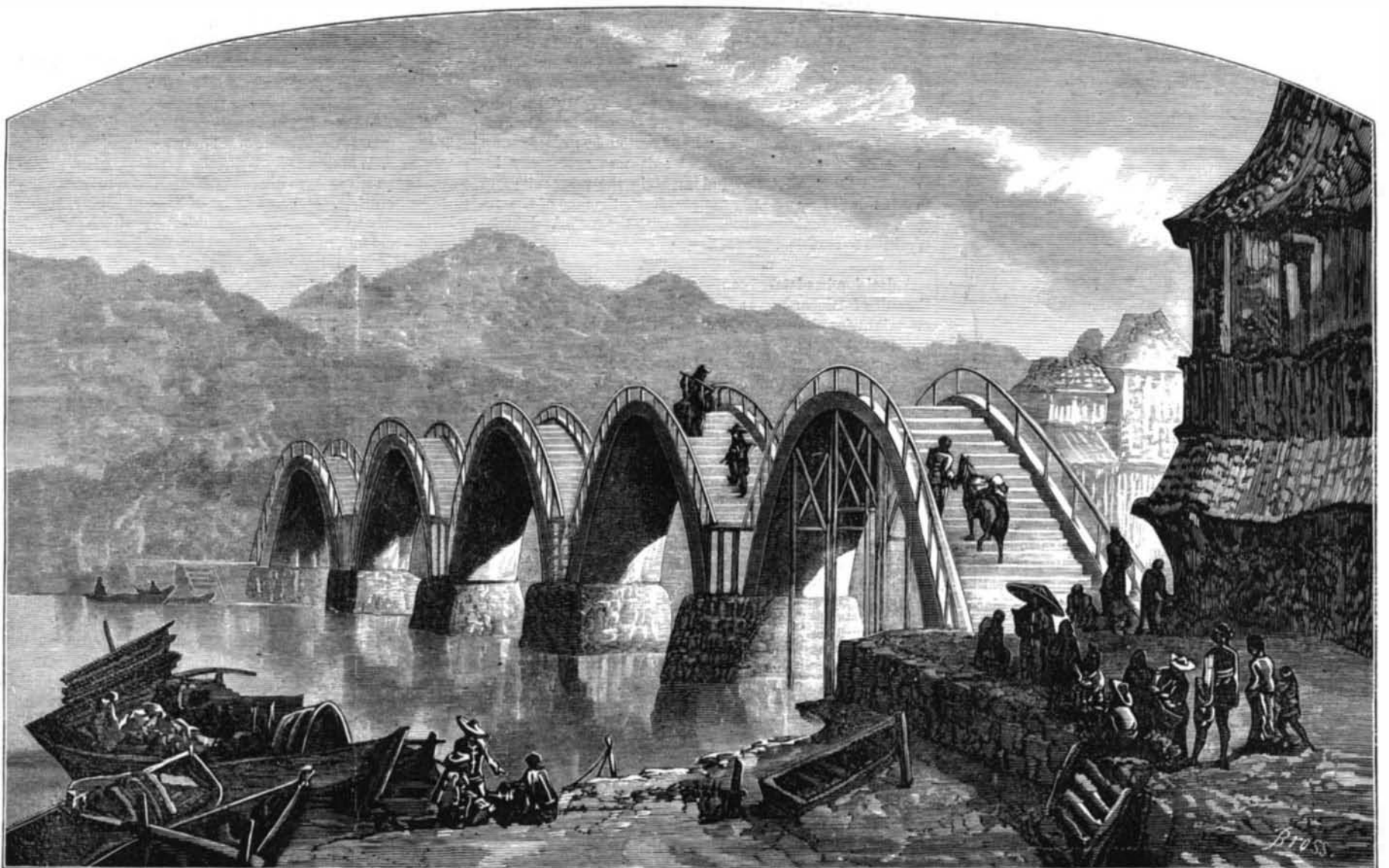
We are indebted to the *Illustrated Adelaide News* for the annexed engraving of a very curious bridge, in existence near the town of Iwakuni, Japan. The structure is simply a series of arches from pier to pier, but instead of filling up the space between the arches to the tops, or bridging across from summit to summit, and thus providing a straight and level pathway, the designer has placed steps on the arches themselves, so that the traveler is obliged to ascend and de-



**THE CLAMOROUS FROG.**

The typical *clamitans* I have found to be the most common about ponds and streams, and our spring frog was captured in a creek, far distant from any spring. Its abrupt croaking note is exactly similar to that of the other. Its habits are the same, and I have witnessed a male of this variety embracing a female of the typical variety, *clamitans*.

The food of the clamorous frog is various. Insects of all kinds, crawfish, worms, salamanders, and small frogs, I have known it to devour. I have seen a female seize and swallow young frogs of her own species, and which probably were her own offspring. The young frogs were invaria-



**A CURIOUS BRIDGE AT IWAKUNI JAPAN.**

scend five eminences to make the crossing. This extraordinary structure is three hundred years old and is regarded as one of the natural curiosities. The supporting pillars are of stone, and the superstructure of wood.

**IMPROVED GERMINATING APPARATUS.**

The apparatus represented in the accompanying cuts is intended to test the germinating capacity of seeds, and is designed to be used by seed dealers, gardeners, and others.

The apparatus is shown in Fig. 1, and in Fig. 2 is seen a vertical longitudinal section. Fig. 3 is a vertical cross section, and Fig. 4 shows one of the perforated seed plates with which the apparatus is provided.

As shown in Fig. 1, the apparatus is enclosed in an iron covering with a tightly closing front door, through which the seed plates, *a, a, a*, are placed. The plates are introduced into the apparatus and supported on shelves, *c, c, c*, made of perforated sheet metal. The seed plates are made

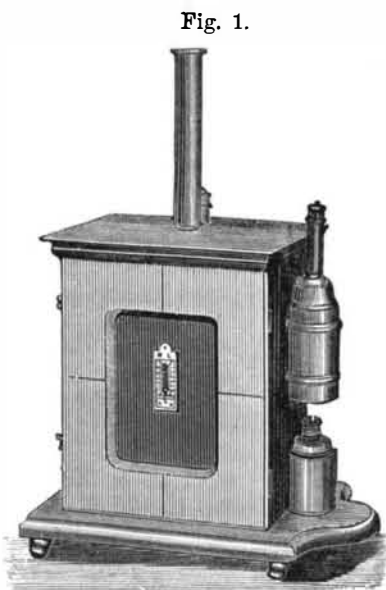


Fig. 1.

of a mixture of pulverized firebrick, sawdust, and powdered charcoal. Every seed plate has a number of oval indentations or cells, in which the seeds are placed, and these cells are made proportionate to the size of the seed. The seed plates are placed in sheet metal pans, *b, b, b*, in which is a sheet of felt of the same size as the plate. Both seed plates and shelves are enclosed in a jacket formed of two rolls of sheet metal, the space, *d, d, d*, between them being filled

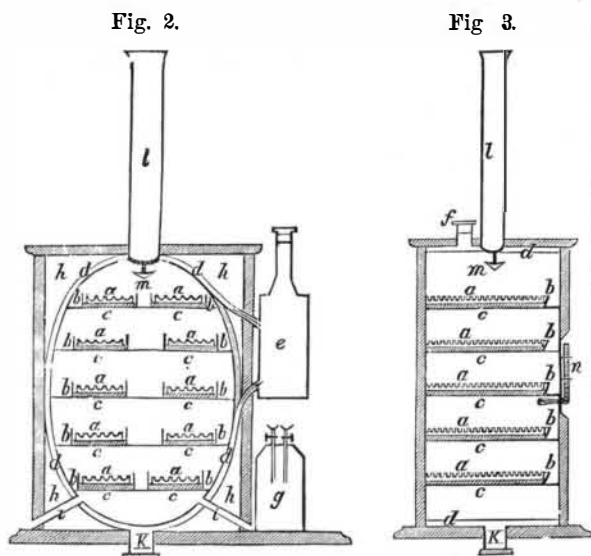


Fig. 2.

Fig. 3.

with water which is heated by a communication with the vessel, *e*, which is also filled with water and heated by a petroleum or alcohol lamp, *g*. To prevent the loss of heat by radiation, the spaces, *h, h*, are filled with ashes or any non-conductor of heat. Cold air is admitted to the interior through the channels, *i, i*, and the moisture is conducted away through the pipe, *l*, which has a small drip cup, *m*, for the water of condensation. At *k* is shown means for drawing off the water if desired.

The temperature in the interior of the apparatus is observed by the thermometer, *n*, Fig. 3, whose mercury bulb is placed in the interior of the apparatus.

When it is desired to use the apparatus, the seed plates are dipped into water, absorbing a certain amount. The plates are then placed in the pans, in which water has been previously poured. The seeds are then wet and placed in the cells. If it be desired to germinate the seeds at the temperature of the atmosphere, all that has to be done is to keep up the supply of water in the pans, but if a more rapid germination is wished, the apparatus is heated by the lamp until the requisite temperature is obtained, when that heat is kept up by reference to the thermometer and regulating the lamp.

The article upon the gorilla in our last issue should have been credited to Frank Buckland, in *Land and Water*.

**NOTES OF PATENT OFFICE DECISIONS.**

**PATENTS.**

Adams brought a suit in equity against the Joliet Manufacturing Company for infringement upon his letters patent for an "Improvement in Corn Shellers." The object of the invention in question was to secure an operative automatic feed, which, without the care of an attendant, would keep the stream of ears of corn steadily and uniformly running into the sheller, instead of permitting it to pile up or choke in the throat. This he accomplished by a series of wings, wheels, or projections, so arranged on a shaft as to revolve in the same direction in which the corn was running, and so placed relative to the throat as to force into the corn sheller all misplaced or hesitating ears. Upon the question of novelty, a large number of devices for feeding or regulating the feed of corn shellers, thrashing machines, straw cutters, planing machines, carding machines, etc., were introduced in evidence. One of these devices, in feed regulators for corn-shellers, which preceded the complainant's, was, in form of construction, almost precisely like that of complainants, except that it revolved in a contrary direction. It consisted, in brief, of a winged shaft, or beater-bar, over the throat of the sheller, so arranged as to revolve in the opposite direction to the stream of the ears of corn, and to drive back the overriding ears as they approached the throat. When at rest, however, and without the gearing by which the motion was secured, the two devices would strike the eye as substantially alike. The circuit court, however, has just rendered its decision sustaining the complainant's patent. It holds that the prior device was found to do but little towards securing the desired result, as the ears thrust or knocked back only got in the way of others, and the machine was therefore still liable to clog, so as to make the feed irregular, and require frequent attention from an attendant, and that an improved result was obtained by the complainant's device.

In the infringement suit of Henderson vs. The Cleveland Co-operative Stove Company, it appeared that the specification of the complainant's patent for an improvement in coal stoves, described a combination of a combustion chamber, and a circulating air chamber surrounding the hopper, as the substance of the invention, and further stated that, in whatever form of stove the said improvement was applied, both elements, namely the combustion chamber and the circulating air chamber, must be preserved. The Circuit Court holds, however, that a separate claim of the patentee to each of the elements can, nevertheless, be maintained, and that no inference of the abandonment of an individual element made the subject of a distinct claim can arise from the mere fact that the specification states the invention to consist of its combination with another feature.

The Supreme Court of the United States has lately rendered its decision in the equity suit of Russell vs. Place, for infringement of letters patent. The main question involved was whether the defendant could set up certain defenses—such as want of novelty in the invention, its use by the public for more than two years prior to the application for the patent, etc.—a judgment in an action at law for infringement of said letters patent having previously been recovered against them by the said complainant. The court decides that before the judgment of a court of competent authority, rendered in a prior action between the same parties, can prevent the defendants from availing themselves of such defenses in a subsequent suit, it must be certain that the consideration and determination of the particular matter set up in the defense to the subsequent suit was necessarily involved in the verdict and judgment in the prior suit; and that if this did not clearly appear from the face of the record, extrinsic evidence consistent with the record might be admitted to establish the fact.

**COPYRIGHT CASES.**

A decision has lately been rendered by Judge Shepley, in the suit of Richardson vs. Miller for the infringement of a copyright for circular playing cards. The defendants contended that their prints were unlike the cards copyrighted by Richardson, and did not infringe the copyright. They further insisted that his copyright was invalid for the reason that his prints were not the fit subject of a copyright. It appeared that there were certain marked differences between the prints of the copyrighted court cards of the complainant and the court cards of the defendants. There was much less space in the center of the cards. The faces of the kings and queens were turned in a different direction. There was a difference in the spaces between the heads on the court cards. There were marked differences in color, also, so that the cards of the defendants were easily distinguished from those of the complainant. But on the other hand, there was a striking similarity in those distinctive features of the main design wherein the printed cards of the complainant differed from other playing cards previously used. In the court or face cards of both complainant and defendants, there was a suit spot in the center of a circular card, with five similar heads arranged at equal distances from each other around the central suit spot, with five smaller suit spots near the outer margin of the circle, at equal distances apart and intermediate between each pair of heads. The court holds that these distinctive features of the main design being thus reproduced in the impressions of the defendants' prints, it is no answer to the charge of infringement that the whole of the design has not been copied, if those features of it have been appropriated which substantially embrace the novelty of the conception and the value in the application of the art of the designer. The doctrine is as applicable to prints and

engravings as to books, that one cannot take the vital part of another's work, although it may be but a small part in quantity, or insert distinct and material portions of one work into the general texture of another, constituting its chief value, without being chargeable with infringement.

In regard to the second ground of defense, the court, while admitting that it would not lend its aid to protect the authors of immoral works, says that there is nothing immoral or improper in the complainant's playing cards themselves, and the fact that they may be used by persons to violate the laws against gambling will not, of itself, deprive them of the protection of the law.

**GIANT LILY.**

This huge lily is quite different in aspect from any other in cultivation. Leaves very broad, those near the root and lower part of the stem, stalked, oval-acute, with a heart-shaped base; the upper stem leaves nearly stalkless, with a



rounded base, and diminishing in size; in size and shape very much like a catalpa leaf. Blooms in summer on a stalk from 7 1/4 to 9 1/4 feet high. The flowers are greenish-white outside, tinged with violet on the inside, large, 6 to 7 inches long, funnel-shaped, with divisions slightly reflected, fragrant, pendulous, 8 to 15 (sometimes 20) on each, tall and stout stem. Native of the Himalayas. Usually grown in greenhouses, but will grow in the open air if well protected. A well drained position, good, deep, and very sandy soil, are indispensable. The best position for it is isolated, a few feet within the margin of a shrubbery, with a warm exposure. Also suitable for association with hardy subtropical plants. A box or barrel should be turned over the plant in the fall, and well filled with leaves.

Bulbs are very large, conical, with scales which are very broad at the base and narrow at the top, very fleshy, not compressed, and of a greenish-white color.

**New Haven as a Manufacturing Center.**

The New Haven Chamber of Commerce, through its Secretary E. S. Wheeler, is inviting the attention of manufacturers to the advantages offered by New Haven to manufacturing enterprises. These consist of a good harbor, ample wharfage, cheap and rapid communication with New York by water and rail, ample facilities for foreign exportation, direct rail communication with New England, the West and Southwest, with low freights, a large body of skillful mechanics, a smaller indebtedness than any city of its size in the Union, a low rate of taxation, a low rate of assessment, thirty-three miles of sewerage, an ample water supply with one hundred miles of water mains, an admirable fire department, a healthy location, building cheap, and sales plenty and low priced, and educational advantages unsurpassed. Manufacturers wishing to escape excessive taxation and secure a location for manufacturing goods economically and marketing them at home and abroad successfully, should go to New Haven.—*N. Y. Tribune*.

**Adulteration of Beeswax.**

The recent adulteration of yellow beeswax with rosin has led to the invention of a new method for its detection. E. Schmidt recommends the following process for the rapid and accurate detection of relatively small quantities of pine resin. He heats 5 grammes (75 grains) of the wax to be tested in a flask with four or five times the quantity of crude nitric acid, specific gravity 1.31 to 1.33, until it boils; and it is kept boiling a minute, then an equal volume of cold water is added, and enough ammonia (which must be added very cautiously) put in and shaken to cause it to smell strongly of ammonia. The alkaline liquid is decanted from the precipitated wax into a cylindrical vessel. If the wax was pure the liquid will have a yellow color; if the wax was adulterated with rosin the liquid will have a more or less intensely reddish-brown color from the formation of nitro-products. This being a colorimetric test, it is well to have some perfectly pure wax for comparison. The reaction is much more violent during boiling if rosin is present. As little as 1 per cent can be detected in this way.