Science Notes.

Bright red spectacles accompanied by internal doses of calomel form a new German specific against seasickness. It is deduced from Epstein's investigations on the influence of color on the blood vessels in the brain. Seasickness is due to lack of blood in the brain, while red sends blood to the brain with a rush. By looking at one point for some time through the red glasses, the patient is cured radically.

The number of bacteria in London crude sewage is 3,899,000 per cubic centimeter, at the Barking outfall, and 3,527,000 at the Crossness outfalls, according to the average of a number of recent counts by Dr. A. C. Houston, made early this year, under the direction of Dr. Frank Clowes, Chemist of the London County Council. The range at Barking was from 7,260,000 on May 3 to 513,000 on April 15; and at Crossness, from 5,290,000 on March 2 to 2,410,000 on April 20.

According to The Druggists' Circular and Chemical Gazette, the expensiveness and want of durability in the ordinary rubber bottles and ice bags which have been so essential in the sick chamber have long been a perplexing problem. Experiment with rice paper, covered inside and out with a coating of Japanese lacquer, led Prof. Jacobsohn to recommend this material to the Berlin Society of Internal Medicine as far superior to rubber. In strength, flexibility, imperviousness, lightness, and durability it is said that this bottle leaves little to be desired.

The increasing use of acetylene as an illuminating gas and the objection made to it in some quarters on the score of hygienic considerations lend particular interest to a number of experiments recently made on animals, says The Pharmaceutical Era. Dogs were kept for some time in an atmosphere containing 20 per cent of acetylene without deleterious effect, and it would appear that living beings are not injured by breathing an atmosphere so contaminated. A dog kept in an atmosphere containing 40 per cent of acetylene, however, succumbed after breathing 110 liters of the mixture. The danger from acetylene is smaller than from ordinary illuminating gas, and its intense odor makes it readily noticed when escaping into the air. There is no risk of explosion until the air contains one-twelfth of its volume of acetylene. It is particularly adapted to illumination, because of the slight heating effect as compared with its illuminating power, and the removal of but little oxygen from the atmosphere. The heat of combustion with an acetylene flame does not rise above 900° C., while the heat from an ordinary gas flame may reach 1,300° C.

It chanced that the birth-rate began to decline in France sooner than in other great countries of Europe, and that the decline has been more rapid. But, as the figures of the Registrar-General show, the same tendency is now very strongly marked in England, and is plainly visible in nearly every European country. It is quite conceivable that a couple of generations hence Frenchmen may find that their birth-rate is no longer the lowest in Europe. The truth is that the present rapid growth in European populations is a phenomenon which is almost entirely confined to the last 150 years. Through some of the grandest periods of our history the population of England was almost stationary, and the same statement applies to France. If this decrease is due to non-natural causes, it is not a matter for congratulation; but if it means that European peoples are ceasing to contract reckless and improvident marriages and are showing more care and discrimination in the begetting of children, it is a healthy sign of the times. Large families are not necessarily an evil, but if the members composing them are diseased and degenerate, they become a standing danger to the welfare of the body politic. —The Humanitarian.

In a recent paper on "The Accepted Altitude of the Aurora Borealis," read by Prof. Cleveland Abbe before the American Philosophical Society, he stated that some observers have seen the light in such positions between themselves and neighboring objects as to demonstrate that the aurora, like the lightning, may be entirely confined to the lowest stratum. Others have seen it so located among the clouds that its origin must be placed at or below their level, and therefore within a few thousand feet of the earth's surface. On the other hand, those who have calculated the altitudes of specific beams by trigonometrical or equivalent methods have deduced heights of twenty to a hundred miles; Dr. Boller has even quoted an altitude of 1243 miles. Prof. Abbe remarks that, after reviewing the literature of the subject since the time of Halley, he finds that all methods agree in one fundamental assumption that the observed beams and arches have an individual existence and a definite locus. But this assumption is negatived by the equal frequency of negative and positive parallaxes wherever the parallax method is applied. The only conclusion possible is that the observers do not see the same object, partly because the aurora is too low down, and partly because there are optical illusions due to alignment.

Miscellaneous Notes and Receipts.

Perfumed Ammonia Scouring Water.—Perfumed ammonia scouring water is prepared by mixing:

Spirit of sal ammoniac	160 parts.
Finely scraped soap	30 "
Borax	10 "
Cologne water	15 "

Distilled water, enough to make up 460 parts of liquid.

—Neueste Erfindungen und Erfahrungen.

Improving the Air in Work Rooms, etc.—For one liter bottle of well water, take a spoonful of oil of turpentine, shake the liquid diligently until it becomes dim or white and distribute in the room, by means of an atomizer. One may also mix a few drops of acetic ether with the oil of turpentine. The refreshing effect of the quickly spreading, pleasant odor is astonishing. —Kraft und Licht.

To Render Fine Fissures in Tools, etc., Visible.—In order to make the extent of fine cracks in tools, etc., visible, it is recommended to moisten the surface of the cracked article with petroleum, to rub off clean and to wipe off the surface with chalk. The petroleum which has entered the fine cracks sweats out and the rent is visible in its whole extent.—Oesterr. Zeitschrift fuer Berg- und Huettenwesen.

Lustrous shoe grease is obtained as follows, according to Technische Berichte: Alcohol, 126 parts; camphor, 11 parts; Venetian turpentine, 16 parts; shellac, 36 parts; dyestuff, 32 parts. The latter may either be aniline blue, of which it is best to use 15 parts, or Bismarck brown (phenyl brown), likewise 15 parts; both coloring substances are dissolved in 800 parts alcohol. This polish is best suited for walking boots and shoes, since it possesses a fine, silky (not a lacquered or mirror-like) appearance.

Technical Value of Acacia Wood.—The fact that the locust tree attains in twenty-five to thirty years the same thickness as the pine in fifty and the oak in one hundred years caused L. Kausch to conduct experiments with this variety of wood. The author gained the conviction that acacia wood has an important future, especially as regards its use for mining purposes. Acacia timber excels by great firmness and durability, and is, therefore, also well suited for many other purposes, such as wheels, bungs, ladder steps, etc. The locust tree thrives in the poorest soil, even in the rubbish of sandstone quarries and in slaty declivities. All that is necessary is to make a little hole in the latter, to fill it with mother soil, and to plant the young tree therein. In wet soil the locust tree does not thrive.—Glück Auf.

New Painting Ground.—Since notable connoisseurs ascribe the subsequent darkening and defective luminosity of many paintings to the composition of the grounding with which the canvas is prepared, J. L. Schudt, in the Polytechnisches Zentralblatt, proposes in place of the mixture now employed, consisting of chalk, glue, and oil, a new composition, which he prepares as follows: Slake burnt lime with a little water, add to the mixture, while still hot, beeswax and linseed oil, and grind the whole in a paint mill with 1¼ to 1½ times its weight of white cheese. The mass is applied on the canvas saturated with milk and smoothed. Another advantage claimed for this new painting foundation is that it does not allow cracks and fissures to form as readily as with the one heretofore in use.

Water Lacquers.—The group of the water lacquers embraces only a few, little used lacquers. Below are some receipts.

1. Shellac Water Lacquer.—Boil 28·5 grammes of shellac and 42·75 grammes of borax in 0·564 liter of water until the shellac has dissolved. If bleached shellac is used, a white color is obtained, with orange shellac a light brown one. This varnish gives a good binding agent for water colors and is also a useful paper varnish. It dries with a handsome luster and hard surface which is water proof. By the addition of aniline colors soluble in water, the lacquer can be tinted as desired.

2. Enamel Lacquer.—Mix 0·564 liter of albumen with 0·564 liter of water. For preservation, add a little carbolic acid or salicylic acid. Instead of the albumen, dried albumen may be employed, of which 28·5 grammes are dissolved in 0·564 liter of water, but the color is less clear. This varnish dries with good gloss. By drying in hot air it becomes more resistive to water.

3. Glue Lacquer.—Dissolve 1 pound of good pale glue in 9 liters of water, the color being entirely dependent on the quality of the glue. Good white gelatine gives a white color, while brown glue yields a yellow one. Solution accomplished, add (but only directly before use) 28·5 grammes of potassium bichromate, which renders the surface watertight. As said, the potassium should only be added closely before use, else the solution will be converted into a gelatinous, stiff mass. This mixture constitutes the basis of many leather varnishes. For preservation the addition of a little thymol or borax is commendable.

4. Crystal Water Lacquer.—Dissolve 450 grammes of good white gum arabic and 450 grammes of glucose in 1,629 liters of water. This solution dries hard and glossy.—Färben Zeitung.

PATRICK COUNTY, VA., AND ITS CURIOUS "FAIRY STONES."

BY POWHATAN BOULDIN.

The Blue Ridge and the Alleghany Mountains unite a little north of the county of Patrick, Virginia, and hence in that county they constitute only one mountain.

Stuart, a pretty little town seventy-five miles west of Danville, is the county seat of Patrick and the terminus of the Danville and Western Railroad. The distance from Stuart to the top of the mountain is ten miles, over an admirably constructed turnpike, and the scenery all along the road is exceedingly picturesque. When the traveler reaches the summit of the mountain, 3,000 feet above the level of the sea, he naturally expects to descend on the other side; but, greatly to his surprise, he finds himself in a comparatively level country, the soil of which is well adapted to the cultivation of grain, grass, and vegetables.

That portion of this remarkable plateau which lies in the county of Patrick is called the Meadows of Dan. In the meadows are innumerable springs of pure water, the temperature of which is 50 degrees in summer. In less than fifteen miles the traveler crosses twelve different streams, all rising on the top of the mountain, and all flowing through these beautiful tablelands. One of these streams (the river Dan) joins the Staunton and forms the Roanoke, which empties into Albemarle Sound. Another (the Ararat) flows into the Yadkin, which joins the Great Pee Dee, in South Carolina, and with this runs into the Atlantic Ocean. The waters of another empty into New River and finally reach the Gulf of Mexico.

So it appears that these streams, which rise so near together, are wide apart before they reach the ocean.

The Dan, making its way down the mountain, is a very great natural curiosity. After flowing about ten miles through meadows, it reaches the declivity of the mountain and begins to descend, making innumerable picturesque waterfalls in its downward course. One of these is known as the Big Falls. There the water flows between two high mountains and falls in a beautiful, smooth sheet over a huge rock 40 feet high. At the base of the falls is a basin of water, clear as crystal and extending 25 feet under the rock over which the water falls. This basin is nearly round and is 60 feet in diameter. The beauty of the falls, together with the wildness of the scenery, make it a very romantic place. But the most remarkable thing about the passage of the Dan down the mountain is the marvelous zigzag course which the river takes in making its descent. The distance in a straight line is only five miles, but, following the river, as it winds round the deep gorges, hemmed in on all sides by high mountains, it is at least twenty miles.

One mile below the Big Falls are the Pinnacles—two immense natural pyramids in the shape of a sugar loaf, rising to a level with the surrounding mountains. The summit of the highest one is about 20 feet square, and from it a view may be obtained which will amply repay the visitor for the labor of climbing, although that labor is very great.

The Dan runs entirely round the Pinnacles, taking one at a time. The distance straight across is only half a mile; but, following the river, it is at least two miles. When the river reaches the foot of the mountain the scene is suddenly changed, the waters becoming calm and placid, and the visitor, who has seen the mad rush and heard the mighty roar, has the inexpressible feeling of quiet which is experienced by one who has passed through a terrible storm.

The Pinnacles are frequently visited; but, owing to the difficulty in getting to the river and following it, few have ever visited the falls of the Dan.

Smith's River is one of the streams which rise in the meadows. Unlike the Dan, in descending the mountain it runs in almost a straight line, and following it is an arduous, though by no means an impracticable, undertaking. Many pretty cascades are to be seen, one in particular being especially attractive. This is down deep in a mountain gorge, where the river flows over a large rock, at the base of which is a little level spot, large enough for about a dozen persons to stand and admire the scene. As the rock is not perpendicular, the water does not make such a loud noise as at the Big Falls of the Dan, but instead a low, murmuring, melancholy sound, which is as soothing to the soul as the softest, sweetest strains of music. Such a retreat is not only attractive to the romantic youth, but it is refreshing to men of mature years who may be in need of rest from the cares and responsibilities of business.

In the meadows, near the head waters of Smith's River, rock crystal is found, out of which the Indians manufactured their prettiest arrow heads. The writer has one made of that material which is so perfectly transparent that the smallest print may be read through it. The writer has seen many arrow heads which were made of white flint, but this is the only one he ever saw which was made of rock crystal.

In the same vicinity there is a quarry of very fine soapstone. Near it was recently found a large bowl, which some Indian sculptor had made of that material;

also a soapstone pipe and stem, handsomely finished, was picked up in that neighborhood. How the Indians, who knew nothing of the use of iron tools, made such a pipe and such a beautifully shaped arrow head, is a question which has never been satisfactorily answered. Such relics should be carefully preserved, for they are the only memorials we have of the race which first inhabited this country, the race from which sprang Pocahontas, the gentlest savage that ever lived.

All the things that I have enumerated are highly interesting, but nothing that I have seen in Patrick County has interested me so much as its fairy stones.

These curious little crystals are found in only three other States besides Virginia, in no other county in Virginia but Patrick, and nowhere else in Patrick but on and along Bull Mountain, a spur of the Blue Ridge running twenty miles through the county. The fairy stones found elsewhere, judging from the specimens exhibited at the Atlanta and Nashville expositions, are not at all comparable to those found on Bull Mountain. To a few of the people of Patrick they have been known for a long time, but not until about ten years ago did they come into public notice. Some of these stones which have been analyzed contained titanite, tourmaline, garnet, aluminum, and steatite, titanite being the principal material.

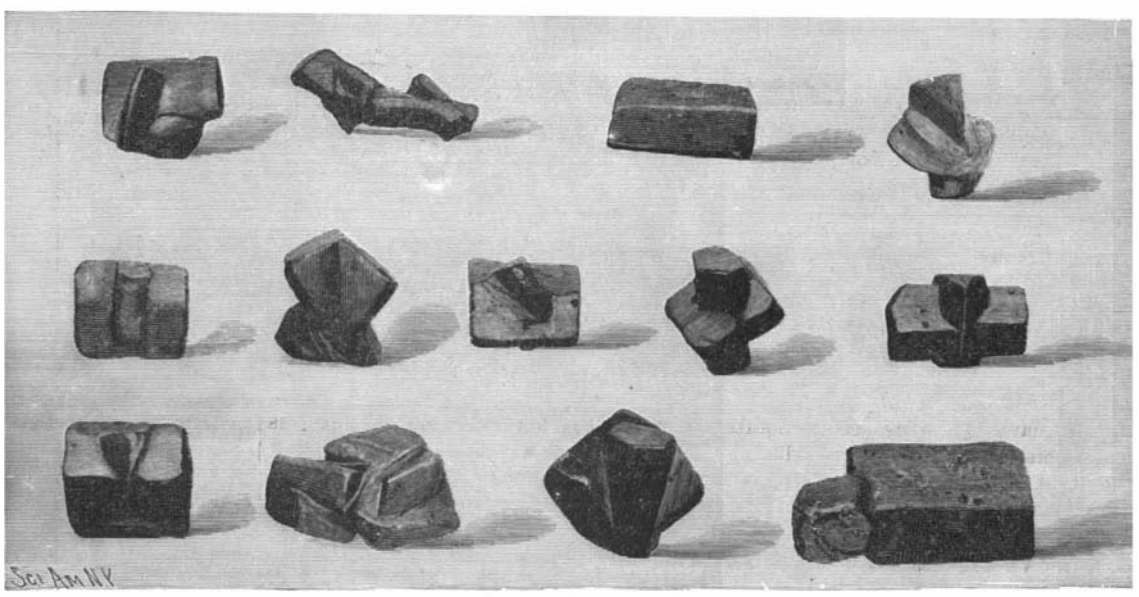
Geologists say that they are crystals. Most of them have crosses, some what is called the Roman; some, the Maltese; some, the St. Andrew's; and some, crosses for which there are no names. Those which have no crosses are pretty stones of different forms. Frequently two, sometimes three or four, are joined, making a most curious combination. Possibly a person skilled in the use of the chisel might imitate what might be styled the plain work of the fairies; but it would be impossible for the most skillful sculptor to imitate their fancy work. On many of these stones there are crosses exactly alike on opposite sides. Some of the stones are not larger than the head of a pin, while others weigh as much as an ounce and a half. No two are alike. Nature seems to have tried her hand at variety in making them, as she does in making the leaves on the Otahite mulberry tree. And they are of every shade of color. A number of them placed upon a cardboard make a picture as novel as it is strange and beautiful. No adequate conception can be formed of what a great curiosity fairy stones are without seeing a great many of them together.

Hunting for fairy stones is a new and charming diversion. A walk of two and a half miles from Stuart will take you to where they are found. You will have to climb the mountain, but the scenery along the route is so picturesque that you will forget you are going uphill. And, besides, you will be constantly thinking: What shall I find? Will it be a Roman, a Maltese, or a St. Andrew's? Or will it be a Roman joined to a Maltese or a Maltese joined to a St. Andrew's? or a St. Andrew's joined to one of the crosses for which there is no name? Of one thing you may rest assured, and that is, that every stone that you may find will be different from any that you have ever seen.

When you arrive at the place (it is only about in spots on Bull Mountain that fairy stones are found), you will begin at once the search. You will find them from two to four inches under the ground, and the best instrument to use in digging them up is a small trowel. You will find them in abundance; but the really pretty ones, such as are used by ladies for scarf pins and by gentlemen for watch charms, are scarce. All of them, however, are interesting specimens of the most curious form of crystallization.

When you have filled your pockets, you start back; but you will not go far before you will be tempted to take a seat on one of the large, flat rocks on the side of the road—not to rest, for it is now facilis descensus—but to gratify the curiosity which you are sure to have to look over your treasure. Taking out your fairy stones and inspecting them, one by one, you will discover in many of them beauties which escaped your notice while you were digging them out of the ground.

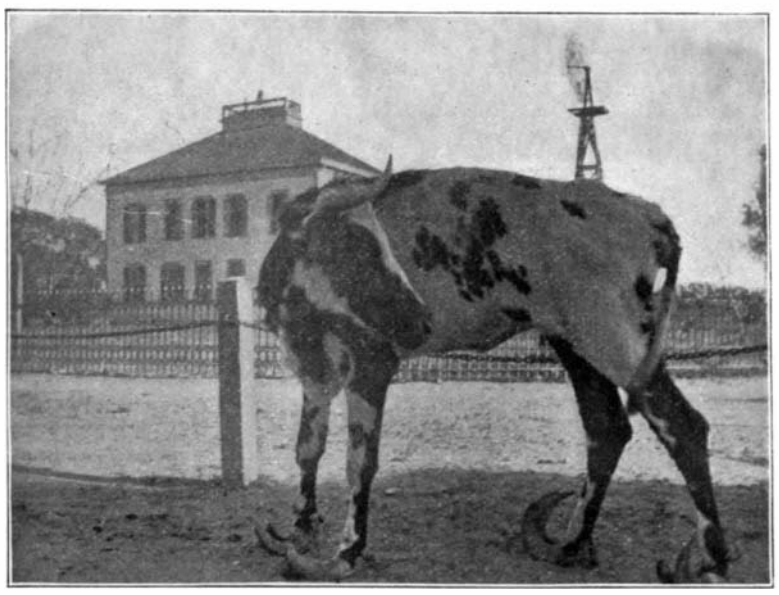
Having gratified your curiosity, you resume your walk, and are soon back again at Stuart.



PECULIAR SHAPED "FAIRY STONES."

A CURIOUS CASE OF MALFORMATION.

Through the courtesy of Mr. W. O. McCurdy, publisher of The Beeville Bee, of Beeville, Texas, we are enabled to present our readers with one of the most remarkable curiosities in the way of animal malformation that we have seen for years. The cow shown in our engraving is five years old and is the property of W. J. Miller, a ranchman of Bee County, Texas. Since its first year its hoofs have been growing until they are now about fourteen inches in length and shaped as shown in the photograph. As it may be supposed in cattle-growing countries, the ranchmen have been very much interested in this strange-looking animal and they are unanimous in stating that this is the first instance on record of such a malformation. The cow has given birth to one calf, which has in no way inherited the peculiarity of its mother.



CURIOUS CASE OF MALFORMATION IN A COW.

A Traveling Railway Library.

The Baltimore and Ohio Railway has a traveling library for the exclusive use of its employés and their families, containing 14,000 volumes. This library was started in 1885 with 4,500 volumes, 3,000 of which had been purchased, the remainder donated. The headquarters of the library is in Baltimore, from which current periodicals and standard works on science, general literature, poetry, history, and other books of practical utility to railway employés are distributed to any point on the B. & O. lines. The books are delivered to borrowers through local agents. The average time from the placing of an order for a book in the hands of an agent until the book is in his hands for delivery is officially stated to be less than twenty-four hours for the entire system, which comprises 674 agencies, extending over 3,000 miles of line, through eight States, and as far west as the Mississippi River. According to the rules of the library, a book may be retained two weeks, after which it will be once renewed for a like period, upon request, if no other application for it is on file. There is a fine of one cent per day for books kept over time, a margin of three days being allowed to cover the time consumed in transit. Upon leaving the service of the company all books must be returned before pay vouchers are cashed; otherwise the price of the book is deducted from the wages of the employé. The management of the library is intrusted to a committee composed of two members of the relief department of the road and a representative of the railway company appointed by the president, who also appoints the librarian. The library is sustained by voluntary contributions of money and literature from the officers and employés of the railway company and outside friends interested in their welfare. The circulation increased steadily from 16,120 volumes in 1885 to 39,505 volumes, loaned to 2,500 borrowers, in 1896. The figures for the last two years are not at hand. The circulation of books of fiction has decreased from 64 per cent of the total circulation the first year to less than 53 per cent at present.

Elastic Leather Varnish.

Elastic leather varnish which does not break is prepared as follows: Colophony. 30 parts; thick turpentine, 30 parts; oil of turpentine, 30 parts; sandarac, 60 parts; shellac, 120 parts; alcohol (90 per cent), 900 parts. After all is dissolved, filter the liquid and, if black varnish is desired, mix with 15 parts of fine lampblack, which is previously ground with a little alcohol. If another shade than black is desired, use instead of the lampblack a sufficient quantity of some other color, such as Krems or zinc white, ultramarine, chrome yellow, or vermilion. — Neueste Erfindungen und Erfahrungen.

A Market for Our Meats.

Germany's meat famine is spreading apace. In many places, notably in Saxony, cats and dogs are being slaughtered and eaten by the poor. In some villages several families club together and buy a fat dog, to be killed and divided among them. The consumption of horseflesh is increasing phenomenally. Horseflesh butcheries are being established in towns where they have never existed before. There has been a continuous increase of arrests and convictions for selling unwholesome ordinary meats since the frontiers have been closed against foreign cattle and swine. On the other hand, there is a great and thriving trade in preserved American meats, despite the government's obstacles at the instance of the Agrarians. The tinned American meats imported during the first seven months of 1898 amounted to 1,964,800 kilogrammes [a kilogramme is about 2⅕ pounds], against 1,414,900 in the corresponding months of 1897. Of fresh pork the importation was 6,758,800, against 3,955,500; of pickled pork, 3,369,900, against 1,859,800; of bacon, 15,948,300, against 7,139,300; and of lard, 64,356,400, against 47,446,600. The demand for all of these still exceeds the supply, and if the general mass of Germans can be convinced that American meats are always of standard quality and can be had at a reasonable price, the sales can be extended fivefold.

The Current Supplement.

The current SUPPLEMENT, No. 1198, is commenced with an illustrated description of the Argentine cruiser "General Belgrano," which is a handsome and highly efficient armored cruiser of the latest type. "The Steam Yacht as a Naval Auxiliary," by W. P. Stephens, is an interesting article. "Roman Construction," by G. W. Percy, is an archæological and engineering paper. "The Use of Aluminum in Warfare" is a paper of value. "The Opening of the First Section of the Jungfrau Railway" describes the progress which has been made on this important engineering work. "In the Land of Ginger—Jamaica," is a paper by F. B. Kilmer. "The Races of the Philippine Archipelago" is an illustrated paper by Dr. Daniel G. Brinton and is of great interest. W. O. Atwater's "Dietary Studies" complete the paper.

Contents.

(Illustrated articles are marked with an asterisk.)