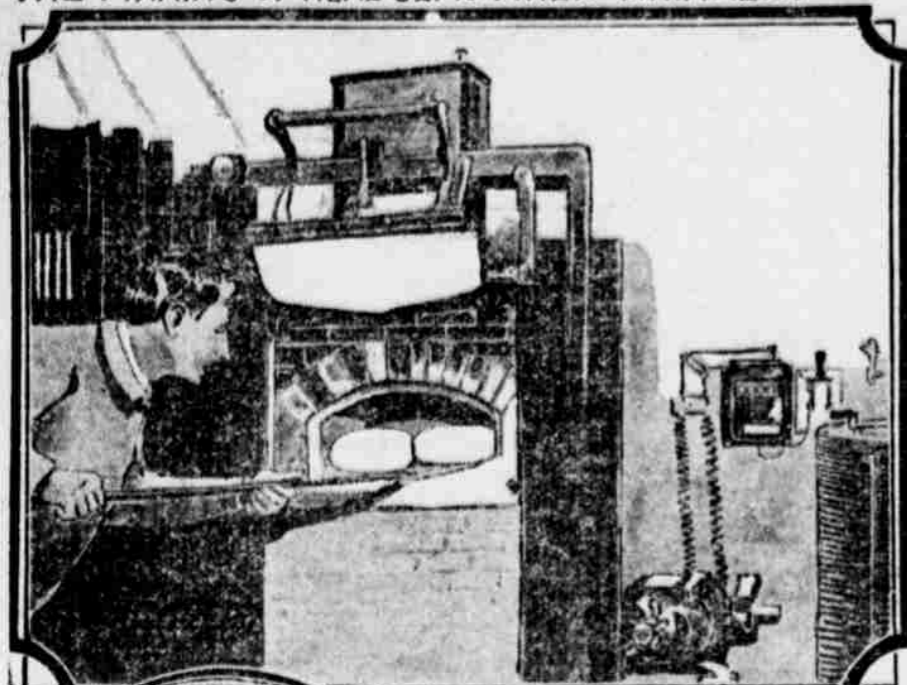
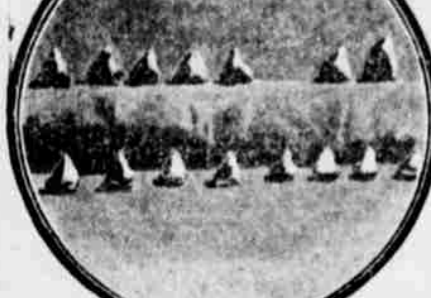


SAPPHIRES TO ORDER

THE MAKING OF REAL GEMS A NEW WRINKLE



BAKING THE INGREDIENTS AT HIGH TEMPERATURE



MANUFACTURED SAPPHIRES

Is it nature faking when a man learns nature's secrets and beats her at her own game? That is a question which we have not time to debate here, and it is not altogether material, either, for the story we have to tell is not based upon conjecture, but fact. Sapphires, real precious stones, are now being made and can be produced to sell at a profit for 24 francs a carat; or say about \$4.75. More than that, the method is comparatively rapid.

After the exposure of the wonderful and mysterious methods of manufacturing diamonds by a Frenchman, last summer, new announcements of the fabrication of precious stones are now received with due restraint on the natural enthusiasm. It remains a fact, however, that another Frenchman, this time a young engineer named Louis Paris, has achieved the alchemical feat of making a sapphire which answers every test of the sapphire of nature. Practically it is a real sapphire, and that is what it is called.

The secret of the manufacture, of course, lies in the quantity of material used to produce the result, consequently, the discoverer has not hesitated to take into his laboratory inquisitive visitors, and show them the entire process, and also to tell them just what the material used consists of.

If any person desires to duplicate the feat he may be told that all that is required is a quantity of clay and an oxide colorant. Then, too, he will require an apparatus, of which the main feature is an oxy-hydrogen blow-pipe, and the necessary cylinders of gas to feed the latter. It is very necessary to know how to do it, to obtain the kind of results which crown M. Paris' efforts, but that is a mere detail.

M. Paris is a very retiring and modest discoverer, and the first inkling the world, that is to say, the scientific world, had of his wonderful discovery was the announcement made at a recent meeting of the Academy of Science at Paris, when a communication from him was read. An enterprising Paris journal sought him out, and both correspondent and photographer worked on the subject until they wrested from the inventor the method of his twentieth century alchemy.

It is probable that M. Paris had his attention directed to the manufacture of precious stones from the growing demand among engineers for some cheap substitute for the diamond in drilling. It was found when work on the Metropolitan Underground Railway in Paris was begun that in certain parts of the line, near the Seine, there was a subsoil so soft and oozy that it seemed that nothing would control it while the tube was being run through it.

An ingenious engineer suggested that if the quicksands could be frozen they might be rendered almost as hard as rock, and while in this condition they might be bored with a diamond drill. The merest tye in the jewelry trade knows that, although there are cheap diamonds, it would require a small fortune to provide them in sufficient quantities to enable them to be used extensively in boring works. The necessity of a hard drill in this work is due to the fact that it is essential that the boring proceed quickly for the reason that hardness of the soil is obtained by artificial temperatures, in itself a costly operation. With the production of artificial sapphires, it is claimed, a new substitute is at hand for the expensive diamond dust. The new stones also permit of larger drills, and consequently greater expedition in forcing the borings.

Minute diamonds have before this been produced in laboratory experiments, but in no sense in commercial

quantities or at a cost below that of the genuine stone. As a matter of fact the artificial diamond is more of a luxury than the real article, although the production is an achievement to be admired, and to make man feel that he has done something. On the other hand, however, the sapphire of M. Paris is a commercial article, and is produced in commercial quantities and at so small a cost that it is believed that new uses for the stones will be found. They have all the character of the stones of nature. They have the color, the hardness or specific gravity of the genuine sapphire, and can be sold at a figure below that of the most inferior natural stone.

The success of the discovery is believed in France to foreshadow the manufacture of other precious stones, and now it is believed that fabrication of the pure carbon, which is to say, the diamond, is measurably within view. In this prophecy it may be that the importance of the discovery is overestimated, yet it shows that the electric current, or by means of a radioactive substance, is unnecessary. M. Paris accomplishes his wonderful transmutations by means of the common calcium furnace.

In beginning the operation M. Paris uses most delicately balanced scales, so contrived that they answer to the merest fraction of a milligramme. This part of the operation must be conducted with the greatest attention and with precision, for the variation of a milligramme too much or too little of the powder means the failure of the experiment. Into one of the buckets of the little balance the inventor puts his powder, composed of two parts, one of them of an aluminous clay and the other of an oxide coloring substance. Here is the real secret of the operation—the peculiar kind of clay to be used and the quantity to be mixed. These are small, for the stones now being manufactured are comparatively small.

The next operation is to place this soft powder in crucibles made of a refractory earth. This crucible then is deposited in a furnace heated by oxy-hydrogen gas by means of a shoveler with a long handle. This resembles the implement used by bakers to place their dough in their ovens. The crucible, which is placed in a heavy oil, is left in the furnace for several hours, where it is attacked by a heat of 1,700 degrees centigrade, or about 3,000 degrees Fahrenheit.

After a lapse of time necessary for this stage of the transmutation to be completed the crucible is withdrawn and its contents placed in a jar termed a "semouse," which may be translated as meaning the germinating receptacle. In shape it is not unlike a flower pot, and also looks like a large cartridge. The operative puts more powder into this "semouse," and then, after sealing it, places it in a specially designed oxy-hydrogen blow-pipe furnace. These furnaces are protected by a sheet-iron front, and are watched constantly by women operatives. Here the temperature is only about 1,500 degrees centigrade. The powder is allowed to drop slowly from the support-jar through a funnel to the heated point of a blow-pipe, and as it falls the drop is formed by contact with the free air into a beautiful blue and translucent sapphire.

It is then ready for the cutting, which proceeds in exactly the same manner as with the natural one. These artificial sapphires have been found to resemble in the cutting the real article, and excepting for the shape, they would resemble the genuine stone even in the rough.

Advancement in Illustration.

Up to 1879 no other methods were used for plates in fine art illustration than line engraving, and for blocks that wood engraving. Lithography scarcely entered into consideration, photographic reproduction was unknown. Etchings were out of fashion, and mezzotint was found unwieldy for large numbers. Twenty years later, line engraving was practically a dead art, and wood engraving was rapidly becoming so. Reproductions based on photography developed, until color photography appears a possible method of actual book illustration.

TEMPERANCE LESSON

Sunday School Lesson for March 29, 1909

Specially Arranged for This Paper

LESSON TEXT.—Prov. 23:25-35. Memory verses 29, 30.

GOLDEN TEXT.—"At the last it biteth like a serpent, and stingeth like an adder."—Prov. 23:32.

SCRIPTURAL REFERENCES.—Drunkenness.—Deut. 21:20, 21; 32:33-35; Prov. 20:1; 21:17; 23:29, 31; 31:4, 5; Isa. 5:11, 22; Hos. 4:11; Hab. 2:15; Matt. 4: 5; Isa. 5:11, 22; Hos. 4:11; Hab. 2:15; Matt. 24:49, 50; Luke 21:34; Rom. 13:13; 1 Cor. 5:11; Gal. 5:21; Eph. 5:18; 1 Thees. 5:6-8; and to-day's lesson. Warning Examples.—Gen. 9:20, 21; 1 Sam. 23:26; Isa. 56:1, 7; Dan. 5:1-6; Esther 1:10, 11; Matt. 24:48-51; Temperance.—1 Cor. 9:25-27; 1 Tim. 3:2, 3, 8; Tit. 2:11-14; 1 Pet. 4:7, 9; 2 Pet. 1:6; Principles of Total Abstinence.—1 Cor. 13; Rom. 14; 1 Cor. 8, 9.

Comment and Suggestive Thought.

The money and talent in any civilized city is sufficient if properly used and distributed to make that city an Eden, an Hesperides garden or the realization of any dream, ancient or modern, of the Golden Age. All would be educated, all would partake of the best things; there would be no slums, no abject poverty. Everyone could have all the joy, the wealth, the comforts, the rights, the school privileges which he could use. The one thing needed is the improved man to make the social transformation of the world, the eliminating every evil from the character of men, till they are restored to the moral image of God, when each one did all he wished, and wishes but what he ought.

The great obstacle in the way is sin, bad character in some of its many forms.

One of these forms, the great obstacle which most concerns us in this lesson, is intemperance, the want of self-control over the appetites and passions.

The wise man of the Proverbs expresses the evils of intemperance by a series of questions.

"Who hath woe? Who hath sorrow? The words corresponding to the two substantives are, strictly speaking, interjections, as in the margin, Who hath oh? Who hath alas? The woes are too great and too many to name separately. They are woes of body and woes of mind; woes in one's self, woes in his family; pains, diseases, poverty.

Note that other people have woes and sorrows, besides the intemperate man. Apostles and martyrs have been imprisoned and tortured, have suffered hunger and thirst, endured poverty and sickness and pain. We have studied some instances during the past quarter. Read the eleventh chapter of Hebrews. Read the stories of the Huguenots in France, and of the martyrs and missionaries of every age.

But the difference in the two kinds of suffering is heaven-wide. The woes and sorrows of Peter and John, Paul and Silas, in dungeons and chains, rejoicing that they were counted worthy to suffer for Christ's sake, with clear consciences, for the sake of the kingdom of God and salvation of men, listening to God's "Well done, good and faithful," and seeing the crown of righteousness are almost infinitely removed from the woes and sorrows of those "that tarry long at the wine," whose sufferings are the fruit of their own sins.

The other sorrows that flow from the wine cup mentioned in the wise man's questions belong only to wickedness—a quarrelsome disposition—where strong drink inflames the passions, and, at the same time, removes the restraint of conscience and will, first maddening and then unchaining the tiger, grumbling, foolish talking—where the drunkard's "tongue is set on fire of hell;" "wounds without cause;" "redness of eyes;" either (or both) the dimming of the sight, physical, mental and spiritual, or the "copper nose" which makes "the drinker's nose blush for the sins of his mouth."

The means by which these great evils can be removed are precisely the same as those which produced the marvelous transformations of character in the early Christian disciples, which we have been studying.

1. Christ, our Living Leader, the power of God for salvation.
2. The Holy Spirit, convincing men of sin, of righteousness, and of judgment to come; awakening men's hearts, inspiring them to better things.
3. The religious life which these produce.
4. The results as manifested in the healing of the body, and the betterment of the outward life and happiness, which were symbols and means to a better spiritual life.
5. The banding together in an organization which created a helpful moral atmosphere.
6. The courage, wisdom, generosity, love, peace, joy, religious spirit, righteousness of life, produced in the disciples.
7. Their efforts to bring others into these blessings, and to spread the good news.
8. The good example of the Christians.

Practical Points.

The economic value of the virtues The splendid dream of co-operation can only become possible when there is (1) widely diffused intelligence, and (2) a widely diffused virtue. A new race of men will make a new world.

D. A. McDermid, secretary of the London Temperance League, London, Ontario, says: "I have been identified with work among boys for many years, in night schools, Bands of Hope, and Sunday school, and I never knew a good boy who smoked cigarettes, and with rare exceptions a bad boy who did not."

BACKACHE IS KIDNEYACHE.

Usually There Are Other Troubles to Prove It.

Pain in the back is pain in the kidneys, in most cases, and it points to the need of a special remedy to relieve and cure the congestion or inflammation of the kidneys that is interfering with their work and causing that pain that makes you say: "Oh, my back."

Thompson Watkins, professional nurse, 429 N. 23d St., Parsons, Kans., says: "For some time I was annoyed with sharp twinges across the small of my back and irregular passages of the kidney secretions. Since using Doan's Kidney Pills I am free from these troubles."

Sold by all dealers. 50 cents a box. Foster-Milburn Co., Buffalo, N. Y.

INADEQUATE.

Doctor Monk—Did those mustard plasters that I left seem to relieve the pains in your chest to any considerable degree?

Ostrich—Well, no; I can't say that they have; but (apologetically) I've eaten only five of them!

COVERED WITH HIVES.

Child a Mass of Dreadful Sores, Itching, Irritating Humor for 2 Months—Little Sufferer in Terrible Plight.

Disease Cured by Cuticura.

"My six year old daughter had the dreadful disease called hives for two months. She became affected by playing with children who had it. By scratching she caused large sores which were irritating. Her body was a complete sore but it was worse on her arms and back. We employed a physician who left medicine but it did not help her and I tried several remedies but without avail. Seeing the Cuticura Remedies advertised, I thought I would try them. I gave her a hot bath daily with Cuticura Soap and anointed her body with Cuticura Ointment. The first treatment relieved the itching and in a short time the disease disappeared. Mrs. George L. Fridhoff, Warren, Mich., June 30 and July 13, 1908."

Potter Drug & Chem. Corp., Sole Props., Boston.

MAPLENE

A flavoring that is used the same as lemon or vanilla. By dissolving granulated sugar in water and adding Maplene, a delicious syrup is made and a syrup better than maple. Maplene is sold by grocers. If not send for 2-cent box and recipe book. Contact Wm. Co., Seattle.

BILLION DOLLAR GRASS

When ten years ago we first offered to the world Salzer's Billion Dollar Grass, these people thought we were crazy. Now the world is roaring with the name. It is the most wonderful and profitable crop ever raised. It yields 20 to 25 tons per acre, and is sold at the rate of over \$100.00 per acre. Our 5th Century strains of Alfalfa, medium, mammoth seed and Alsike clover and grasses are the purest we believe on earth.

WE ARE HEADQUARTERS FOR AGRICULTURAL CLOVER SEEDS

Such as Parley, Corn, Flat, Oats and Wheat especially recommended and introduced by the Agricultural College of Wisconsin, Iowa, North Dakota, Minnesota, South Dakota, etc.

VEGETABLE SEEDS

We are the largest growers of vegetable seeds in America, operating over 5000 acres. We warrant our seeds to produce the earliest, finest, vegetable grown. Our seeds are cleaned in a special way.

Catalog tells why we have the largest Seed Potatoes trade in the world—one of our outfits holding over 50,000 bushels alone.

Try our 25 packages earliest vegetable seeds postpaid for \$1.00.

WORTH \$100.00 OF ANY MAN'S MONEY

For 10c in stamps we mail free of all cost samples of Silver King variety, yielding 173 bu. per acre; Marston White, yielding \$4. per acre; Billion Dollar Grass, the cereal and hay food wonder, together with timothy, clover, grasses, etc., etc., any one of which, if it becomes acclimated on your farm, will be worth \$100.00 of any man's money to get a start therewith. Keep it close to your breast, who will get it for you. Free booklet, "Distemper, Cause and Cure," dispensed gratis.

JOHN A. SALZER SEED CO. LA CROSSE, WIS.

For DISTEMPER

Pink Eye, Epizootic Shipping Fever & Catarrhal Fever

Sure cure and positive preventive, no matter how horses at any age are infected or "exposed." Liquid, given on the tongue; acts on the Blood and Glands, expels the miasmatic germs from the body. Cures Distemper in Hogs and Pigs and Cattle in Poultry. Largest selling live stock remedy. Cures La Grippe among human beings and will cure influenza, whooping cough, and all other ailments of the throat. Keep it close to your breast, who will get it for you. Free booklet, "Distemper, Cause and Cure," dispensed gratis.

SPOHN MEDICAL CO., Chemists and Bacteriologists GOSHEN, IND., U. S. A.

Do You Love Your Child?

Then protect it from the dangers of croup to which every child is subject. Keep

DR. D. JAYNE'S EXPECTORANT

in your home all the time, then you're ready for the sudden attacks of croup and colds. Neglect may cost you the life of your child. It's safest to be on your guard.

Dr. D. Jayne's Expectorant is the best remedy known for croup; it gives quickest relief.

Sold everywhere in three size bottles \$1.00, 50c, 25c

Live Stock and Miscellaneous

Electrotypes

In great variety for sale at the lowest prices by

A. N. KELLOGG NEWSPAPER CO.
73 W. Adams St., CHICAGO

RUPTURE

Of all varieties permanently cured in a few days without a surgical operation or detention from business. No pay will be accepted until the patient is completely satisfied. Write or call on

FRANTZ H. WRAY, M. D.
Room 306 Bee Bldg., Omaha, Neb.

Know These Crackers

Picture a bakery costing \$1,000,000. Think of white tile ovens on the top floor—flooded by sunshine. Then, the triple-sealed protection packages—that's

Takoma Biscuit

These are the 20th Century Soda Crackers. You can always be sure they will be fresh and crisp—flaky and whole—Yet they cost no more than the old kind—Takoma Biscuit are at your grocer's in 5c and 10c packages. Try them.

LOOSE-WILES BISCUIT CO.

MAPLENE

When ten years ago we first offered to the world Salzer's Billion Dollar Grass, these people thought we were crazy. Now the world is roaring with the name. It is the most wonderful and profitable crop ever raised. It yields 20 to 25 tons per acre, and is sold at the rate of over \$100.00 per acre. Our 5th Century strains of Alfalfa, medium, mammoth seed and Alsike clover and grasses are the purest we believe on earth.

WE ARE HEADQUARTERS FOR AGRICULTURAL CLOVER SEEDS

Such as Parley, Corn, Flat, Oats and Wheat especially recommended and introduced by the Agricultural College of Wisconsin, Iowa, North Dakota, Minnesota, South Dakota, etc.

VEGETABLE SEEDS

We are the largest growers of vegetable seeds in America, operating over 5000 acres. We warrant our seeds to produce the earliest, finest, vegetable grown. Our seeds are cleaned in a special way.

Catalog tells why we have the largest Seed Potatoes trade in the world—one of our outfits holding over 50,000 bushels alone.

Try our 25 packages earliest vegetable seeds postpaid for \$1.00.

WORTH \$100.00 OF ANY MAN'S MONEY

For 10c in stamps we mail free of all cost samples of Silver King variety, yielding 173 bu. per acre; Marston White, yielding \$4. per acre; Billion Dollar Grass, the cereal and hay food wonder, together with timothy, clover, grasses, etc., etc., any one of which, if it becomes acclimated on your farm, will be worth \$100.00 of any man's money to get a start therewith. Keep it close to your breast, who will get it for you. Free booklet, "Distemper, Cause and Cure," dispensed gratis.

JOHN A. SALZER SEED CO. LA CROSSE, WIS.

For DISTEMPER

Pink Eye, Epizootic Shipping Fever & Catarrhal Fever

Sure cure and positive preventive, no matter how horses at any age are infected or "exposed." Liquid, given on the tongue; acts on the Blood and Glands, expels the miasmatic germs from the body. Cures Distemper in Hogs and Pigs and Cattle in Poultry. Largest selling live stock remedy. Cures La Grippe among human beings and will cure influenza, whooping cough, and all other ailments of the throat. Keep it close to your breast, who will get it for you. Free booklet, "Distemper, Cause and Cure," dispensed gratis.

SPOHN MEDICAL CO., Chemists and Bacteriologists GOSHEN, IND., U. S. A.

Do You Love Your Child?

Then protect it from the dangers of croup to which every child is subject. Keep

DR. D. JAYNE'S EXPECTORANT

in your home all the time, then you're ready for the sudden attacks of croup and colds. Neglect may cost you the life of your child. It's safest to be on your guard.

Dr. D. Jayne's Expectorant is the best remedy known for croup; it gives quickest relief.

Sold everywhere in three size bottles \$1.00, 50c, 25c

Live Stock and Miscellaneous

Electrotypes

In great variety for sale at the lowest prices by

A. N. KELLOGG NEWSPAPER CO.
73 W. Adams St., CHICAGO

RUPTURE

Of all varieties permanently cured in a few days without a surgical operation or detention from business. No pay will be accepted until the patient is completely satisfied. Write or call on

FRANTZ H. WRAY, M. D.
Room 306 Bee Bldg., Omaha, Neb.