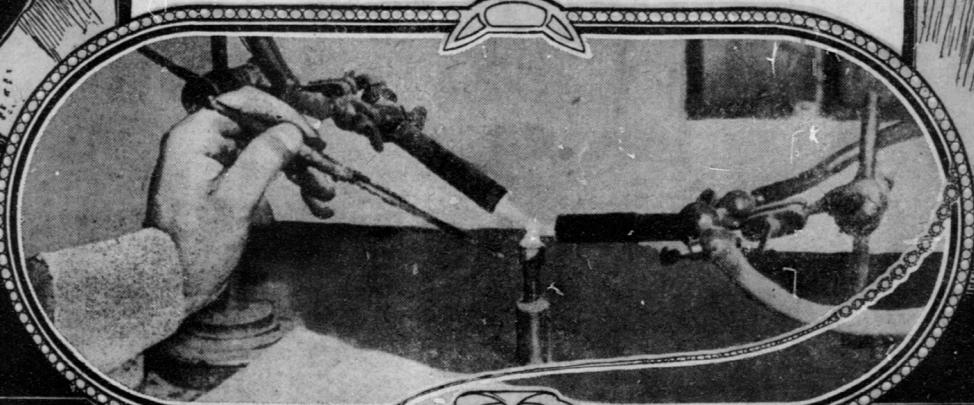




SCIENCE SOLVES the SECRET of the RUBY

A Beekman Street Chemist
Manufactures Blood-Red
Gems while you wait

THE ruby is to-day probably the most valuable gem, ranking even higher than the diamond, because it is so much more difficult to procure. It is a species of sapphire, or spinel, and varies considerably in coloring. Corundum deposits are a variety of the ruby, and valuable stones have been found in several parts of the United States. In Ceylon and Burmah the natives have for centuries found rubies in the alluvial land along the streams, and Syriam, in Pegu, was the Oriental ruby market. Hardly a perfect ruby is known to be in existence.



EVERYONE can now own and wear real rubies of beautiful transparency and color without wasting a fortune in buying them. They are produced right here in America.

In a dingy little laboratory at 66 Beekman street, New York, a mysterious young Hungarian chemist is working day and night at a task which will, in the opinion of the best chemists, revolutionize the gem traffic of the world.

He is producing real rubies by artificial means, but by natural laws.

Artificial Real Rubies.

This has been the dream of the chemists for ages, but the text books of the profession have persistently taught that it was impossible. And yet when Mr. Rudolph Oblatt, the young inventor of the process, took a handful of his fused rubies to the most noted jeweler and gem expert in New York. They were pronounced perfect natural rubies.

When told that they were not natural, but the product of a new process he became greatly excited and exclaimed that the gem trade of the world would be turned topsy turvey by the discovery.

Process Is a Profound Secret.

The process of producing these rubies, while apparently very simple, is so complicated and mysterious that the fundamental secret will remain in the possession of the discoverer and he will really control the ruby market of the world for years to come.

"I select from the small genuine ruby particles which are found in their natural state with the genuine ruby in Burmah little pieces whose color and qualities are practically the same," said Mr. Oblatt in explaining the process to a writer for this paper. "One chip I place upon the top of a 'U' shaped platinum iridium tube. Upon this I focus the heat from two jets of gas produced from oxygen and hydrogen tanks in my laboratory. The gas has a pressure of eight hundred pounds to the inch, and the heat thus produced has a temperature of six thousand de-

grees F. The concentration of this fearful heat is part of the secret of my process.

"The use of these real ruby chips make the rubies that I produce genuine instead of imitations. Rubies are found in Burmah the same way that diamonds are.

"They are mined in the sand, and among the tiny ruby particles thus found are pieces large enough to be selected and cut into gems as diamonds are. When a dealer buys a consignment of rubies he receives a large box of this 'dust,' or ruby sand, and the real gem pieces are selected from it. The remaining particles which are too small to be cut into ornaments are then thrown away, or sold to the stone cutters to be ground into powder and used upon the gem cutting wheels. This has hitherto been the only use to which this ruby dust has been put.

"I melt these particles into lumps, from which are cut real rubies, which are equal in every way to the natural stones and cannot be told from them by experts.

How the Stone Is Melted and Fused.

"As soon as the first chip is melted upon the iridium tube I then pick up another chip which I hold on the end of an iridium instrument in my hand, and when it has melted it flies off, like the jump of a flea, and adheres to the first melted particle on the U-shaped top of the tube. The two particles immediately fuse. In that way I build up a genuine ruby whose weight varies from five to ten carats. The operation varies from one to two hours, according to the size of the gem that I wish to produce.

"Then comes the difficult part of the operation. Nature, in the production of these beautiful gems, had at her command tremendous sustained heat, and the cooling process lasted for years, and perhaps ages. Who can tell? And yet in many cases the cooling process was so rapid that the outside of them cooled before the inside, and produced in millions of instances minute cracks which are called ribbons and run through the more imperfect rubies found in the earth. The absence of these ribbons—which are not perceptible to the naked eye, but are noticed under a magnifying glass—make the value of the gem.

"At present I have a different process



Watching the Blast for the Proper Color

of cooling which works very well, but I am now working upon a process of cooling which will take days and which will be perfect. I am sure of it. I can even now produce rubies that have no cracks, but the process which I shall put into operation shall be less expensive.

"The cooling process is one of the most wonderful parts of my secret.

"I then send the enlarged ruby to the

lapidary, who cuts it in exactly the same way as the natural stone is cut. For, since it contains all its natural properties the process of cutting, setting and finishing must of necessity be the same as in the case of the natural ruby from the Burmah mine.

"In the process of cutting and polishing from 40 to 50 per cent. of the enlarged ruby is wasted, but the finished product, when returned from the cut-

ter, is a gem perfect in brilliancy, color, live fire play and all the other beautiful qualities possessed by the natural ruby, and has been so pronounced by some of the most eminent university professors and precious stone experts in the world."

Professor Harold Hartley, of Balliol College, Oxford, when he received from Mr. Oblatt one of these assembled gems, wrote in great surprise to him as follows:

"I have examined the rough stone you sent me yesterday and have determined its qualities with the exception of its density, as I was much pressed for time. This I will do and return you the stone. It shows no signs of crystalline faces, and its outward appearance suggested that it had been produced by fusion. The presence of small spherical cavities in the stone confirmed this supposition. Its hardness was approximately that of corundum (ruby). It was strongly double refracting and gave a uniaxial figure, the double refraction being of negative character. It was also strongly pleochroic. All these properties are possessed by the ruby. The presence of small circular cavities would betray to an experienced mineralogist the fact that the stone was not of natural origin. At

and through his studies became recognized as a noted chemist and precious stone expert, was impressed by the fact that large quantities of small particles of precious stones were yearly thrown away. This because of the smallness of them. He believed that a process for the fusion of these precious particles was possible. He began to experiment, with the result that he wasted his substance and became a poor man, even losing his small income from his work for jewels and chemical firms. They believed him a visionary and would have nothing to do with him.

He had first chosen the ruby as the object of his experiments because it seemed to him that this stone offered the greatest chances of success. And all this in the face of the fact that hundreds of years of labor on the part of chemists had been wasted in the self-same experiments.

He labored on in the face of great discouragements till, on October 6, 1885, his efforts were suddenly crowned with success, and to his unspeakable delight he produced a ruby which was pronounced genuine by the most noted chemists and mineralogists of Europe. They would not believe that it was a fused gem.

Finally loaned one hundred pounds sterling, with which he fitted up a laboratory and commenced in earnest the work of producing the gems. He was so successful in this that a gem sent in the rough to Professor Hartley, of Oxford, elicited the above tribute.

Following Nature's Own Processes.

Professor Silvanus P. Thompson, R. A., in his lecture at the London Institution (Royal Academy) on the subject of the optical properties of diamonds and rubies, said it was the real ruby produced in the laboratory instead of the crucible of nature.

There are true crystalline gems, and there are imitations, but quite apart from any imitations in the gross sense of the word such as those sham jewels of which there are so many in Regent street, made of glass, there are a large number of other materials, natural products, true gems in the strictest sense of the word, not regarded by the public perhaps in the same way as the gems whose names they know better. It is not wearing an imitation when they wear these, but the true product of nature.

In these processes he claimed that in respect to these gems man had overtaken the processes of nature, and had succeeded in the laboratory in producing real rubies artificially. They were produced by the use of the same natural laws that nature had used in their production. Therefore who should say that diamonds, sapphires and emeralds could not be produced?

Success Found at Last in New York.

After his meagre successes in London Mr. Oblatt concluded that America was the place for him to locate for the final work of putting his natural gems upon the market. He came to New York, where he found abundant wealth ready at his command. A company was organized to assist him, and with this he fitted up the little laboratory at 66 Beekman street, where he is working to-day in the production of the gems. The company's office is in a downtown office building, and orders for the gems are flowing in from all parts of the country and from Europe. So it will no longer be necessary for those who wish to wear these beautiful gems to import them and pay the heavy tariff tribute at the docks.

The gems are in every way equal to those that are found in the rough in Burmah, and after they are cut cannot be told from the natural stones even by the best experts in the world—for the simple reason that they are perfectly natural.

It is not probable that this little laboratory, hidden away among the great office buildings of Manhattan, will immediately affect the gem market seriously, for it is not intended to sell them at such wholesale reduction of prices as to cause the market to suffer. The profit on them, though, is so obviously great that the wealth of the manufacturer will pile up rapidly.

Rubies and diamonds are not worn because they are expensive, as many people think, but because they are beautiful. They greatly add to the beauty and attractiveness of the wearer, and were they as cheap as water, which they never will be, they would still be worn by those who know how to dress for artistic effect.



Sorting Ruby Dust for Material

Even then the jewelers with whom he had worked refused to assist him peculiarly and he went to London, hoping that there he would be given the assistance that he so much needed to perfect his work.

After more discouragements he was

Every one listened, smiling. "Lillo, Calais!" The call was repeated, to the consternation of the breathless audience in the classroom. Then: "Hello, Calais! This is Dover! Do you catch us?"

The words were slowly ticked out in the Morse alphabet.

There was a hush of excitement in the room and the smiling faces suddenly became set and pale.

"Why, don't you answer, Calais?" The

question came faintly with some of the letters missing.

"We have caught a message off the air between England and France," exclaimed a student. There was great excitement till from the window a sending pole was discovered on the roof of a neighboring building, and at an open window near a lower class man was discovered industriously sending the mysterious message which was creating so much excitement in the class-room.

THE LADY OR THE COUGAR

An Idyl of Southern California

BY ALLEN KELLY

THE sun had gone down behind the Topa-Topa ridge, the serrated shadow had crept across the Ojai, slowly at first, and then with rapid lengthening over the valley, until it joined and became merged with the gloom of the forest on the opposite hills. And then the great round moon came up into the sky and made the night glorious.

Guitar and Aigrette.

The soft wind blew down the valley of the Ojai, carrying the faint perfume of the sage and the Yerba Santa, and tempted Tom Newby out of his cabin. The sweet smell of the herbs and the caressing touch of the night wind made lonesome Tom Newby just the least bit sentimental, and he tuned up his guitar, rolled and lighted a cigarette, leaned back against the front of the cabin and picked out the accompaniment to an old Spanish love song that he had learned years ago from a Senorita down on the Camulos.

As he hummed the soft Spanish syllables—not very loud or clear, because of the cigarette between his teeth—Tom Newby wondered if it wouldn't have been better for him after all if he hadn't left the Senorita. Instead of making tortillas and frijoles for Mateo the vaquero, and looking after half a dozen brown-skinned little Mateos, she might have been helping him take care of the

bees and the honey and he—well, it wouldn't have been so lonesome for him up here on the Ojai.

And then Tom Newby remembered that last dance down on the Camulos, and he played the fandango, that same old fandango that has been played on every guitar in the world, and as he played he saw the Senorita once more through his half closed eyes. She was looking at him through the foliage of a grapevine in the garden, and her eyes glowed with the excitement of the dance.

But there was something odd about the Senorita's eyes. Surely she had eyes as black as coal; but here they were shining with a greenish light that was very unpleasant. "A curious fancy," thought Tom Newby, shaking his head to settle his wandering wits.

But the eyes did not disappear when he shook his head. They belonged to a cougar that was lying stretched along the lower limb of an oak close to the cabin. The Camulos, the dance under the arbor and the Senorita vanished

from Tom Newby's mind in an instant, and he forgot how lonesome he had been.

He stopped playing the fandango and was about to spring to his feet when the cougar sprang her head, gathered herself for a spring and began switching her long tail from side to side. Tom's hand fell upon the guitar strings and at the sound the cougar relaxed her attitude.

Music for the Cougar.

Tom played the fandango again and the cougar stretched out along the limb and watched him, seeming to be soothed by the music. Whenever Tom's hand faltered she showed signs of uneasiness, but while he played she was contented.

Tom played all the variations of the fandango that he could remember, and then he tried a Spanish waltz, all the time trying to think of some way to get out of his dangerous situation. Twice he stopped the music experimentally, but the evident hostility of the cougar induced him to resume his playing each time.

She was so near that she could reach him in one bound, and he dared not attempt to jump from his seat to the door of the cabin.

At last he thought of the dog, which ought to be somewhere about the place, and he began to whistle as he played, softly at first and then in sharp, clear notes, familiar to the spotted hound. The dog heard and came trotting around the cabin from some bone-burying rites back in the brush.

The Dog to the Rescue.

The hound scented the great cat up in the tree, and gave tongue in a hoarse, angry bay. The cougar, startled, turned her eyes toward the dog and Tom Newby dropped the guitar and sprang into the cabin.

There was a yellow flash in the moonlight as the cougar shot out from the limb like a coiled spring suddenly released and cat and dog rolled over together on the ground. Tom Newby seized an axe and went out to help the hound, and at the first chance that offered he sunk the blade into the cougar's spine. A blow on the head ended the sufferings of the mangled hound.

And then the night wind grew chilly to lonesome Tom Newby and he shut himself up in the cabin with his guitar and divided his regrets between the Senorita and the spotted hound. He was saddest when he thought of the hound.