DECEMBER, 1948

The Lapidary Journal



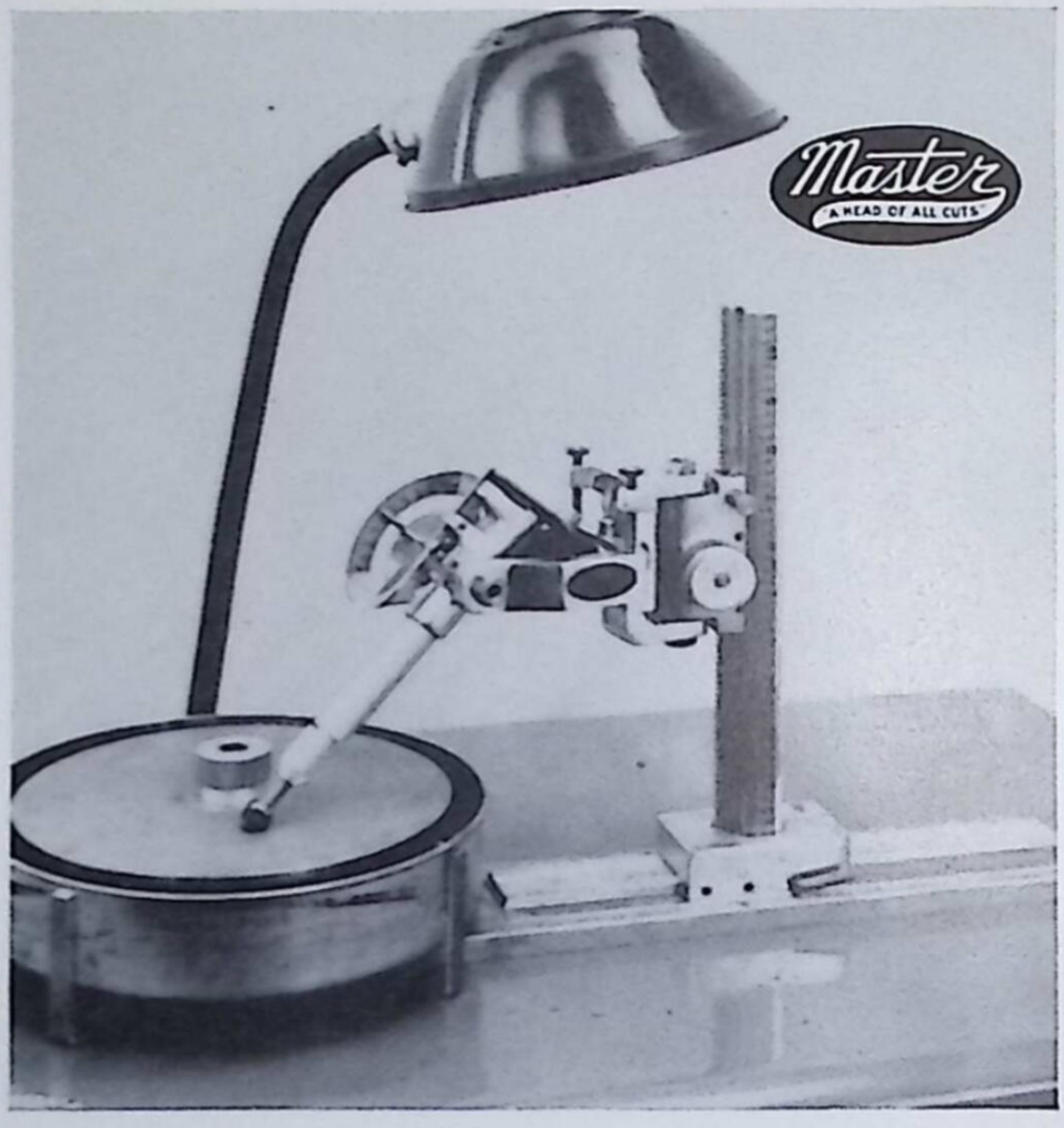
LA CUBANA
Carved from Obsidian by Donal Hord

A National Magazine for
GEM CUTTERS + COLLECTORS + JEWELRY CRAFTSMEN
Hollywood, California

VOLUME 2 50c PER COPY NUMBER 5

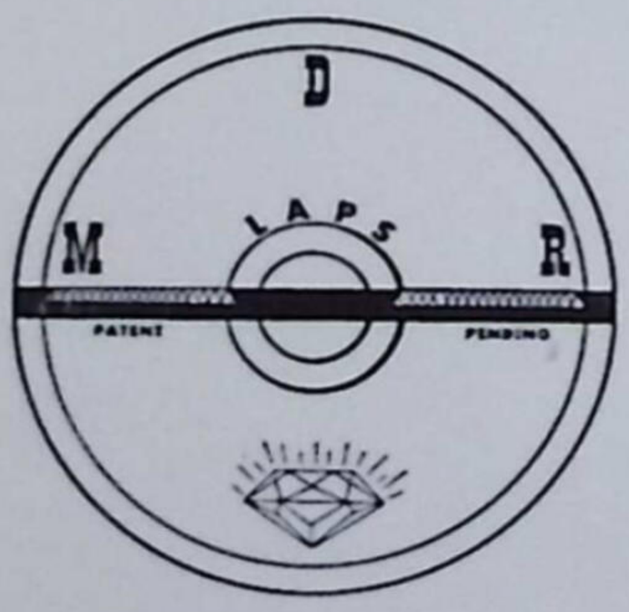
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The Lapidary Journal

A NATIONAL MAGAZINE
for
THE GEM CUTTER, COLLECTOR
AND JEWELRY CRAFTSMAN

NINTH ISSUE

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Volume Two | December, 1948 | Number Five

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LELANDE QUICK .... *Editor and Manager*
ALETAH QUICK .... *Circulation Manager*

◆ Cutting Facets by the Potato Method

By DR. J. DANIEL WILLEMS
20 N. Wacker Dr., Chicago 6
Author of *Gem Cutting*
Member of Chicago Rocks & Minerals Society

Facet cutting was born in the mind of Louis de Berquen, a Belgian law student, in 1456. It is not recorded whether or not, when he started working with facets, he knew exactly what he was doing. It seems doubtful because the details of his work have been lost in antiquity. The optics involved in modern facet cutting were probably not known to him or anyone else at the time. The first diamond cut with facets, as we know them now, was a crude and ugly thing compared to our modern brilliant cut. There is no record, to my knowledge, of the succeeding steps by which the problems inherent in facet cutting were gradually evolved and solved.

One must conjecture, nevertheless, that Louis had intimate knowledge of, and acquaintance with, some of the great diamonds of his time; that he observed that polished surfaces on gems reflected light not only from their outer, but also from their inner surfaces when held to the light at precise angles. He must have solved, at least partially, the problem of guiding light rays into the stone, then turning them around in a U-turn and guiding them out again. An observing and resourceful young man he was, indeed. And it is said that he never did graduate from law school.

Today the basic principles of the behavior of light in regard to a gem stone are understood and the precise angles have been worked out for us, so that we need only to cut the facets in their proper places, set them at the correct angles, and success is more or less assured.

Louis became sought after as a diamond cutter by the royal heads of Europe, who were the possessors of the world's gems in those days. But we in our day can do our own facet cutting on our own gem materials. We merely need to understand the basic rules and do the cutting accurately and precisely.

The beginner who has cut many cabochons, but has never ventured into facet cutting must realize that the latter is not a natural sequence of the former. The intent, the procedure, and the problems are quite different. In the cabochon the polished surface is not flat, but rounded convexly; there is not one large, single, all-inclusive surface over the top, but many small ones broken up into a symmetrical design arranged in a definite geometric pattern; and the stone does not consist of only one important area or part, but two—the crown and the pavilion. Furthermore, as the faceting goes on the stone is constantly altered, beginning with the small number of large facets and progressing to larger and larger numbers of smaller and smaller ones. Therefore, each time another set of facets is cut the stone changes in its appearance and looks quite different from the previous form. In this process there are times when the stone in its half-cut state looks alarmingly lopsided and off balance. It is only when the cutter is sure he has followed the steps in cutting carefully that he will have the confidence to proceed.

To acquire the skill for cutting facets with precision the cutter must first have clearly in his mind the fifty-seven facets of the brillliant—where they are placed, how large they should be, and how they should be related to the table, to the girdle, and to each other. Then he should start preliminary practice on some simple object or material which is inexpensive and where faulty cuts can be quickly altered, or a new "stone" can at once be started. This author has found nothing more simple than a potato. It is admirably adapted to the experiment and practice in hand. In an hour of cutting a large volume of knowl-



The Editor with the Author at the Los Angeles Lapidary Society meeting on November 1st, 1948. *See item on Page 350.*

edge and facility with the hands can be acquired, which would take many days or even weeks if it were to be done on quartz — the cheapest and most easily available of faceting materials. Corrections can be cut at once while the error remains fresh in the mind. An important feature is the fact that the step-by-step method, that is cutting each facet in its proper sequence, will impress itself upon the cutter's mind. This is essential to successful cutting.

After the cutter has become proficient in the two standard styles of cutting—the brilliant cut and the step cut—he will have enough experience to realize that he is only half prepared to cut the ordinary modifications of the standard cuts, such as the ovals, the pear shape, the triangle, and all the numberless shapes that will crowd into his mind. Again, he can resort to the simple potato to perfect his technique before undertaking to cut a new or fancy style, or to sacrifice a fine



Reading from left to right—A. B. Meiklejohn, Lelande Quick, Richard Mitchell, Ray Merz, Dr. Willems, Thomas Daniel and John Gaston. Mitchell and Daniel are the "M" and "D" or M.D.R. Mfg. Co., while the men at either end are Past Presidents of the Los Angeles Lapidary Society. These men acted as judges of the "faceted" potatoes described on Page 350.

piece of rough material by experimenting.

New ideas will also occur to him, such as placing a group of four wing-like facets at the point of the pavilion of a baguette, or a marquise, or doubling the number of break facets. Experimenting on potatoes will tell him whether his ideas are feasible or disastrous. It seems safe to state that Louis de Berquen, working hard on his friends' diamonds while neglecting his law studies, did not use potatoes, nor any other similarly simple method. Nor have the gem cutters during the following five centuries (nearly) done much if anything to acquire their skill as easily, simply and quickly as you and I are now able to do it. I have found the potato method invaluable and recommend it heartily to every beginner.

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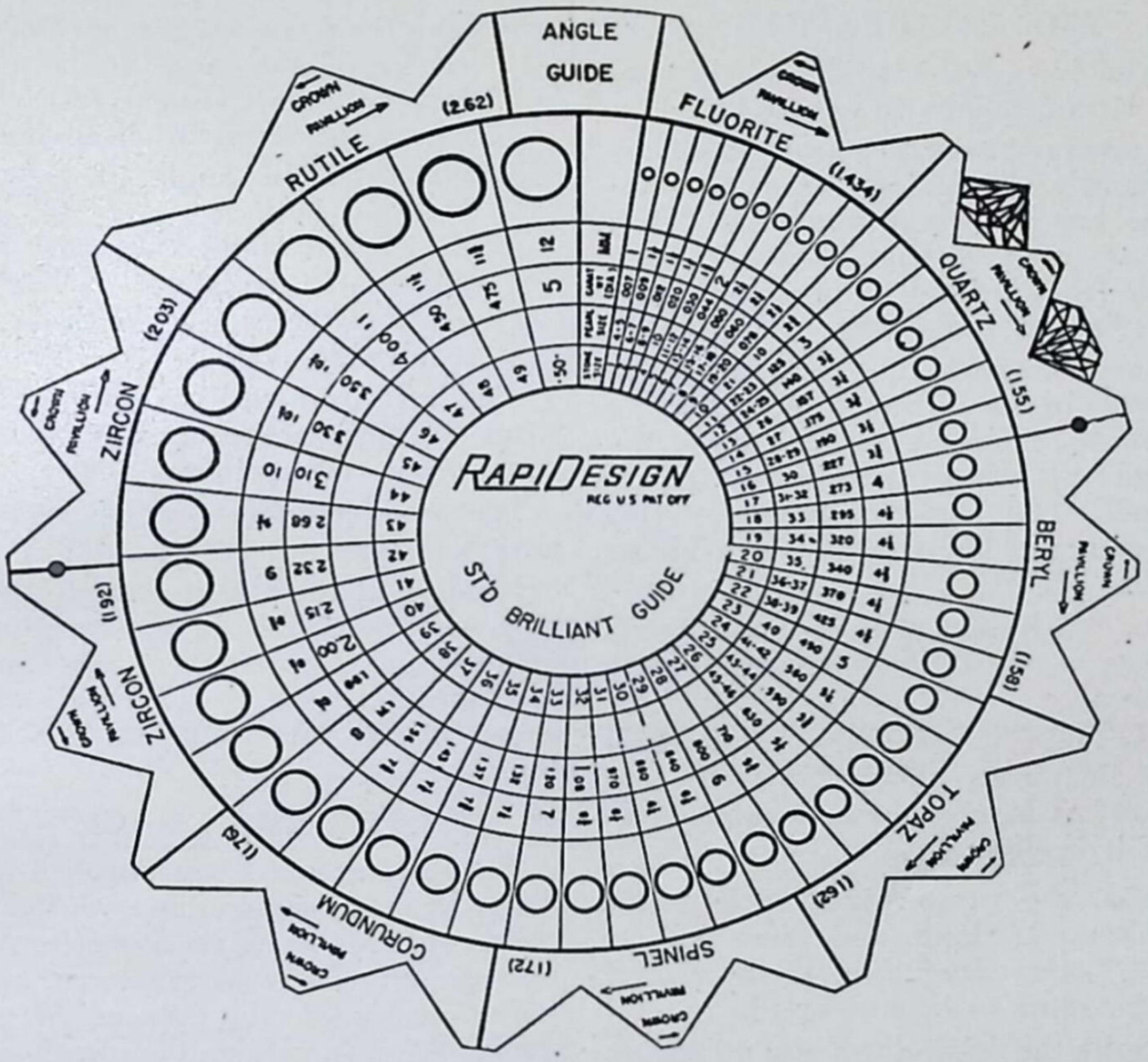
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◆ Lapideasels and Rock Racks

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Member of Los Angeles Lapidary Society

THE LAPIDEASEL

Do you have little lapideasels in your case? If not, maybe you should.

For several years, the problem of advantageously displaying non-opaque cabochons has been very annoying. They need, of course, some light coming through from behind to properly bring out the beauty of the stone.

It soon becomes apparent that the stone should be propped at an angle of 30 to 45° from the vertical to get the best results—just as a painting sits on an easel. The material used for this purpose should be as nearly invisible as possible.

There are, however, no lapidary easels of this type, so it becomes necessary to make some.

I was able to get some scrap sheet plastic in pieces about 2″ x 15″, of 22/1000″ at a very nominal price. Here is how it is done.

1) Cut the plastic into little strips about 2″ long and from 1/8″ to 3/8″ wide depending on the size of the stone to be supported.
2) Split the strip down the middle to the center or 1/8″ to 1/4″ beyond, depending on the size of the stone to be supported by it.
3) Dip the two small ends of the split portion for about 1/4″ into boiling water and bend them back about 120 to 140°. This makes the little "feet" on which the lower edge of the stone will rest.
4) Bend the strip back in the direction opposite to that of the feet, dip in boiling water and pinch it down. The length of either limb is to be determined by the size of the stone with which it is to be used. The smaller the stone, the shorter the front arm will be. The back portion is left long until such time as the lapideasel is used. It can then be cut to the exact length needed to give the desired angle for setting the stone. If the cut down the center of the strip is the proper length, it will extend just beyond where the strip has been bent.
5) Now dip the angle of the sharp bend in boiling water and adjust the spread of the two front limbs, which will be about 45° and the angle of the back leg with the front arms which will be from 50 to 90°.

The result should be a lapideasel. After a little practice, they can be made very easily and rapidly.

The accompanying sketches will show how it is done.

Bending of the plastic material is very easy when it is hot. It sets very quickly on cooling. Any tweezers can be used to make the bends. I use a pair of surgeons' tissue forceps about five inches long.

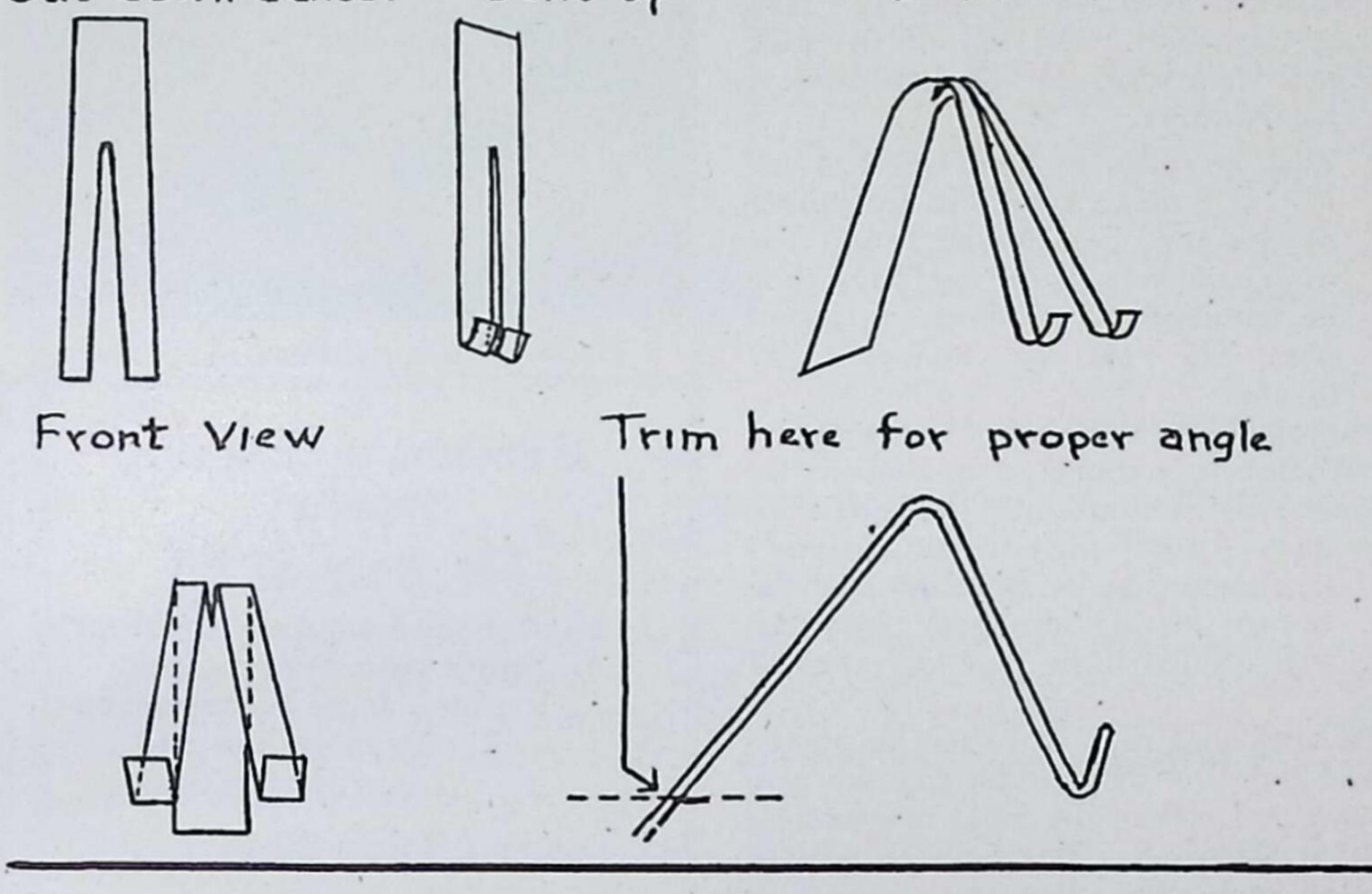
THE ROCK RACK

Not so long ago I was attacked by the desire to do some faceting with the usual consequences. The first few efforts were bizarre and somewhat gruesome, but did have occasional flat places here and there. After a while, the result was a rock that somewhat resembled the pictures in Dan Willems' book.

Then came the problem of what to do with it. One could always wrap it up and put it away, but that seemed singularly uninteresting. So thoughts turned to displaying it.

A faceted stone just won't assume any position that shows up its beauty. It flops over on one of its sides, or lies on its table and presents its posterior aspect for inspection, neither of which has much charm. The solution of the problem is to devise something that will be as nearly invisible as possible and will stand the rock up pert and trim for all to see. Wire clips are nice but rather difficult to make. Jamming the bottom part of the pavillion down into some wax holds the stone in the proper position but produces a necrotic fish eye in the center.

LAPIDEASEL



ROCK RACK

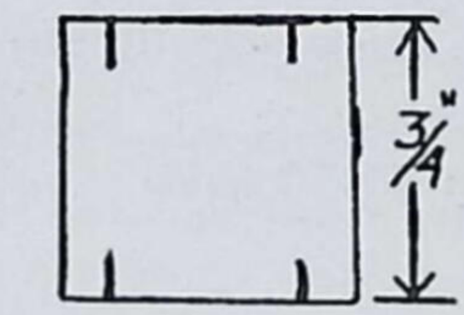


Fig. 1

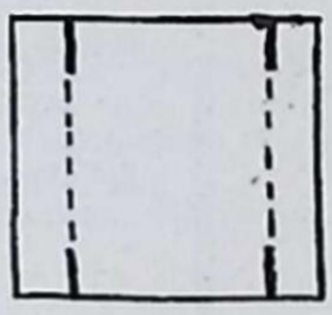


Fig. 2

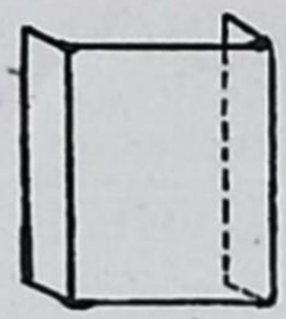


Fig. 2-A

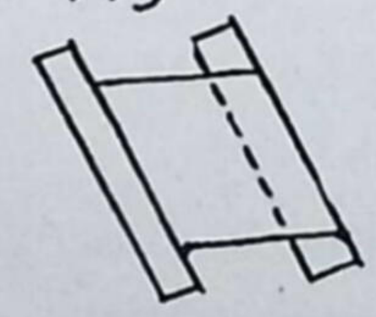


Fig. 3

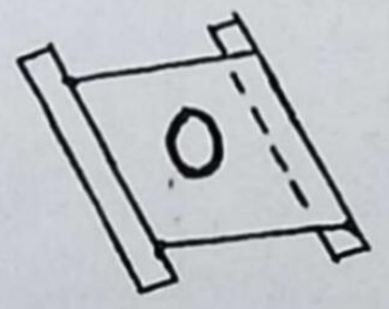


Fig. 4

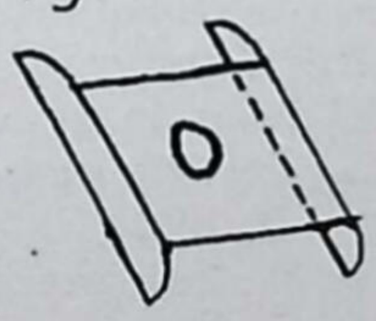


Fig. 5

Diagrams of LAPIDEASEL and ROCK ROCK described in accompanying article.

The acetate plastic which was used to make lapideasels is 22/1000″ thick and just about right for rock racks. After quite a lot of experimenting, the following procedure was worked out.

1) For stones under six carats, start with a ¾″ square. Then make four cuts each ⅛″ long and ⅛″ from each corner as shown in *figure one*. Be sure that these cuts are made on opposite sides of the plastic square and that they all run in the same direction.

2) Dip in boiling water and bend down the two flaps at a right angle as shown in *figure two* so that the bend will be a straight line connecting each of the two pairs of

cuts. This will give the rack two little feet, each 1/8" high. It will now look like a tiny table with a top 3/4" by 1/2".

3) Turn the table over with the feet upward and cut off the 1/8" flap at each end. The top of the rack will then measure 1/2" as shown in *figure three.*

4) With an ordinary hand ticket punch (3/16") make a hole in the center of the top. See *figure four.* The upper corners of the feet may then be trimmed off as shown in *figure five.* The rock rack is now ready to use.

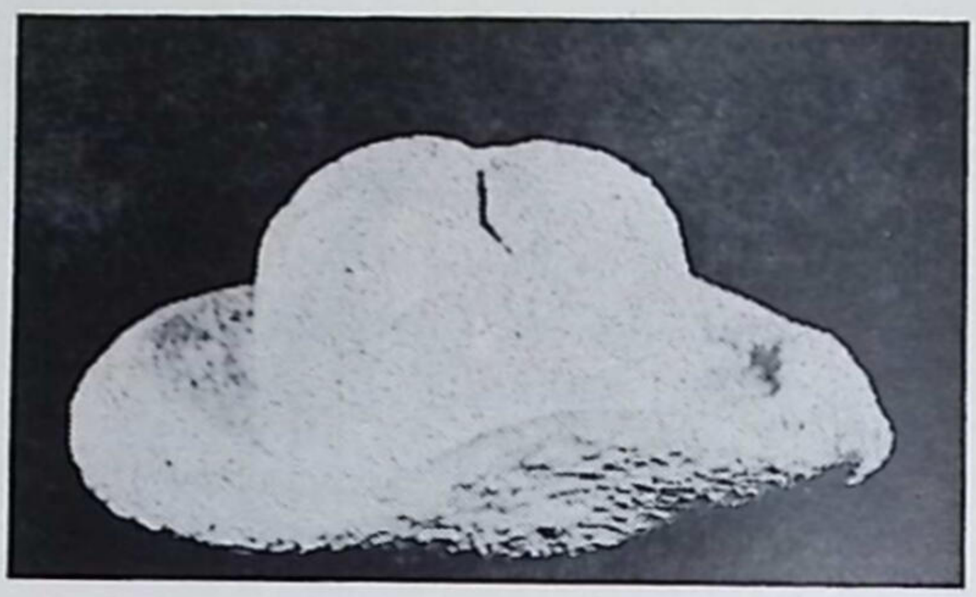
Because of the thinness of the material and because it is transparent, there is no demonstrable diminution in the brilliance of the gem. A tooth pick or match dipped in plastic cement and rubbed around the hole, before setting the rock into the rack, will secure it in position after it dries.

The rock and rack can then be picked up and handled without having the gem flip out and roll to the most inaccessible place in the room. The construction of the rock rack makes it easy to line them up in rows in trays for storage or to show.

There are of course many variations of these basic ideas which gem cutters will soon discover.

A PETRIFIED HAT

This hat was found on the Gulf of Mexico by an old Indian fighter who was quite a collector of sea shells. It found its way to Cheyenne, Wyo. where it had been in storage with shells and curios for 40 years when brought to light. It came into the possession of Mr. F. W. Salfisberg of Cheyenne, Wyo. Mr. Chris Dietz, one time assistant Geologist of the State of Wyoming, examined the hat and stated that it was a genuine hat completely covered with brain coral and that it had to be in water with a constant temperature of about 70° or over for the coral action to take place. The hat weighs 13 pounds and looks like a Spanish American War soldier's hat. The owner removed a small section of coral on the inside and there one can plainly see a black felt. It does not have a leather sweat band. This hat is on display at the Black Hills Agate & Gem Shop, C. A. Jones, in Rapid City, S. D. and is a constant source of curiosity to all who see it.



Picture of hat described above.

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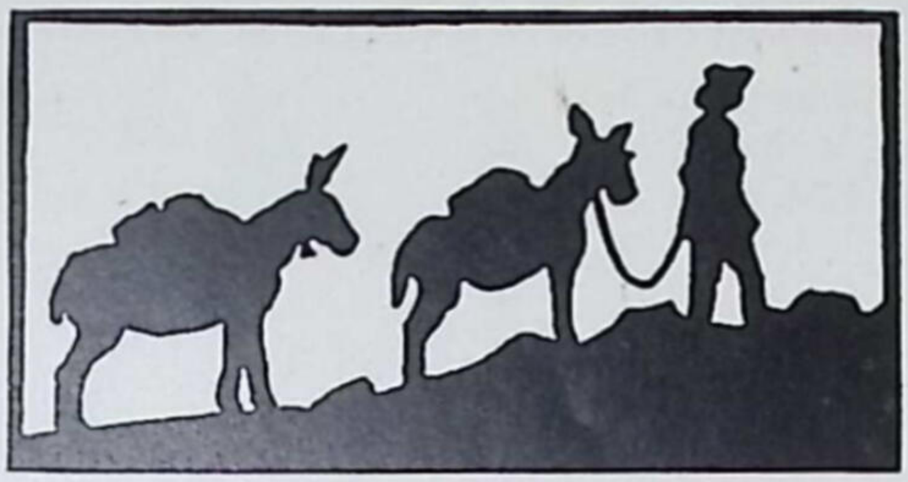
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If you live in Los Angeles or vicinity you're lucky, for then you can drop around and see all these nice things. Please come by.

Merry Christmas and a Happy New Year to All

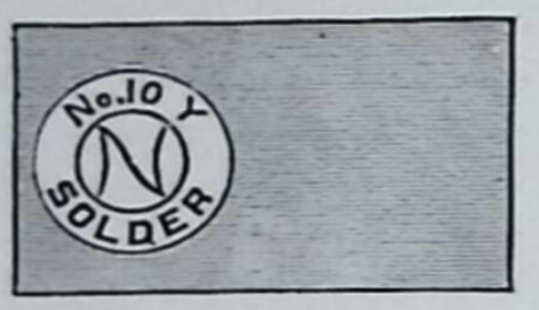
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No drilling necessary. Close with tiny screw.

PENDANT MOUNTINGS

	Sterling	G. F.
Nickle Size	60c	60c ea.
Dime Size	52c	None
Quarter Size	65c	None
Half Dollar Size	65c	None

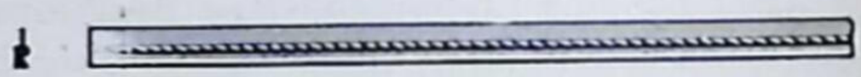
For Assortments of 12 or 12 of a Kind Deduct 20%

All Sizes Available in Nickel Silver in Quantities of 2 doz. or More

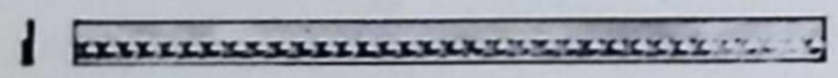
GALLERY (bezel) WIRE (weights quoted are for 10K Gold)



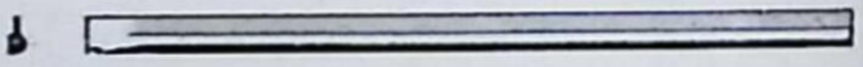
No. 1—7 DWT. per foot
Sterling.....**90c** per ft. 2 ft.....**$1.44**
5 ft. ... **$3.25.** Will be available in 1/20-10 K. G. F.



No. 3—3½ DWT. per foot
Sterling .....80c per ft.
1/20-10 K. Gold Filled.....90c per ft.



No. 2—4¾ DWT. per foot
Sterling .....80c per ft.
1/20-10 K. Gold Filled.....90c per ft.



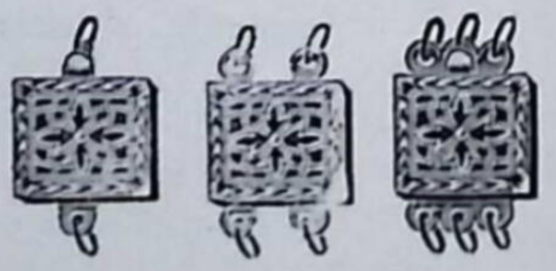
No. 4—3½DWT. per foot
Sterling .....80c per ft.
1/20-10 K. Gold Filled.....90c per ft.

All Gallery Available in Larger Quantities

CLASP ASST. No. 1—4 of each of these—
Sterling—12 in all **$2.95**



CLASP ASST. No. 2—4 of each of these—
Sterling—12 in all **$2.95**



TORPEDO TYPE SEAMLESS CLASP



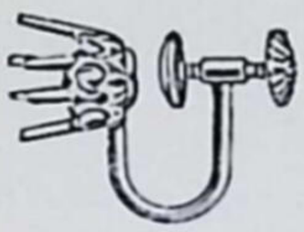
Sterling or G. F.....12 for **$2.50** 35c each.

The GEMINLAP MART

Wholesale Jewelry and Lapidary Supply House

terials — Bargain Assortments — N-Brand Solder

On all finding items add 15c for airmail — other items add regular postage and INSURANCE. Overage refunded.



No. 134
Ear Mounting
Sterling

$1.65 pr. 6 pr.....$8.75

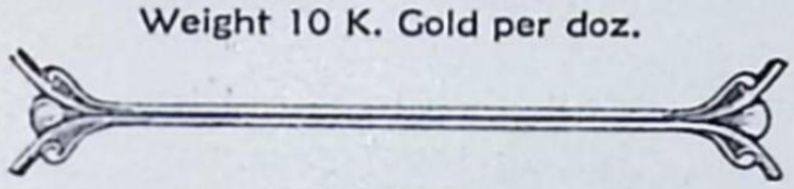
ASSORTMENT of 8 G. F. & Sterling Neck Chains (See October ad) ..... **$4.25** 2 for **$8.00**

One of each of these:
34M, 34MG, 35M, 35MG, 11M, 11MG, 56M, 56MG

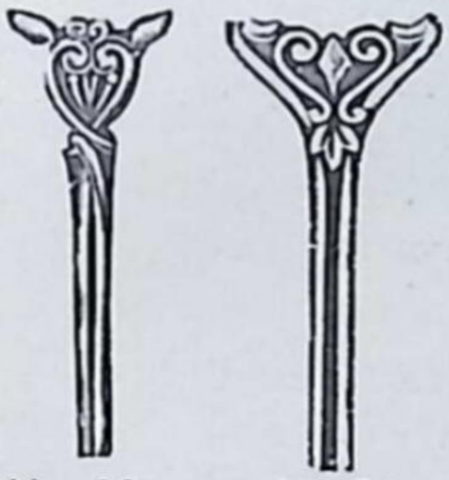
TIGER EYE Slab Assortment (all colors)
50 sq. in. for **$6.00** — Weight 2 lbs.

RING SHANKS

Weight 10 K. Gold per doz.



No. 13½
8½ DWT. Dozen



No. 18
16½ dwt.
Doz. Pair

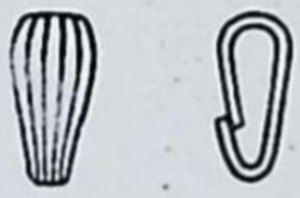
No. 24
25 dwt.
Doz. Pr.

STERLING

No. 13½
10—**$4.50**
60c ea.

Nos. 18 & 24
10pr.—**$5.37**
75c pair

Price for gold on inquiry.



9a
Locket Loop
SS or 1/20-12 K. G.F.
Doz. **$1.25**

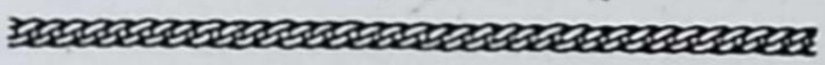
NOTE: SS & GF qualities may be grouped for gross or dozen prices.



63
Acid Test
Gold Plate
Swivel
$3.00 Doz.
Gross $30.



503
Fish Hook
Clasp
S. S.
$2.40 Doz.
Gr. **$23.75**



13

Curb Chain (Heavy)

S. S., 5′, **$1.85, 47c** ft. G. F., 5′, **$2.00, 50c** ft.



33

Cable Chain (Heavy)

S. S., 5′.....**$1.65, 43c** ft.
G. F., 5′.....**$1.80, 46c** ft.

No. 17 Joint Wire for Drilling and Attaching Bails
1/20-12 K. G.F. or S.S.—10—3″ lengths.....**$1.44, 18c** ea.

BAILS



9



9a



9d

Nos. 9 or 9a
S.S. or G.F.
$2.00 doz. **$15.00** Gross
No. 9d S.S. or G.F.
$1.30 doz. **$11.00** Gross

EAR WIRES

Sterling—Very well made — for round stones.
7MM pad—doz.....**$1.00**
11MM pad—doz.....**$1.50**

ROUGH TIGER EYE (New Shipment)

Straight grain, perfect cutting material for color, hardness, compactness. Guaranteed good or money refunded. Rare colors will sell out fast—Order Now. We have quantities of golden available to cutters at special prices in amounts up to 200 lbs. If you use 10 lbs. or more a month of golden send for FREE rough piece. Request on your letterhead.

GOLDEN TIGER EYE—10 lbs.—**$12.50**—**$2.00** per lb.
BLUE TIGER EYE—**$2.99** per lb.
BLUE GREEN TIGER EYE—**$2.99** per lb.
RED TIGER EYE—**$4.75** per lb.
FANCY yellow & green or blue—**$2.00** per lb.

} Five-pound assortment THESE THREE colors—Deduct 20%

Add enough postage — overage refunded

4604 South 49th Street

Milwaukee 14, Wisconsin

Telephone EVergreen 3-4241

◆ Coloring Gemstones with X-ray and Radium

By DR. RONALD W. MacCORKELL
Past President — Hollywood Lapidary Society
608 S. Hill St., Los Angeles 14

The coloring of diamonds with X-ray is not new. The process was mentioned in literature as early as 40 years ago. In fact, it was the reading of an article on radiation of diamonds 15 to 18 years ago which started us on our experiments with coloring of diamonds and other gemstones.

Our first attempts were with three small diamonds of approximately one-tenth carat each and of a very inferior quality. We had access to a small 50 kilovolt X-ray therapy machine and decided to place the stones in the path of the beam of X-ray so that each time the machine was operated the stones received a bombardment of X-rays. We kept very close watch over the stones and after a few weeks the stones began to turn a very pale green. Further radiation resulted in a deep aquamarine shade.

Having read that diamonds so treated were colored only on the surface, we decided to break the stones open and we found that the three stones were colored evenly all the way through.

We then tried X-ray on sapphires, some of which were colorless while others were light yellow in color. After several weeks of treatment the stones gradually turned to various shades of brown and reddish brown.

In the past two or three years we have worked on a number of types of gemstones, using heavy X-ray equipment and also radium. Certain pieces of amethyst were found to change to a darker color under treatment with X-ray or radium, the change in color being effected only by long and heavy exposures. Colorless quartz crystals were found to change to a smoky brown. Colorless zircons turned various tints of yellow, pink, lavender, lilac and violet. The colors are of delicate tints and to us they seem very beautiful.

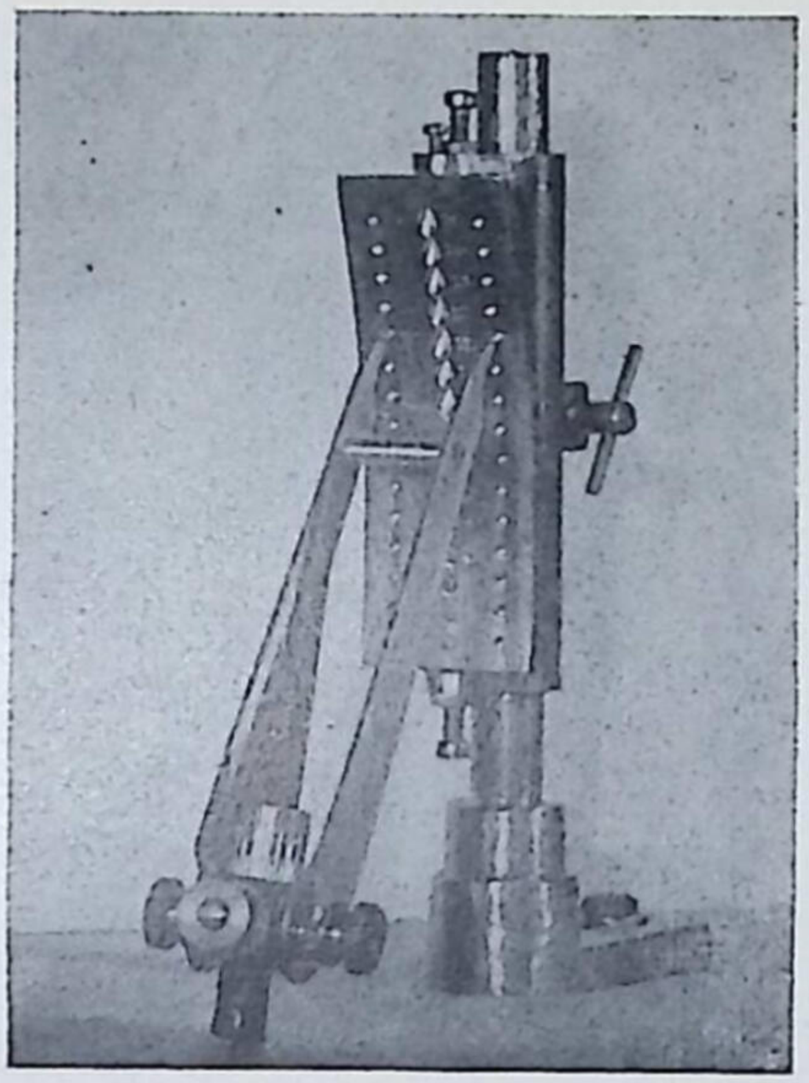
X-rays seemed to produce yellowish colors in the zircons, while radium made them pink, lavender and violet — the color turning from pink to lavender and then to violet as the exposure time increased. Some topaz pieces change from light yellow to deep sherry color when exposed for long periods to radium rays. Others change not at all. Pale light green beryl seems to deepen in color on long exposures to either X-rays or radium.

There were many other stones treated but the most spectacular results were obtained with kunzite. Kunzite, as most of us know, is a variety of spodumene which differs from other spodumene by its beautiful lavender to lilac color and especially by its fluorescent qualities after exposure to X-rays or radium. Most kunzite turns a beautiful grass green or emerald green when bombarded with X-rays or radium rays. Some specimens turn a light green to a yellowish green. All the various colors and shades of kunzite, including the colorless crystals, change to some shade of green under the influence of the rays. The color penetrates through the crystals and kunzite, being dichroic, the crystal appears darker in color when viewed through the long axis and light in color through the short axis.

The length of time required to color a gemstone depends on the size, type of gemstone, and the amount of X-ray or radium used. We use from 1,000,000 to 3,000,000 roentgen units of X-ray or 10,000 to 30,000 milligram hours of radium, to color a gemstone up to approximately twenty-five carats.

It takes us two to six weeks to color

The HANDY FACETER



A faceting tool designed by Anthony Espositer, a man who has been a lapidary in New York City for the past fifty years and used by him for the past seventeen years.

Commercial lapidaries use the ordinary jamb peg and hold the stick in their hand. There are advantages in hand cutting which outweigh mechanical aids, but hand cutting requires a long period of apprenticeship to become proficient and constant practice to do good work. This is a condition which few, if any, amateurs can fulfill so the designer had to produce a tool which did everything the hand cutting did and yet enabled amateurs to do work comparable to professional standards. This tool is the answer. It is adaptable for left or right hand and is of non-corrosive construction. Two adjustable masts are furnished, one for the cutting bench and the other for the polishing bench.

As with the ordinary jamb peg when using this tool it makes no difference if the stone falls off the stick and must be recemented, or if the stone bends out of alignment by reason of the cement becoming warm, or because the stone is dopped off center or repolished or repairing old stones or stones on which the facets are irregular because they have not been cut on an indexed machine or stones which have been cut by an unskilled worker.

It makes no difference if the wheel is worn down in the center of the polishing surface. This tool overcomes these difficulties because any individual facet is easily picked and placed in the position required just as the commercial lapidary does when working by hand on the ordinary jamb peg.

The stone is moved across the wheel and suitable pressure is entirely controlled by hand. The tool is easily picked up and the facet examined just as the commercial lapidary does.

By using the center line of holes the operator can hold the stick in the hand and use the jamb plate just like a jamb peg is used. The operator can cut the large facets by hand and the small ones by use of the hand tool or he can use the hand tool for all the facets.

Thirty-two (32) index standard equipment and three dop sticks are furnished. Price $50.00 f.o.b. Greenwich, Connecticut. One per cent sales tax additional to Connecticut purchasers. Terms C.O.D. only. Money refunded within 30 days (less shipping charges) if the HANDY FACETER is unsatisfactory.

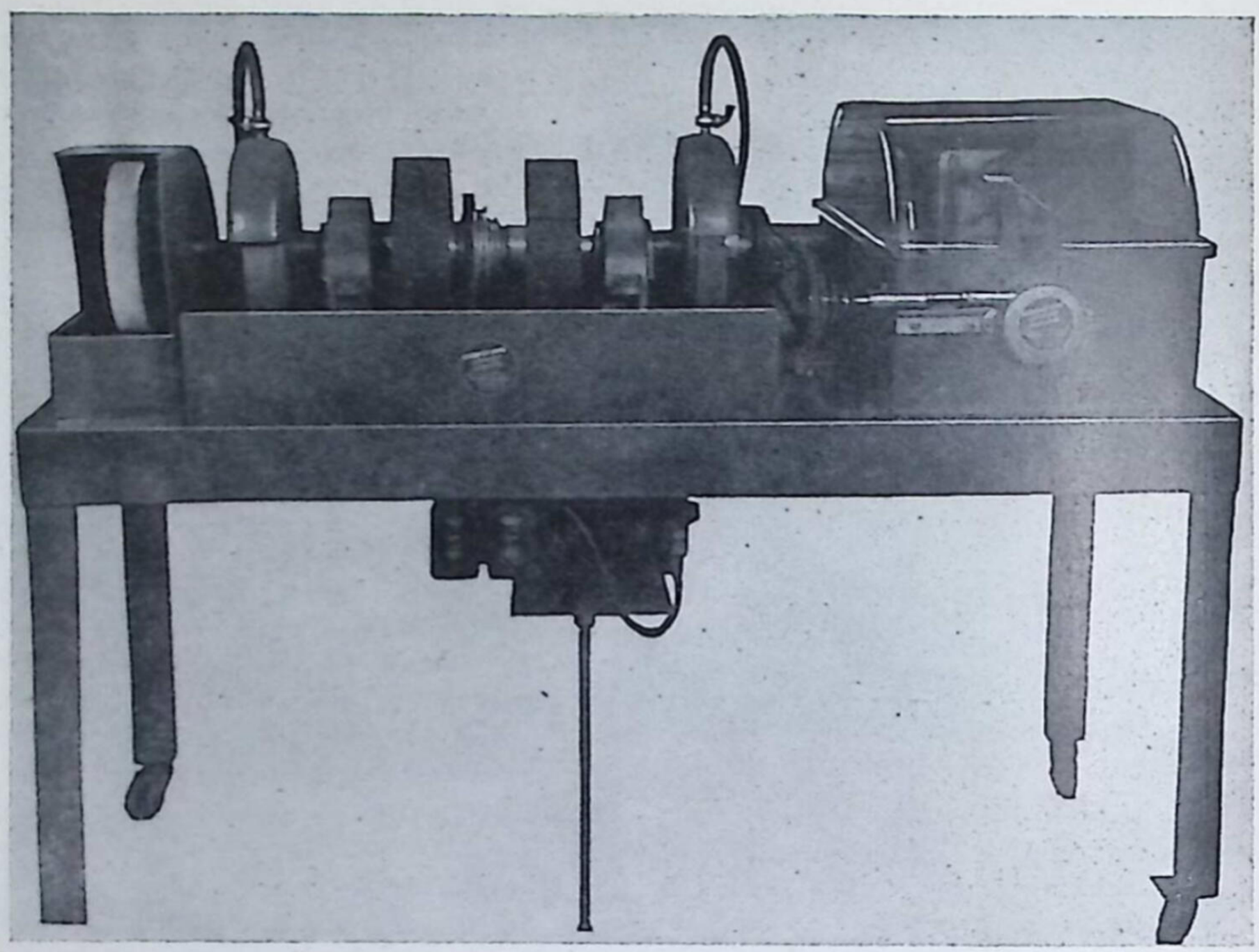
★ ★ ★

Purl A. Anderson

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P.O. BOX 86 **GREENWICH, CONN.**

The ULTIMATE *in*



MODELS L-2 AND L-3 COMBINATION UNITS

The most revolutionary lapidary equipment ever built! The most sweeping changes for better design since the first gem stone was cut and polished. This is a machine you will be pooud to show to your friends.

Mounted on a portable table, made of 3/16" welded steel, table is 64" long and 30" wide. Arbor has self-aligning pillow block ball bearings and requires grease only once a year. Model L Combination units are very compact and cost less than buying one unit at a time, and having a separate motor for each unit.

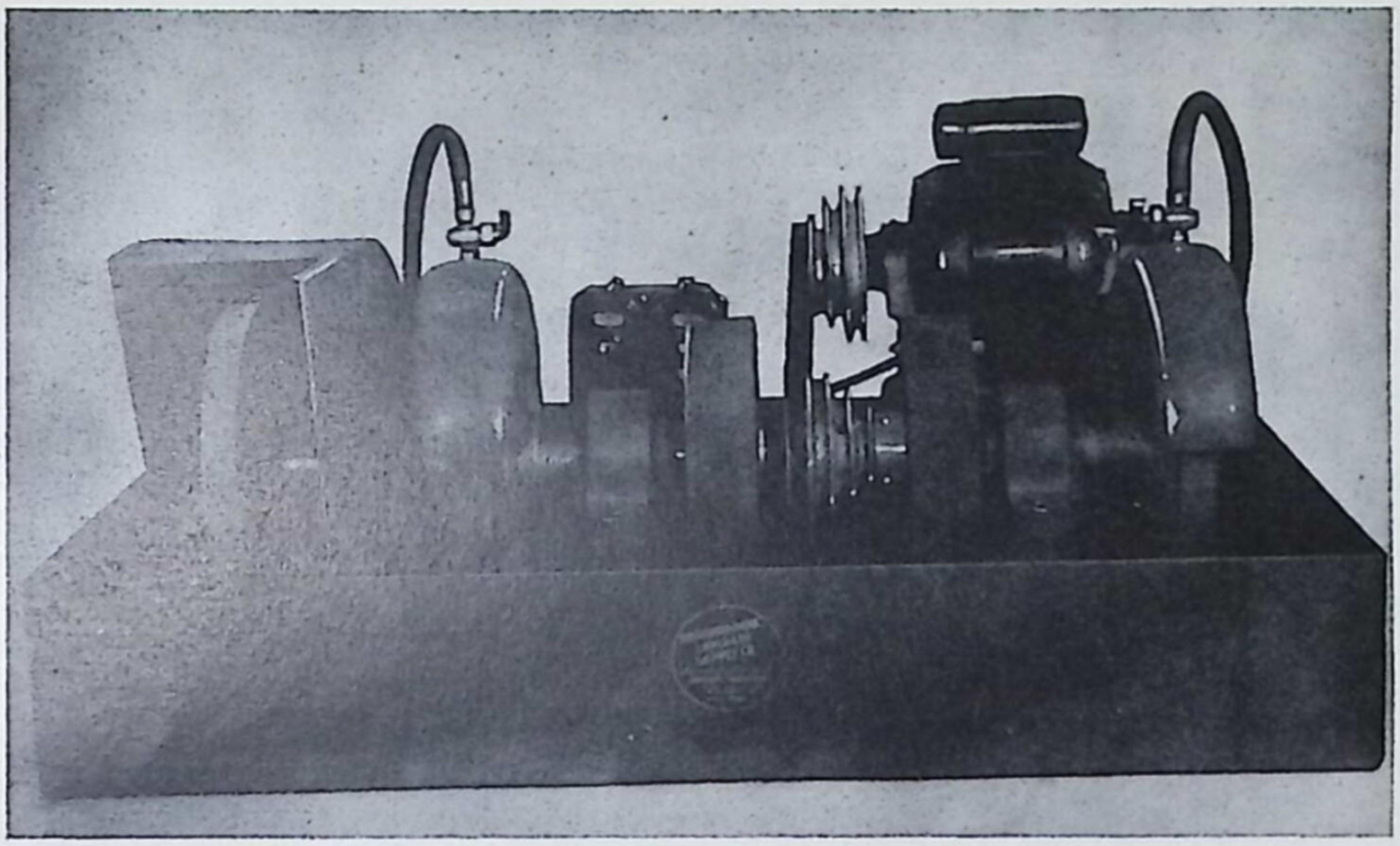
STANDARD EQUIPMENT FOR ALL MODEL L COMBINATION UNITS:

CAST ALUMINUM SPLASH GUARDS WHICH CAN BE MOVED BACK EASILY BY LOOSENING TWO THUMB SCREWS.
WATER FLOW REGULATION VALVES WHICH ARE CONVENIENTLY LOCATED.
TWO 3x10 CAST ALUMINUM DRUM SANDERS, BALANCED ON SHAFT.
ONE 10x1½ 100 GRIT GRINDING WHEEL.
ONE 10x1½ 220 GRIT GRINDING WHEEL.
ONE 10x1½ HARD FELT BUFFER.
ONE WATER PUMP WITH ALL PLUMBING INSTALLED.
ONE THREE-FOURTH H.P. G.E. MOTOR.
TWO PUSH BUTTON SWITCHES FOR MOTOR AND PUMP.
TWO ONE INCH DRAIN PLUGS FOR WATER TANK AND SAW.
HEAVY BALL-BEARING CASTORS ON ALL TABLES.
MODEL L-2 WITH 12" POWER FEED SAW AND METAL HOOD....$365.00
MODEL L-3 WITH POWER FEED SAW AND LUCITE HOOD....$395.00.
THERE IS A $10.00 CRATING CHARGE ON ALL MODEL L UNITS.
IF 14" BLADE IS DESIRED, ADD $2.50 TO COST.
SHIPPING WEIGHT, APPROXIMATELY 600 LBS.

HIGHLAND PARK LAPIDARY SUPPLY CO.

1009 Mission Street

LAPIDARY EQUIPMENT



MODEL V-2 COMBINATION UNIT

The Model V-2 does the work of three arbors. It can be put in operation five minutes after the crate is removed. All that has to be done is fill tank to red line on water pump, plug in cords and machine is ready for use.

Box is made of 1/8" steel, completely welded. This is a bench-mounting model. Box is 36" long and 25" wide, 4" deep. One inch drain plug in back for draining box. Splash guards are cast aluminum. Two petcocks are conveniently located for regulating water flow. Splash guards can be moved back in a matter of seconds by loosening two thumb screws. Arbor has self-aligning pillow block ball bearings and requires grease only once a year. Shaft in arbor is 1".

STANDARD EQUIPMENT FOR MODEL V-2 COMBINATION

ONE 10x1½—100 GRIT GRINDING WHEEL
ONE 10x1½—220 GRIT GRINDING WHEEL
ONE 10x1 HARD FELT BUFFER
ONE 10" DISC SANDER FOR RIGHT SIDE OF ARBOR. THIS SANDER CAN BE MOVED IN A MATTER OF SECONDS WITH WRENCH PROVIDED WITH EACH MACHINE.
ONE WATER PUMP WITH ALL PLUMBING.
TWO PUSH BUTTON SWITCHES FOR MOTOR AND PUMP.
ONE AND ONE-HALF H.P. G.E. MOTOR.
PRICE OF TABLE MODEL $195.00 PLUS $4.00 CRATING CHARGES.
PRICE OF FLOOR MODEL WITH MOTOR UNDER TABLE $215.00 PLUS $4.00 CRATING CHARGES.
SHIPPING WEIGHT, APPROXIMATELY 250 LBS.

All Prices F.O.B. South Pasadena, Calif.

Send for FREE Catalog

Manufacturers of *PRECISION* Lapidary Equipment

PYramid 1-2022 **South Pasadena, Calif.**

a gem, the time depending, as before mentioned, on size and type of the stone and the amount of X-ray or radium rays used. One large crystal of kunzite took three months to color. The different batches of the same variety of stones may differ in the time it takes to color, and may even vary, somewhat in color, tone and intensity.

The question as to what causes the color change, and how, we are not prepared to answer, but we reason that radium emits alpha, beta and gamma rays and that the canal rays of the X-ray tube are identical with the alpha rays of radium, while the cathode rays are identical with the beta rays and the gamma rays of radium are probably the same as those of the X-ray tube, except of shorter wave length (super X-ray). Now the alpha rays can be stopped or filtered out by a sheet of foolscap paper and therefore do not pass through the glass of the X-ray tube.

The beta rays can be filtered out by two millimeters of brass and probably could not penetrate a gemstone of seven hardness. This leaves the gamma ray, which will penetrate twenty-five centimeters of lead and could easily penetrate a gemstone.

It is possible that the gamma ray bombardment of the atoms of the gemstone could modify the lattice arrangement of the crystal structure or the electronic pattern. Again, perhaps, there may be a physiochemical change in the allochromatic stone.

A more complete investigation will undoubtedly answer the questions. To date there has been no way to fix the colors and most of the gemstones fade rapidly on exposure to ultra violet light. Heat will fade some of the treated gemstones while it will not affect others.

It has been said that stones treated in the cyclotron will retain their color permanently. If true, this is a step forward in this interesting subject. Try it some time.

Frankly, We Don't Believe It - - -

But—our private gremlin says that some of you cutters are mineral collectors as well. So, in case he's right and we're wrong, we'll shell out the money for this advertisement and hope for the best.

There is selenite and *selenite*, but have you ever seen *Selenite Roses?* These amazing clusters look as if they come petrified from the limb. They range in price from 25c to $25.00. In the popular sizes, a 1x2″ is 50c-75c, 2x2″ is $1.00-$1.50, 2x3″ is $2.00-$2.50. Large choice specimens are priced at $3.50, $5.00, $7.50 and up.

If all that leaves you cold, here's a bargain that we're passing on to you to get even with our gremlin. Imperfectly dyed, standard sizes, agate blanks at One Dollar per Dozen. Most of these are partially polished and will take very little work to fashion into beautiful rings, earrings, etc.

If you haven't already done so, send for our Mineral and Gem Catalog.

MINERALS UNLIMITED

Scott J. Williams 1724 UNIVERSITY AVENUE David B. Grigsby

BERKELEY 3, CALIFORNIA

"selections personal as your own"

Make Beautiful Xmas Gifts With

CONLEY'S JEWELRY MOUNTINGS

IN LIFETIME GOLD FILLED (1/20 10K)

YOUR CHOICEST GEMS DESERVE THE BEST

Rich, High-Quality Jewelry. Designed and constructed in keeping with the finest traditions of jewelry craftsmanship. Etched and engraved heavy frame with full bezel stone seat. Trimmed with double leaf and flower applique in oxidized red and green gold. Beauty and wearing qualities of karat gold—priced within reach of everyone.

PENDANTS **TIE CHAIN**



#747X 18/13mm oval
$5.40 Tax Included

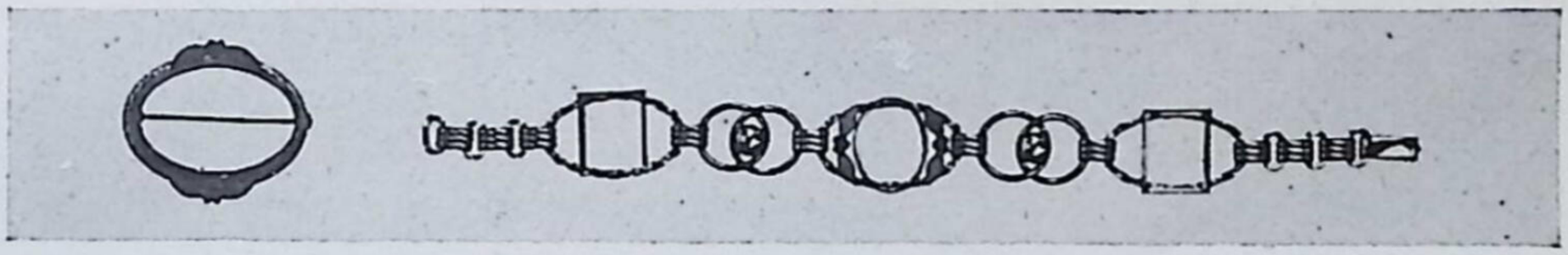
#925X 25/22mm
$5.40 Tax Included

BROOCH

#1011X 16/12mm
$3.36 Tax Included

#819X 18/12mm oval
$3.42 Tax Included

BRACELET



#935X 30/24mm oval
$4.50 Tax Included

RINGS

#849X 2-16/12mm cushions and 1-18/13mm oval
$6.30 Tax Included

EARRINGS



#PS1X
18/13mm oval
Ladies Sterling Silver
$2.10 Tax Included

#16240X
12/12mm cushion
Men's Heavy Cast 10K Gold
$1.40 Tax Incl.

#933X
13/13mm round
Pierced or screw
$4.50 pair Tax Incl.

#934X
16/9mm oval
$4.50 pair Tax Incl.

#P930X
12/12mm
Pierced or screw
$4.50 pair Tax Incl.

#P931X
13/12mm
Pierced or screw
$4.50 pair Tax Incl.

Many other shapes and patterns. Catalog available. Beautiful satin-lined gift boxes for all items —25c. Order now while stocks are still available. Send check or cash—postage prepaid—money-back guarantee.

Look for the name Conley Co. stamped on every piece. This is your protection and guarantee of quality and conforms to government requirements for precious metals. 1/20 10K means 1/20th of entire weight is 10K gold.

At Your Local Dealer or Write

THE CONLEY CO. *Manufacturing Jewelers*

W. 715 Riverside Avenue Spokane, Wash.

Dealerships available to established dealers and manufacturers

◆ Ricolite

By L. M. Shipley

Gem Village
Bayfield, Colorado

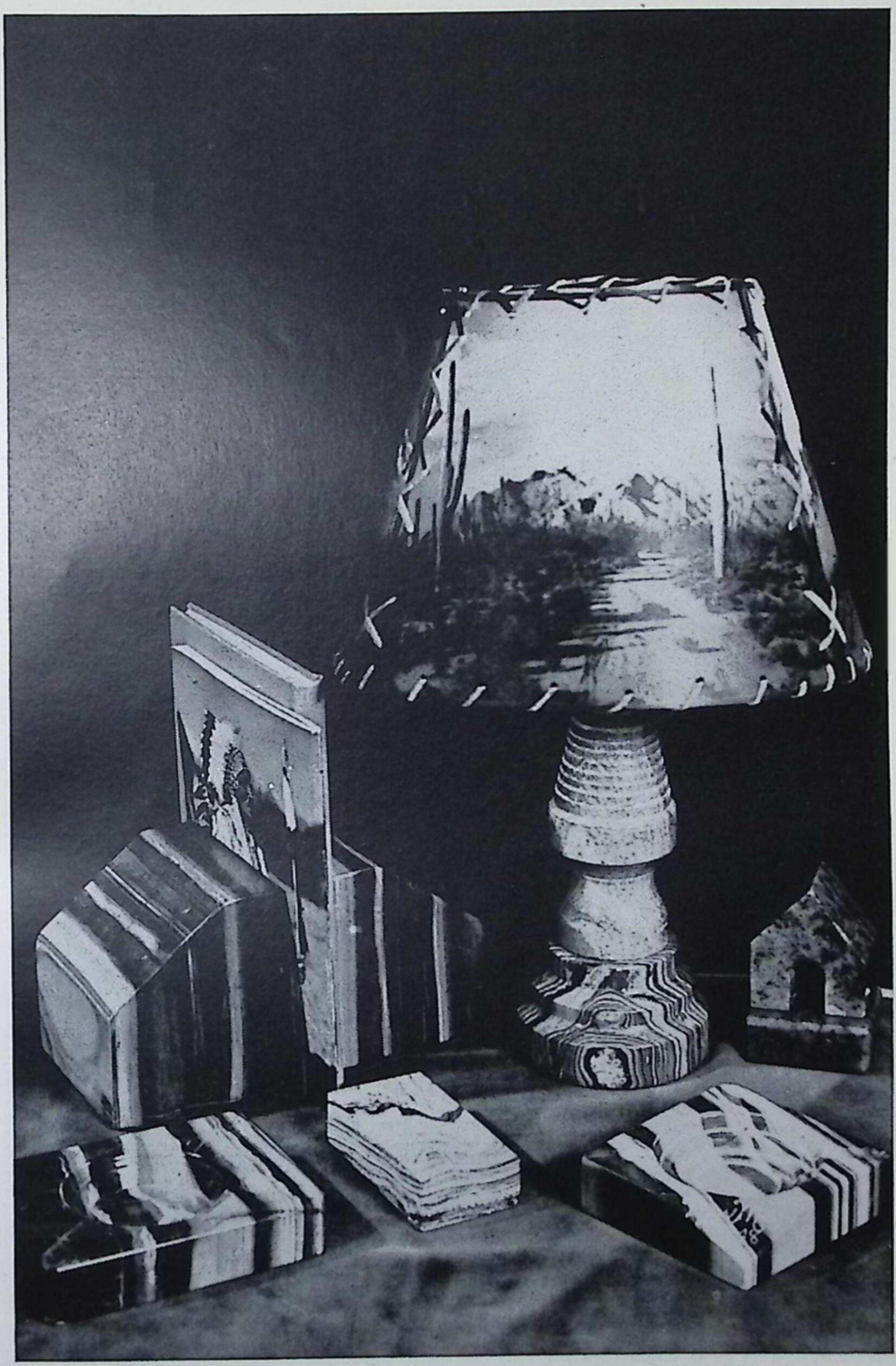
Lapidaries through the ages have sought a material having diversable properties to the extent that it would run the scale for *all* lapidary objects, one that would have a great variety of colors to enhance its beauty and add a greater pleasure to our creative instincts. Ricolite appears to be the answer to the lapidary's prayer. It seems to have been made solely for the use of man. You can make anything that your brain is capable of conceiving, from the finest of carved pieces to art objects. You can make lamp bases, book-ends, boudoir sets, ash trays, desk sets, spheres and all types of ornamental articles. For jewelry you can make rings, bracelets, necklaces, brooches, ear rings, concho-belts, reliquaries, shoe ornaments, negligee clips and decorated comb sets. For the home you can make fire-place and bath-room decorations, wall or flower vases, carved plaques and table sets, bud vases, napkin rings, finger bowls and handles for various silver pieces. These are all yours and many more.

Ricolite is classified in books on mineralogy as a member of the serpentine family. It is found in a small area of Grant County, New Mexico. It was apparently formed by an igneous intrusion into a bed of high magnesium marbleite previously upended by a violent upheaval of the local strata for it stands vertically between walls of a harder rock. A basalt intrusion split the marbleite bed and crushed the two splits against the side walls. The intense heat and pressure and the fusion of some parts of the bed apparently caused a rearrangement of the original elements. Portions of the bed nearest the intrusion were completely fused and absorbed some of the new elements from the molten intrusion. These portions of the deposit are comparatively hard and translucent and have curious, mottled inclusions in green backgrounds shading from beautiful pale yellow greens through olive, moss, grass to velvety black greens, often with white bands or lines. Portions of the bed further from the intrusion have kept somewhat the texture of the original marbleite. These portions escaped fusion but, due to intense heat and pressure, have a banded appearance. The bands, alternating light and dark, are in straight lines paralleling the igneous intrusion.

Nature gave Ricolite a terrific mauling. Heat and tremendous pressure made it a beautiful gem material but the deposit necessarily contains lines of weakness and what were once fissures have become small, sealed veins. In cutting, evident lines of weakness should be cut out in order to avoid later breakage.

In lapidary work Ricolite is ideal. It saws easily and smoothly, grinds, drills and rôuts without chipping, takes a good polish and resists scratching. It has varied and unique colorations of great beauty. It is extremely tough and thin sections resist breakage. It can be pierced easily with steel drills and routed to form lapidary products impossible with many gem rocks.

Ricolite is not hard to polish. It should never be sawed under oil. Water will work equally well as a coolant and diamond blades seem to suffer no ill effects from water when used on soft materials. You may use your own grinding method. Sanding may be wet or dry, usually finishing with a 500 grit wet or dry cloth. Use a soft cloth buff with a polishing compound which has a rather heavy pull. For the benefit of those who have not developed their own lapidary technique, I offer a more detailed method for the working of Ricolite.



RICOLITE Art Objects—Book-ends, Lamp Base, Incense Burner, Ash Tray, Paper Weight, Engraved Ash Tray.

The following method is used by the Pinos Altos Craft Shop. Their products are held by hand and never put on a dop-stick.

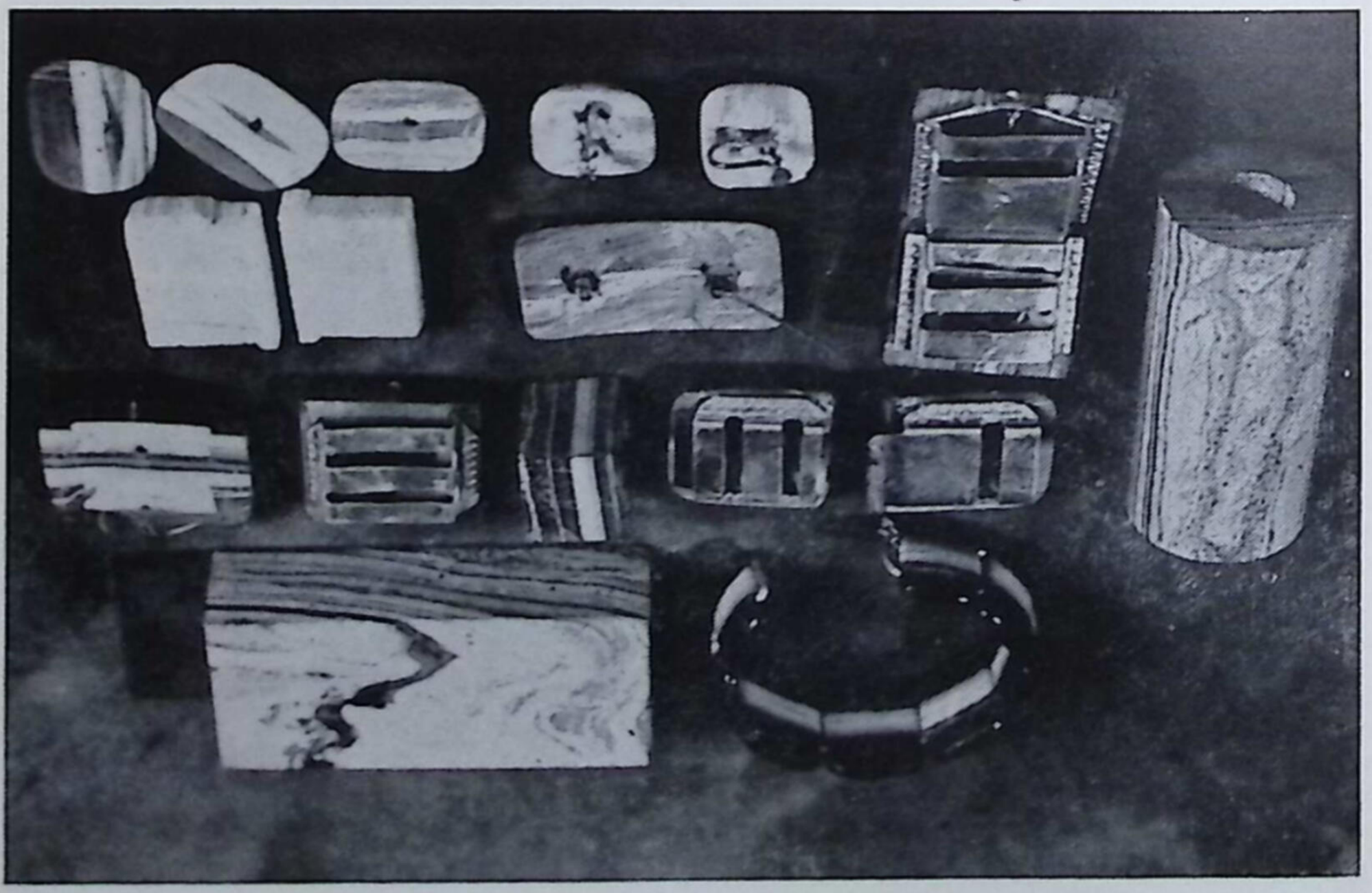
DIAMOND SAWING:—Speed of saw should not exceed 5000 lineal feet per minute. Best results are obtained using a water bath. A chuck vise is not needed to hold pieces up to four inch cubes as the material saws fast. Hold firmly by hand on a saw table, slicing it quick and easy. It is advisable to plug the work light into the same outlet that supplies electricity to the motor, for then if the motor labors the light dims. Motor labor may be due to inadequate wash water, excessive cutting rate or askew in the cutting direction. Correct this by backing the work slightly without jerking, ease the motor and resume cutting. If the saw blade must be withdrawn before completing a cut, do so with a slow, steady motion so as not to risk dingeing the saw.

ROUGH GRINDING:—Use a No. 40 to No. 60 grain wheel, medium hard, at not over 3000 lineal feet per minute. If so desired, rough grinding may be eliminated by taking the work direct from the saw to finish grinding.

FINISH GRINDING:—Use No. 80 to No. 120 grain wheel, medium hard, at maximum speed of 3000 lineal feet per minute. Much time is saved in later sanding if the work leaves the finish grinding well shaped, free from irregularities and with larger scratches removed. Only occasional wheel dressing is required as Ricolite is free of hard inclusions.

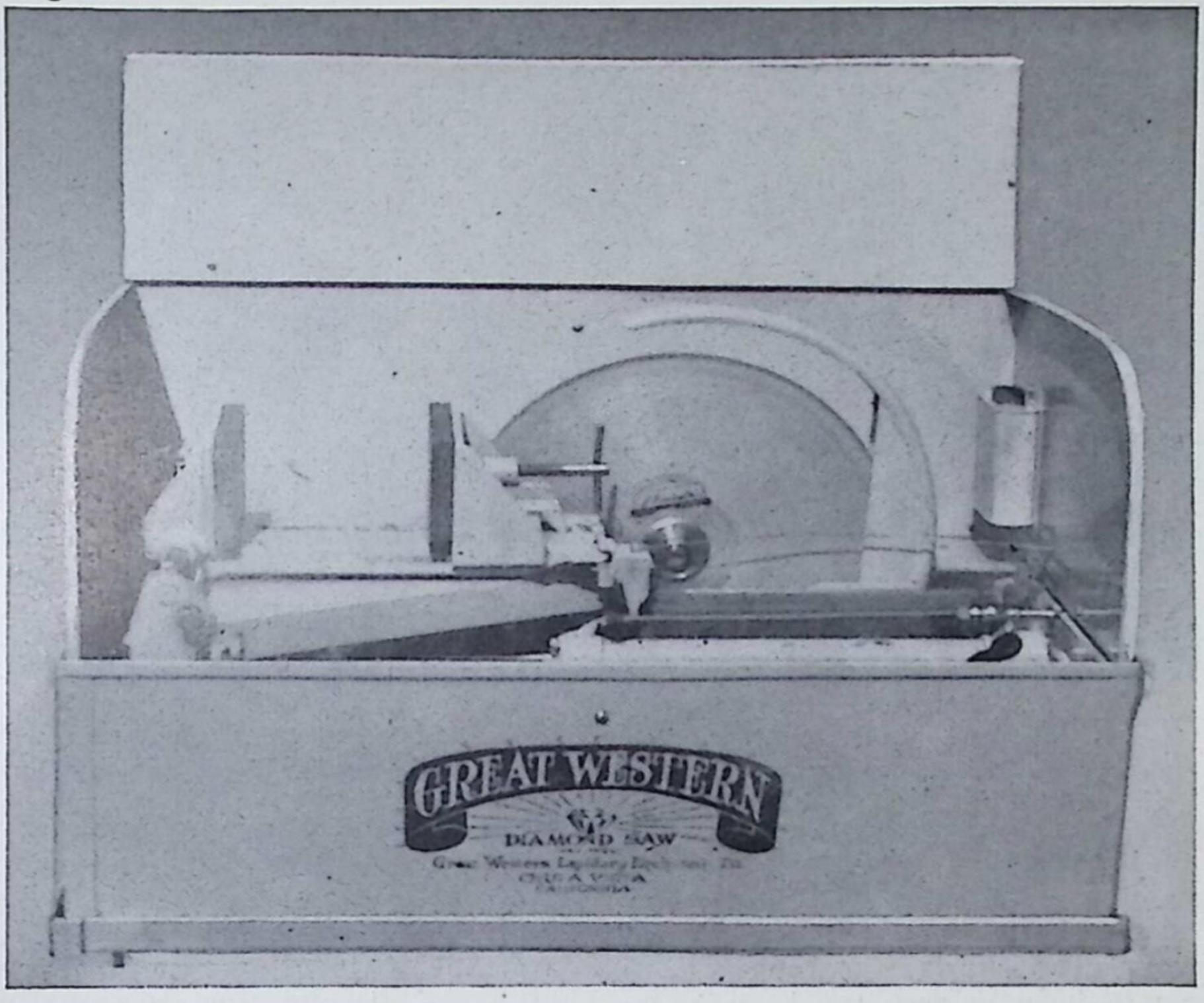
COARSE:—Use No. 120 to No. 180 carborundum cloth at a speed not over 3000 lineal feet per minute. Avoid holding Ricolite more than momentarily at any one surface contact. Remove all wheel marks and irregularities by using a "wiping" motion.

FINE SANDING:—Use a thoroughly worn No. 350 (or finer) carborundum cloth. A finish sanding cloth used for Ricolite will last indefinitely unless it becomes torn. To wear in a new cloth run it against a wood block until it is smooth to the touch. For sanding small objects (buttons, ear rings, brooches, stones for ring sets etc.) it is satisfactory to use two 1½″ wide strips of carborundum cloth, one coarse and the other fine, on a single 3″ face sanding wheel. If the wheel has a mounting for



RICOLITE Objects—Top row—Bracelet with silver wire loops. A paper weight or a block from which button blanks may be sawed. Long object is a *Ricolite* tube showing how the material may be drilled. Second row—A belt buckle (unfastened). A square of *Ricolite* from which ear ring blanks may be sawed. Belt slide with metal slide glued in routed portion. Belt slide showing routed hollows and lug for metal fittings. Belt buckle showing mortise effect. Third row—Brooch, showing metal pin and catch glued to lug. Unworked button blanks. Botton row—Ear rings (showing both angles). Three buttons in various positions.

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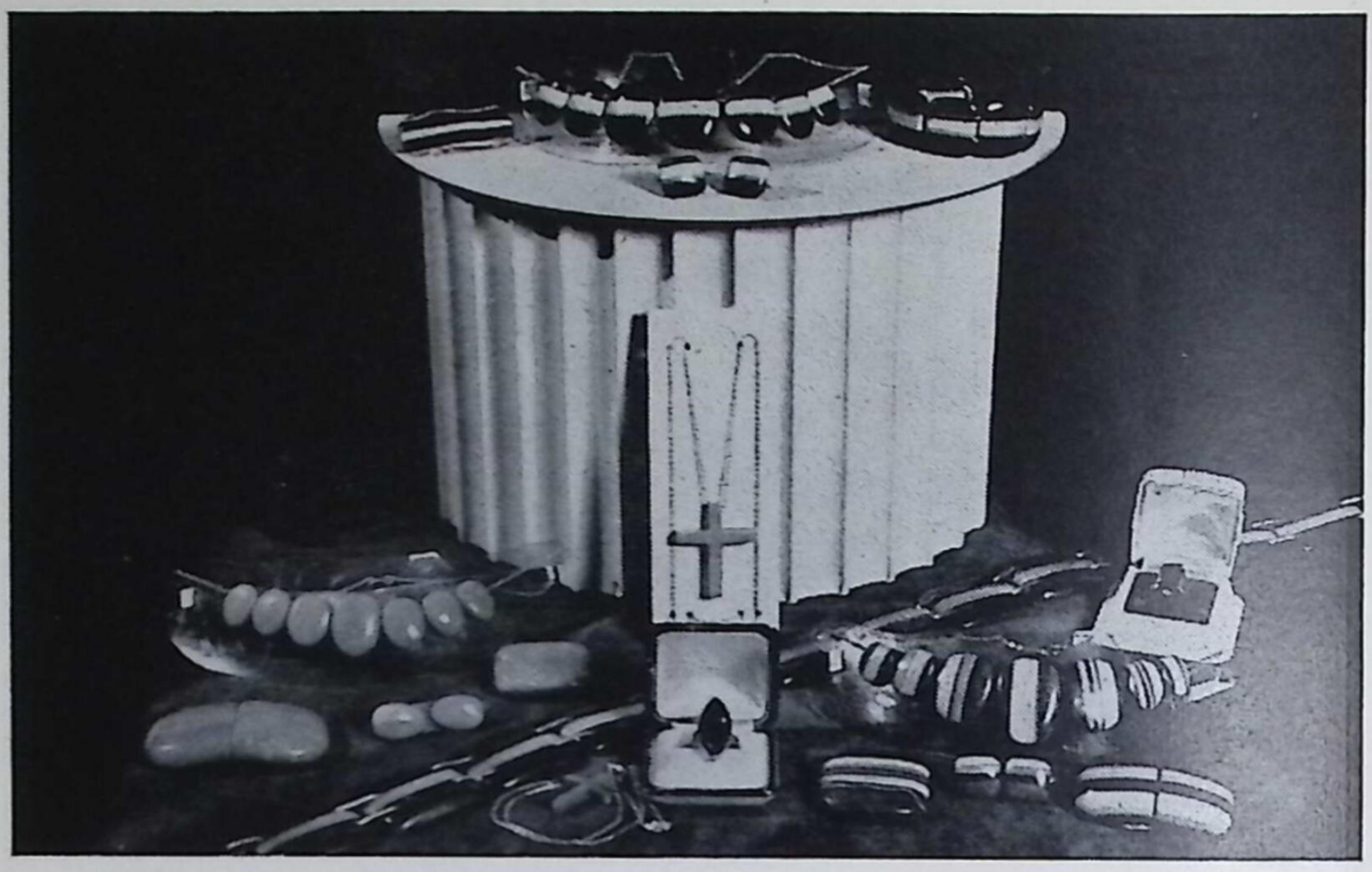
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an end sander the sanding medium can be replaced by a soft leather buff. Speed should not exceed 3000 lineal feet per minute. Higher speed does not improve results but does make the work harder to hold. From fine sanding on through buffing, Ricolite should be processed as hot as possible. A good fine sanding job is essential to satisfactory polishing.

BUFFING:—A hard felt buff gives the best results with Ricolite and a firm but not heavy touch should be used. Speed should not exceed 3000 lineal feet per minute. Higher speed merely makes the work harder to hold and increases the danger of burning the rock surface. For each 2000 buffings wet the wheel periphery with a strong water glass solution and, while wet, dust on No. 250 lapping grit. Wet an inch and a half (more or less) of one side of the buff wheel with water glass solution and dust on No. 1200 grit. On the other side, while running the wheel, occasionally wipe a light smear of jewelers' rouge. In buffing Ricolite, after a good sanding job, the surface to be polished should be buffed first on the periphery of the buff wheel being careful not to keep any portion more than momentarily in contact with the buff. Follow the coarse buff by a wiping contact on the No. 1200 side of the wheel. Ricolite burns easily. Avoid burning by keeping the object moving; never hold it in one position. If a spot burns, the discoloration can usually be removed by taking the work back through coarse sanding. To get a perfect polish Ricolite should be buffed and rouged as hot as it can be held in the fingers. This is poor practice with other materials but it is essential for best results with Ricolite. While the surface being polished is still hot from the fine buff finish it on the rouged side of the wheel. Here again use a wiping stroke and avoid more than momentary contacts of any single surface portion of the object being polished. Follow the rouge buff with a leather buff to "set" the rouge. The leather buff will not improve the finish but seems to assure permanence.

EXCEPTIONS TO THE ABOVE PROcedure:—Whenever a Ricolite surface has bands of white the latter, if hard contacted with rouge, take a red stain which usually can be removed only by sanding. This is avoidable when the surface consists of broad bands by bringing the non-white bands into contact with the rouge. This cannot be done

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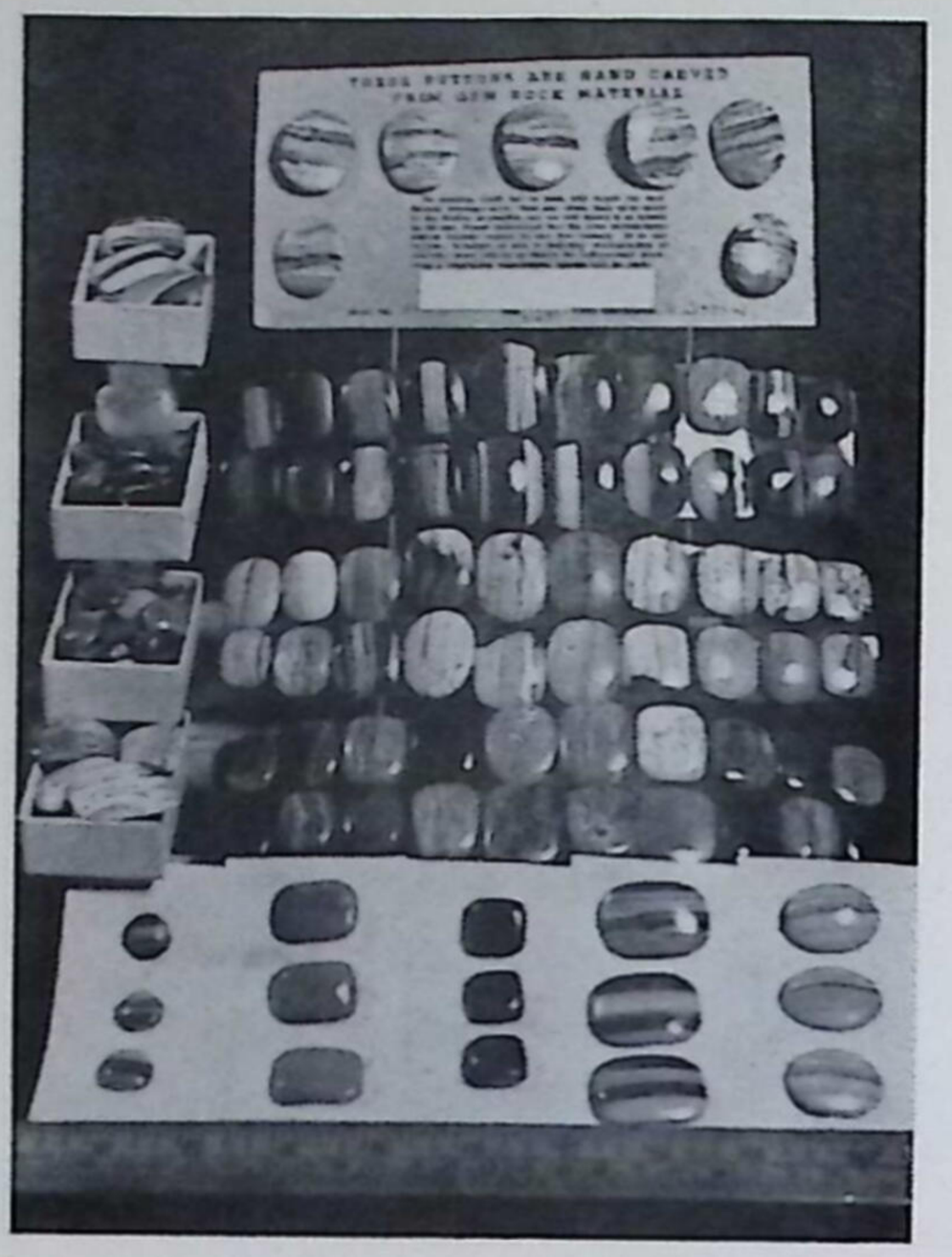
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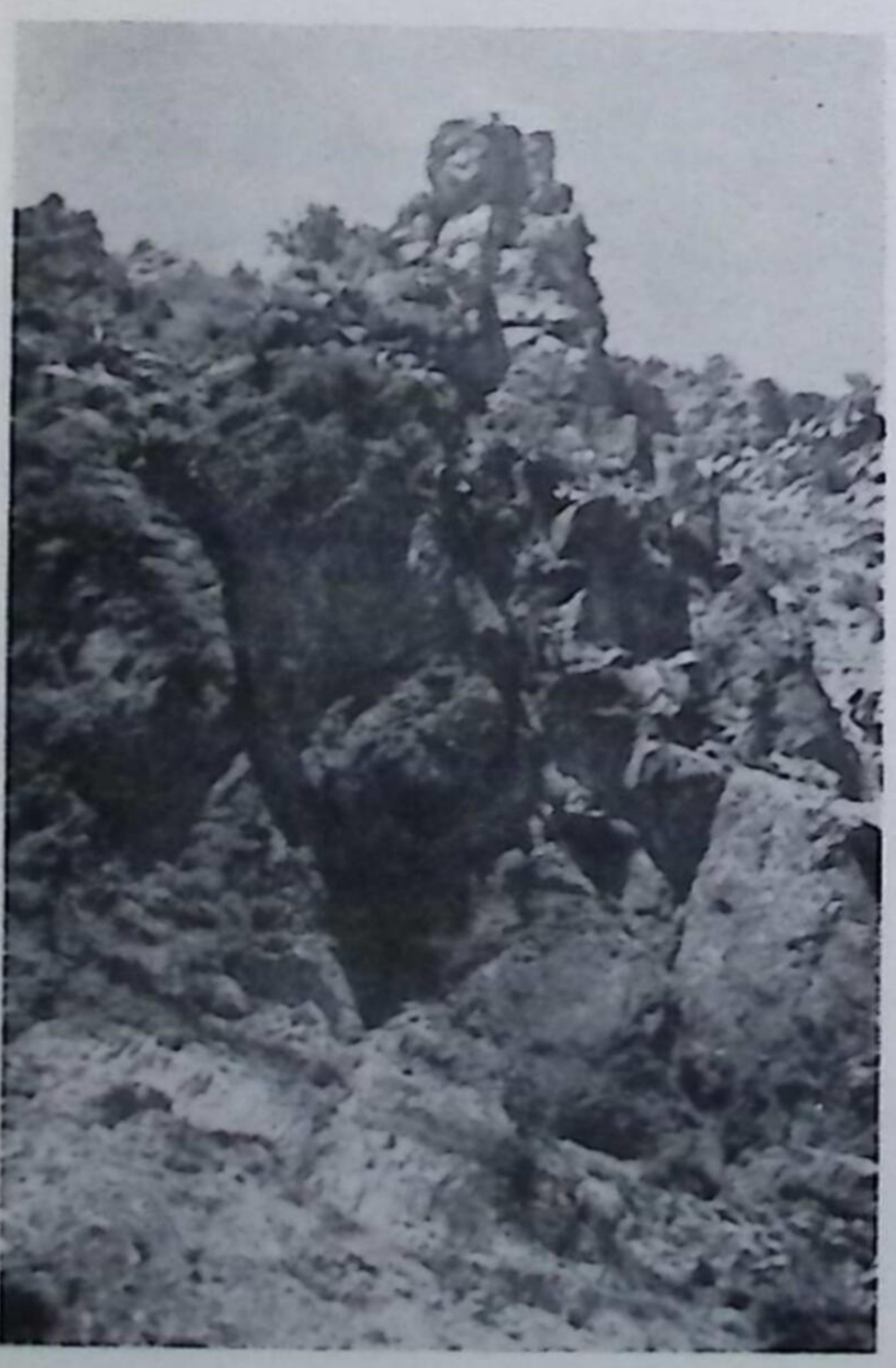
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An assortment of Ricolite buttons in various sizes and colors.

when the surface has a number of white bands. In that case the following procedure gives good results. Make a strong fresh solution of oxalic acid. This can be done most easily by putting a few oxalic acid crystals into a shallow metal jar top and adding water. Heat over a candle flame, holding the jar top with one hand and stirring with the other by using a match stick. The solution is strong if, as it cools, needle-like crystals form. Dip the surface to be polished and let it become dry or almost dry (better). Then buff against the No. 1200 side of the wheel holding the work still until it is hot. No leather buffing is necessary. Oxalic acid oxidizes and should be made fresh just before using.

DRILLING, ROUTING ETC.:— In drilling Ricolite, using 1/16″ to ¼″ drills or using a dry cutting grinder, speeds should not exceed 3600 r.p.m. Larger than ¼″ drills should be held to a slow speed. Small milling cutters in any rock are quickly ruined at speeds greater than 3600 r.p.m. Ricolite can be worked with ordinary lathe tools at slow speeds. Use a fine-toothed hack saw for "dry" sawing.



Ricolite vein at base of basalt intrusion.

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◆ A Note on Stone Carving

By DONAL HORD
3838 Kendall Street, San Diego 9, California

A most charming acquaintance of mine came back from Yellowstone Park some time ago, quite worried. She had listened to a National Park Ranger lecture before the obsidian flow. "I have a friend," she told him after the talk, "who carved a life size head in obsidian." "He looked at me," she reported unhappily, "as if I were a dull witted child, and said, 'No, lady. You are mistaken. No one has ever carved obsidian!' " Then she asked me, "It *was* obsidian you carved, wasn't it? I was sure of it, but the ranger was so positive I felt like crawling."

I assured her that the ranger was so, so wrong; that the Egyptians had ground out obsidian portraits, that the early Mexican lapidaries had abraded masks and mirrors and labrets out of the dark glass. Then another friend appeared. He had, I think, been to Mt. Lassen and his tale was almost as forlorn as the first one. The ranger had scoffed at him. "But it *was* obsidian you carved, wasn't it?" he asked.

* * *

The first piece of obsidian I acquired came from a place you may not find on any map of Mexico—Aguatepec, some miles from the pyramids of Teotihuacan. The obsidian outcroppings at Aguatepec are on a slope among tall twisted yuccas and mighty nopales, their trunks unbelievably massive with age. In their shadows, the very ant hills sparkled with flakes where craftsmen had once wrought tools for the markets of ancient Anahuac. I was impressed by that spot, the debris of industry and the painted shards. The obsidian I selected there was black, with a flow of silver. I took it back to my room, in the house on the parapet by the Pyramid of the Sun.

My ambition to work obsidian had been fired by a goblet in the Museo Nacional, a famous piece, velvet black, impeccably polished. A monkey clung to the cup and the suave sweep of its tail formed the handle. There is a story about that cup, maybe you have heard it: A native of Tlascalla, they say, found it after a heavy rain, close to a trail he was following to market, and he traded that exquisite Olmec work for a sack of maize for tortillas.

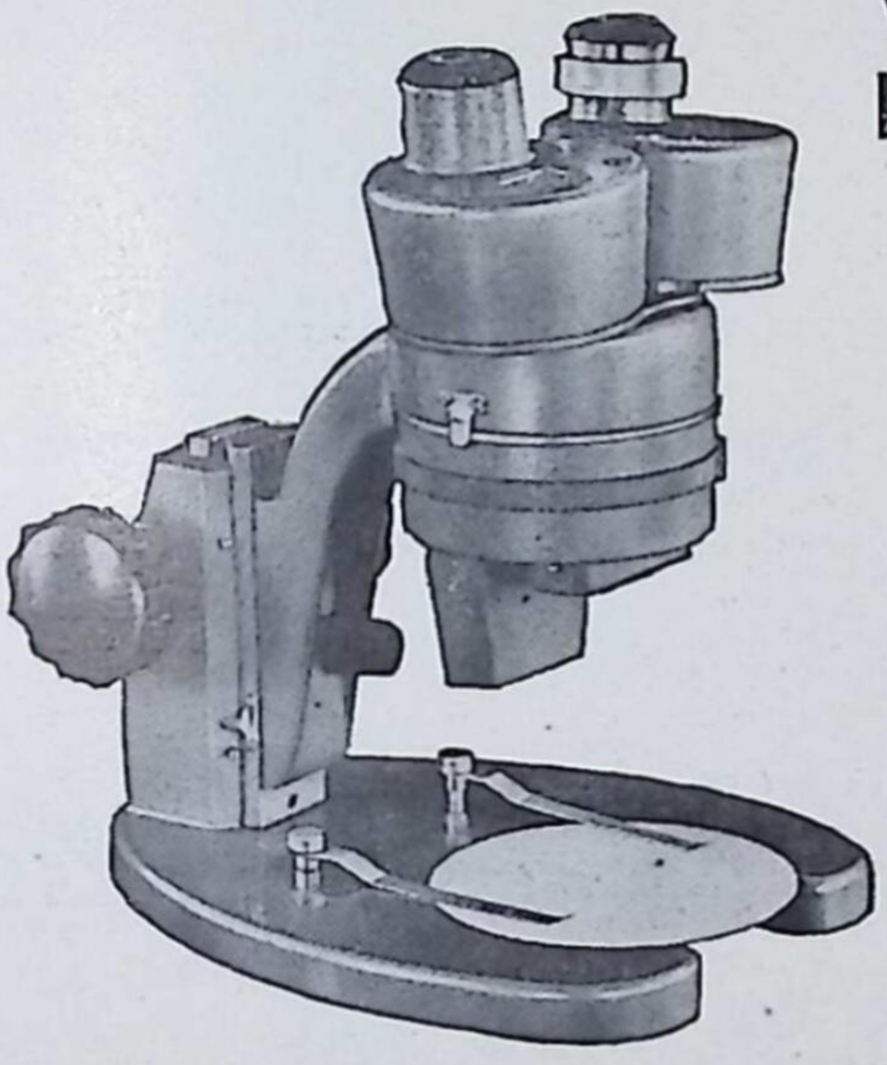
Now, I too had acquired obsidian. No one knew how I should proceed to shape it. Everyone shrugged—even the man we called the 'chiflado', who made little obsidian masks at the escuela and sold them to tourists. So I took the camion to Mexico after files—steel files—eighty pesos worth!

There is a particular pepper tree that I can point out in certain photographs of the Sun pyramid, where I went every day and worked with those files—and laugh if you must at the greenhorn—I eventually finished a carving. It took two months. It was a masked kneeling figure that belongs at present, I believe, to Mrs. Griffing Bancroft at La Jolla, Calif.

Several years elapsed before I tried that black material again. I hadn't, you see, been cured when I heard of the obsidian at Coso, up off Owens Valley in California. The weather that early spring was warm in San Diego—and when local weather is part of a habit of life, one doesn't assume weather to be different elsewhere. We drove toward Coso, and the night was old before we pulled off the road into the sage, and shivered until a dawn revealed the Sierras behind and above us, clotted with snow. Coso was a disappointment—obsidian occurs there in pumice in quantities but not of sculpture size. So we went on to Bishop, then to Casa Diablo. That is where the obsidian for La Cubana (see cover) came from (one of three pieces) in 1930.

While I carved wood, I occasionally experimented with abrasives on one piece of obsidian. Surely, I thought, something that revolves should cut this stuff. But nothing did. I bought an electric drill and a flexible shaft and the wrong kind of abrasive tips. The tips and wheels glazed and became hot, but they didn't cut the stone. I swore and put the whole thing aside when another stone entered my consciousness as nonchalantly as had the obsidian. It appeared as an egg—a black and highly polished egg. "This," I said, "is beautiful. I must shape a figure in

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this. What is it?" And the answer was: "Black diorite!"

I learned, by blister, bruise and dark despair, that diorite is a wonderful medium to instill discipline. And looking backward in time (five diorite scultpures removed from the casual egg) I suggest that anyone intent on shaping obsidian or jade should approach these recalcitrant materials by practicing in limestone first, then marble, then diorite and go on from there to obsidian to jade, the toughest material I know.

Ten years after I first sat down beneath the pepper tree in Mexico, with files, obsidian and some doubts, I began La Cubana, equipped with the proper abrasive wheels, considerable confidence and the desire to do a good job. I had also gained, through many years of practice, what I consider the most important experience of all in handling fine materials, some knowledge of form and design. Without these last, I think it unfair to approach the very lovely stones available to the sculptor and the lapidary. As a Scotch teacher of fine craft once cautioned me in one of my impetuous moments, "If you handle your material as if 'twere precious you'll get a precious result." If anyone is going to turn his or her talents to the carving of fine stones, they should take time out to acquire at least a rudimentary knowledge of form and design. The technique of removing material, from my own experience, is only incidental though often difficult, and gets one back to the old saw: "You just take off what stone you don't want, and what's left is your statue." But what if the experimenter is only *guessing* about his wants?

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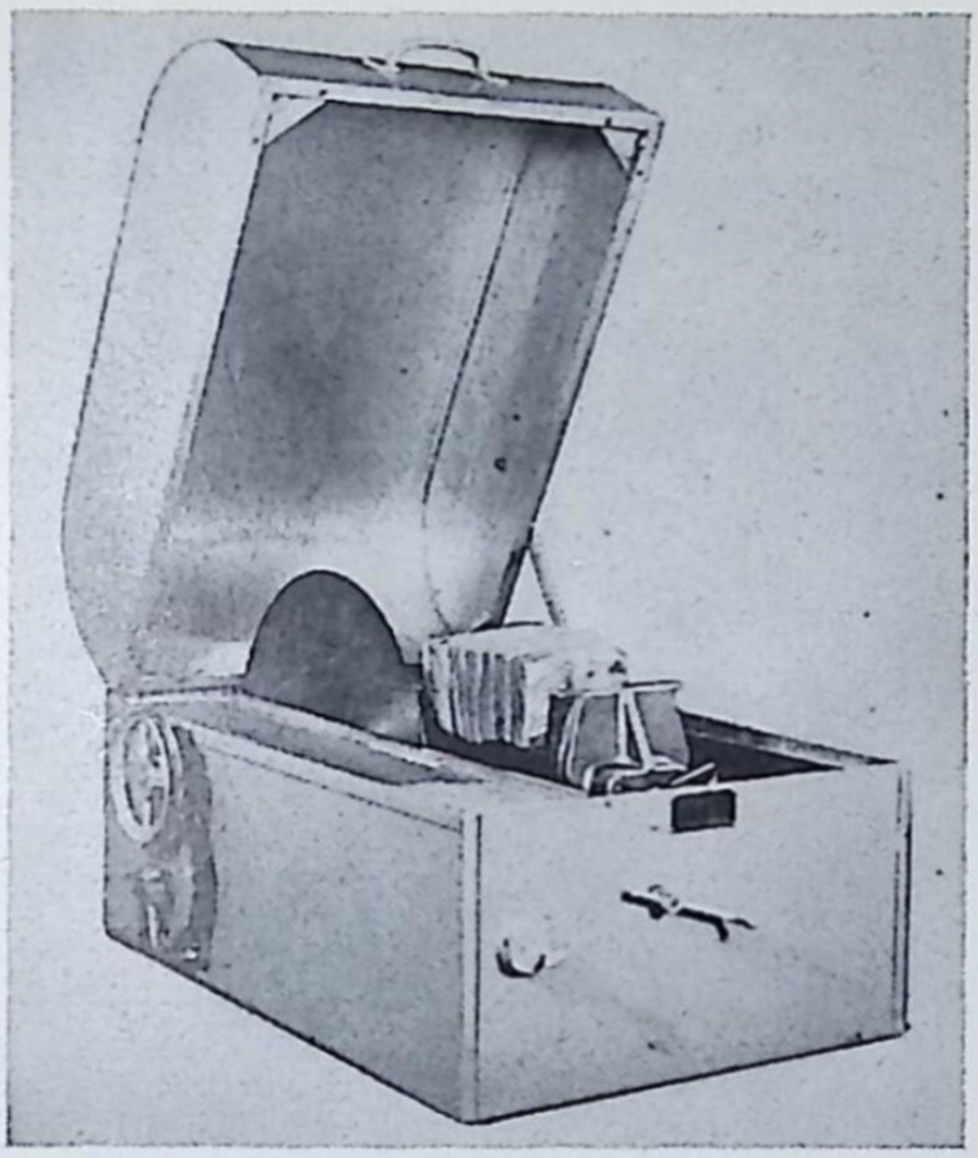
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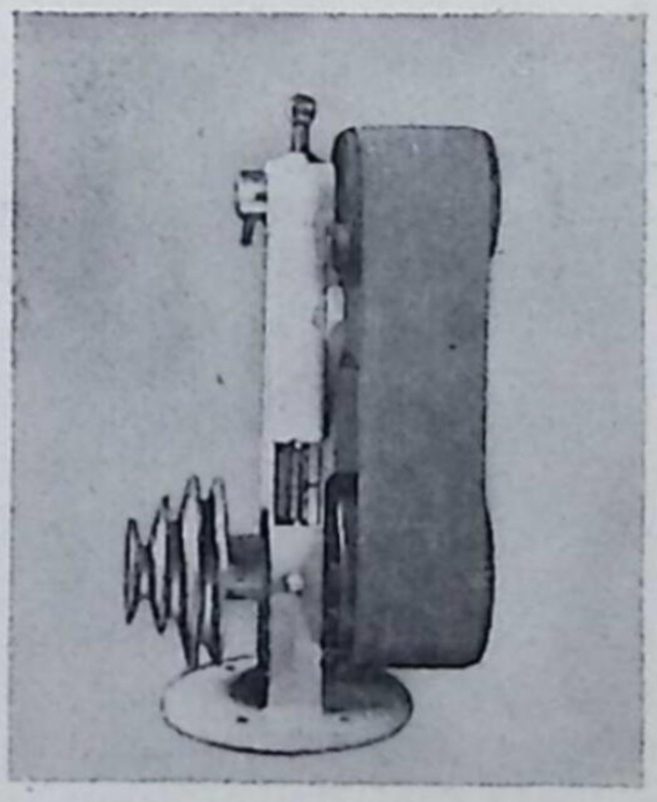
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◆ Brazilianite

By KILIAN E. BENSUSAN, R.S.M. (London)
8615 Columbus Ave., Sepulveda, California
Member San Fernando Valley Mineral & Gem Society

Few of the mineral discoveries of more recent times have offered much to the collector, either as distinctly new species, as conspicuous crystal forms, or as gems. That is why Brazilianite, which scores in all three respects, is the most exciting addition to mineralogy in many years. During the course of the mineralogical investigations of the past century, the most obvious and showy species were the first to be noted and classified, leaving those with less eye-appeal for posterity to study. New additions to this science, if they are not merely special varieties of already known minerals, often require the aid of a lens to be appreciated.

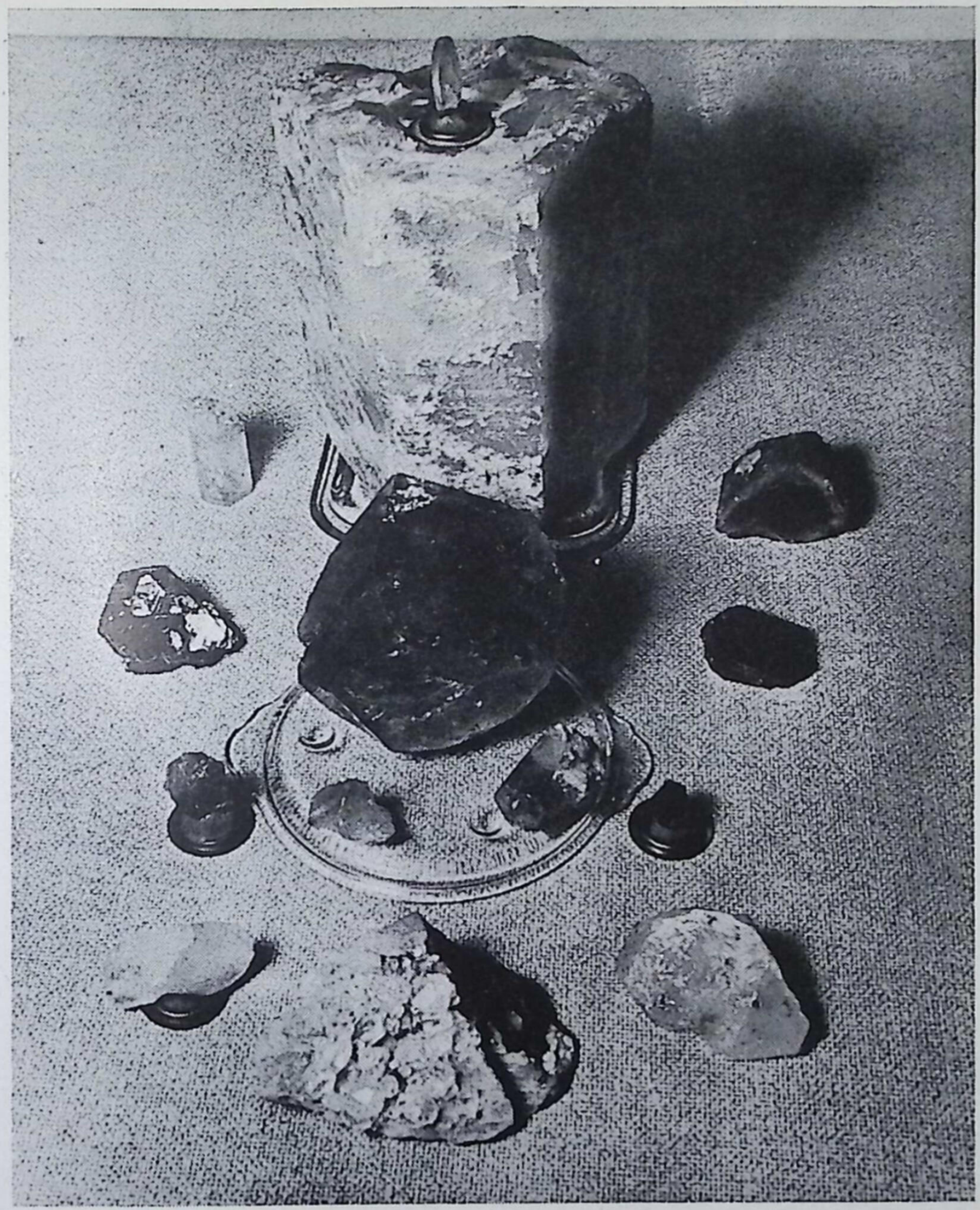
This is not the case with Brazilianite. Identification as a distinctly *new* mineral was announced in 1944 by Dr. Frederick H. Pough, Curator of Geology and Mineralogy at the American Museum of Natural History, New York. While doing mineralogical work in Brazil in 1943 his curiosity had been aroused by specimens of this mineral, some of which he brought to the United States for detailed examination. His collaborators in these studies were Dr. Edward P. Henderson, analyst at the United States National Museum, Washington, D. C., and W. T. Shaller, M. Fleischer, K. J. Murata, and J. M. Axelrod, of the U.S. Geological Survey.

The mineral (which they decided should be named in honor of the country where it was first discovered) occurs in sizeable and handsome yellow-green crystals, ranging from about half an inch square to several inches, and weighing in excess of a thousand grams on occasion. The specific gravity is 2.94. The smaller, thinner crystals and cleavages of this new monoclinic species appear yellow, while the larger ones take on a darker greenish-yellow hue in proportion to their size and thickness. Brazilianite thus resembles chrysoberyl in color and in glassy luster, but not in crystallization. While the latter is among the hardest minerals the former has a hardness of only 5½. Brazilianite is not practical as a jewel to be worn but it makes a beautiful showcase gem.

I am certain that on several occasions during my many years in Brazil that I came across this new mineral prior to its classification. My Brazilian friends in the State of Minas Geraes, who had specimens of this material, were aware that it differed in hardness and crystallization from chrysoberyl, although the two bear a resemblance and are both found in the pegmatite dikes. In Rio de Janeiro, as recently as 1942, I was shown some pieces of this substance from Minas Geraes by one of Brazil's few lady mineralogists. She stated very definitely that it was "a new form of chrysoberyl."

We must bear in mind that in Brazil there are not the thousands of amateur collectors and mineralogists that we have here in the United States, ever ready to follow up such possibilties from sheer interest. The Brazilian mineralogists who noted that this mineral differs from chrysoberyl had neither the same means nor incentive to pursue the matter further. They could envisage no practical use for it. They lacked apparatus for examining it anywhere outside of the Department of Mines. It was there that the preliminary studies were undertaken to determine the nature of the gem. Credit for this work goes to Dr. Evaristo Penna Scorza, of the Division of Geology and Mineralogy, and curator of the mineral collection of the Department of Mines in Rio de Janeiro.

According to my information from Brazil, Dr. Scorza, who had received some of this mineral from a mining engineer, began making a special examination of it sometime during 1943. Spectrographic determination caused him to surmise that the material might be fremontite, but unfortunately he had no samples of this sodium aluminum phosphate mineral to make comparisons. Dr. Scorza's tentative conclusion



Brazilianite crystal (center) of 945 grams, free of matrix, thought to be the third largest known, with two smaller crystals of the same mineral beside it (on the round glass dish). For comparison, mounted on stands at each side are crystals of chrysoberyl. At the rear, center, are a beryl crystal of 22½ pounds, with a "tear drop" beryl displayed on top. Another beryl crystal, containing a water bubble, is shown at the left. At right rear is a large "water-melon" tourmaline; pink center with green casing. In front of it is a "rose" of micaceous hematite, with another one on the opposite side of the picture. In front, center is a cluster of transparent phenacite crystals on amazonite. A large single crystal of phenacite stands at each side. All of these specimens came from Minas Geraes, Brazil, and are part of the author's collection.

was as close as it was possible to come without making the extensive examinations later conducted in the United States by Dr. Pough and his associates. With the spectrograph the yconfirmed Dr. Scorza's opinion that it was a sodium aluminum phosphate. Their X-ray studies proved that it was different from the other minerals of this kind. Their very detailed examination of the crystallography, using fifteen specimens, established beyond further doubt that they were dealing with a new mineral, a hydrous sodium aluminum phosphate, with the formula: $Na_2O.3Al_2O_3$ $2P_2O_5.4H_2O$.

Brazilianite differs from the monoclinic fremontite in lacking lithia and fluorine. Another mineral akin to Brazilianite in composition is amblygonite. The formulae of two other triclinics, turquoise and chalcosiderite, are also similar. Brazilianite has a brittle, conchoidal fracture, perfect cleavage, and white streak.

In an article, "Brazilianite, a New Phosphate Mineral", by Drs. Pough and Henderson, appearing in *The American Mineralogist* of September-October 1945 (vol. 30, nos. 9 & 10), a complete description is given, with details of the crystallography. In Rio de Janeiro an independent study of the crystallography of Brazilianite had been made by Dr. Elysiario Tavora Filho, Professor of Mineralogy and Petrography at the University of Brazil, using a remarkable crystal of about 60 mm. in height and 30 and 40 mm. in thickness, which was developed in an exceptional manner. His report appeared in *Mineracao e Metalurgia*, April 1945.

The specimens which Dr. Pough brought to the United States were from two localities, both in Minas Geraes. The more accessible one is in the vicinity of Conselheiro Pena, which is a stop on the railway uniting the eastern part of Minas Geraes with the Atlantic coast at Vitoria. The rail journey from that port to Conselheiro Pena is about 170 miles. The diggings (for they cannot properly be termed a mine) are on property belonging to one of Brazil's rock crystal kings, Rodelvim Andrade, who leases it to another. That person parcels out the rights to those wishing to work it. By law, mines and mineral properties must be owned by Brazilians. The only way foreigners can get the rights to work properties, or even open up likely places, is by arranging the formalities in the name of a Brazilian.

During the few years of their lifetime the shallow workings near Conselheiro Pena (which are now closed) yielded some $250,000 worth of Brazilianite specimens. Some crystals were enormous. The largest crystal of which I have heard belongs to the Department of Mines in Rio de Janeiro. It weighs 1,165 grams, and came from Corrego Frio (Cold Creek) in the Conselheiro Pena district. One which I possess from that locality is 945 grams and entirely free of matrix. The crystal faces are perfectly developed and are very brilliant. Two of the crystals acquired by Dr. Pough weigh 868 grams and 852 grams, the latter having a matrix of muscovite and feldspar. One of 973 grams can be seen in the Canfield Collection at the U. S. National Museum. My own may be viewed at my home.

The occurrence, which is near the Rio Doce, is an altered pegmatite dike about a meter wide, lying between walls of weathered biotite schist. The associated minerals are mica, quartz, feldspar, and tourmaline. Some Brazilianite specimens have small crystals of muscovite mica attached. Others show inclusions of green tourmaline.

Near these workings two other unknown minerals were discovered during the extraction of Brazilianite. They are to be named in honor of the Brazilians who analyzed them. However, it would not be proper for me to divulge anything further about this until after these friends have made their own announcements and had the opportunity of presenting their formal theses before the appropriate scientific bodies in Brazil.

The other locality from which Dr. Pough obtained Brazilianite is about two days' journey from Arassuahy, which is one of the more remote gem stone centers of Minas Geraes, lying about 150 miles due north of Conselheiro Pena. There the new find comes from a pegmatite dike producing mica and phenacite.

One might suppose that it would have been fairly easy for a person in Brazil at that time to find out all about the new mineral and even to get some of it. But

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that was not the case. During the whole of 1943 I was working in that very area of Brazil, on the great Itabira iron ore project, financed by the U. S. government. My duties centered in Itabira, about 185 miles northwest of Conselheiro Pena, and in Vitoria, and part of my work required me to travel often along the railway joining these two points, for we were to convert the narrow gauge line into one suitable for hauling heavy ore trains. I was constantly in the company of other mining engineers and we frequently passed through Conselheiro Pena. Not once did we hear any reference to an unknown mineral being extracted by a few prospectors less than a score of miles away.

This is not so odd as it may seem for we were engaged in the urgent and confining problem of trying to make Itabira iron available to the allies as soon as possible. That was the big news of the day—the activity that was transforming the lethargic backlands into a region of importance to the world and offering employment to everyone. Wherever we project engineers went our appearance provoked only talk about this huge undertaking.

I spent the first six months of 1944 in Rio de Janeiro. Once or twice I heard a vague rumor about a newly discovered mineral to be named in honor of Brazil. But at that time news other than war reports hardly received much circulation within the boundaries of our South American ally, which was just getting geared for active part in the conflict. In the autumn of that year, before my wife and I left Rio de Janeiro to make our home in California, our lady mineralogist friend came to say goodbye. We discussed the rumor about a new mineral; wondered if it might be the one she had termed "a new form of chrysoberyl", and she promised to find out and send me a sample. She never did.

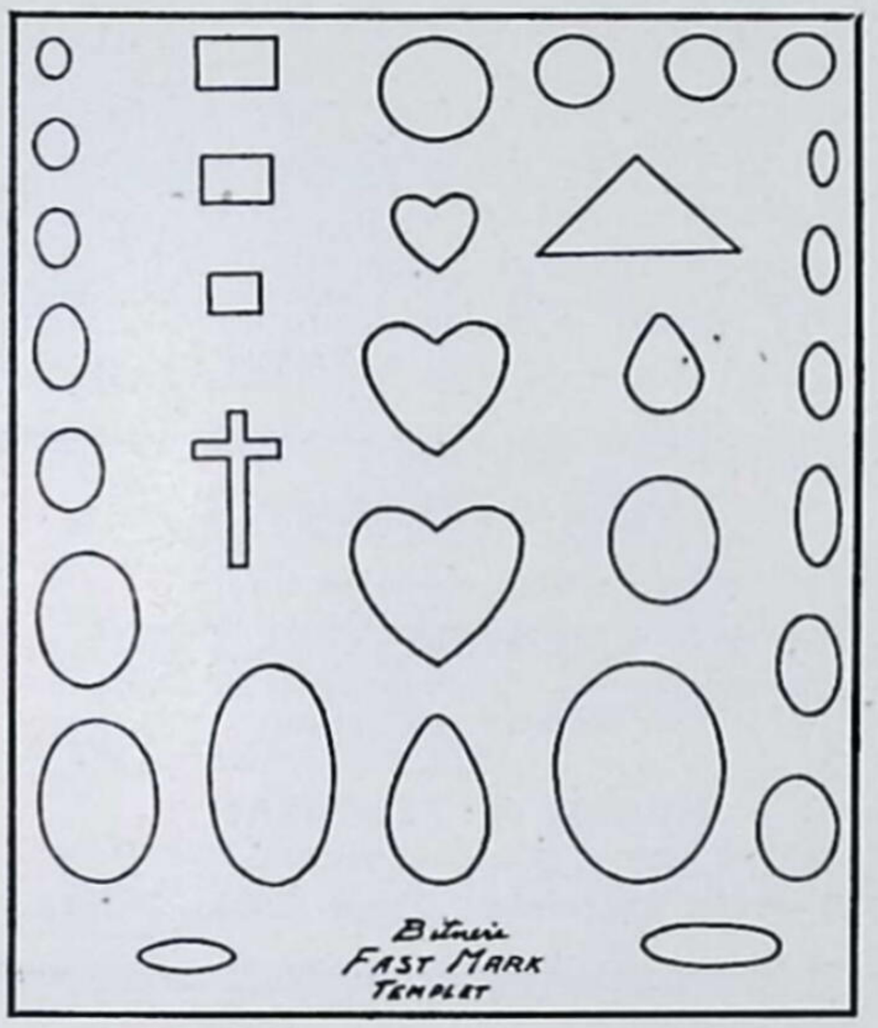
Months later, when we were settled in California, our mineral collection occupying its usual place of honor among our home furnishings, we made our first acquaintance with the genus *Rockhound*. We then thought of Brazilianite and we sent to Brazil for some of it. From a Rio de Janeiro dealer I received an egg-yolk colored chunk of a very hard, conchoidally fractured mineral, not showing any crystal faces. It was unquestionably yellow beryl. Only the price suggested Brazilianite, as described by Dr. Pough. But soon my brother, who lives in Brazil, began sending me a good supply of the right material and I found myself the fortunate owner of one of the largest and finest Brazilianite crystals that has been found. It is shown in the center of the accompanying photo.

The unflawed parts of Brazilianite crystals are transparent and suitable for faceting successfully if the cutter is mindful of its softness and easy cleavage. The stone has a refractive index of 1.60 and low dispersion. The finished product has about the same brilliance as yellow beryl. From Dr. Scorza, Dr. Pough received a large, clear piece which has been cut by the well known New York lapidary, Anthony Espositer. He made a 23 carat emerald cut which was sent to Dr. Scorza. It is displayed in the collection of the Department of Mines in Rio de Janeiro. He also made a 19 carat oval brilliant which can be seen at the American Museum of Natural History in New York.

Brazilianite for gems is now rare and expensive. Last April a dealer in rough gem material in Rio de Janeiro was offering a piece of about 50 grams, which would cut (supposedly) two stones of about 30 carats and 10 carats each. The price was $350.00. It was about the only piece of any size and good quality available at the time.

Even as specimen material Brazilianite can be truthfully described as a rare mineral. Just how scarce it may be in the earth's crust one cannot say. Certainly the original sources are on the wane and much of what they produced was wasted. The sum of $250,000 worth removed from around Conselheiro Pena represents the probable *value* of the mineral, but not an amount realized. A great deal of this potential value was lost by trimming specimens and crystals to provide portions suitable for cutting and much of the cutting proved a failure. The only use conceived for a stone of this kind, found in such small quantity, was for gems. Therefore gem dealers were the ones who showed the most initiative regarding the unknown mineral during the period before it was formally brought to the notice of the mineralogical world.

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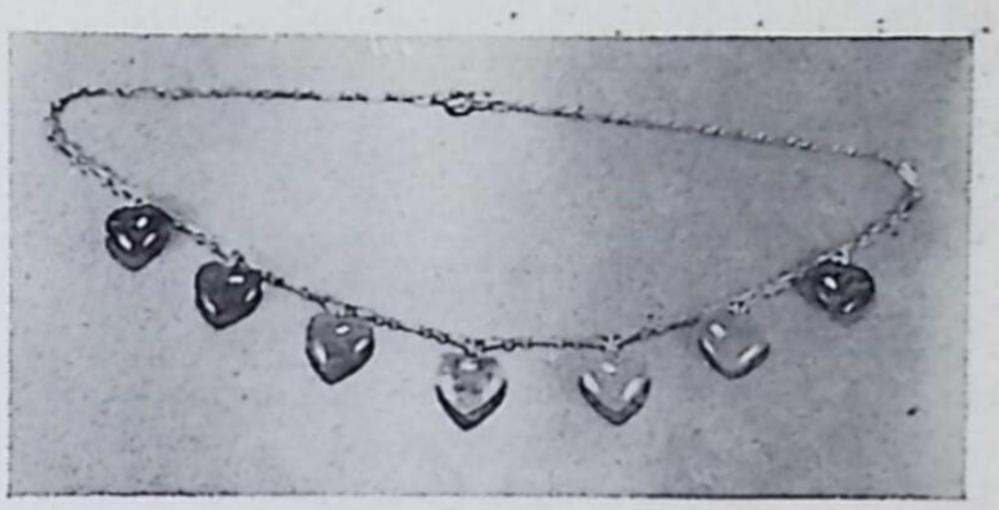
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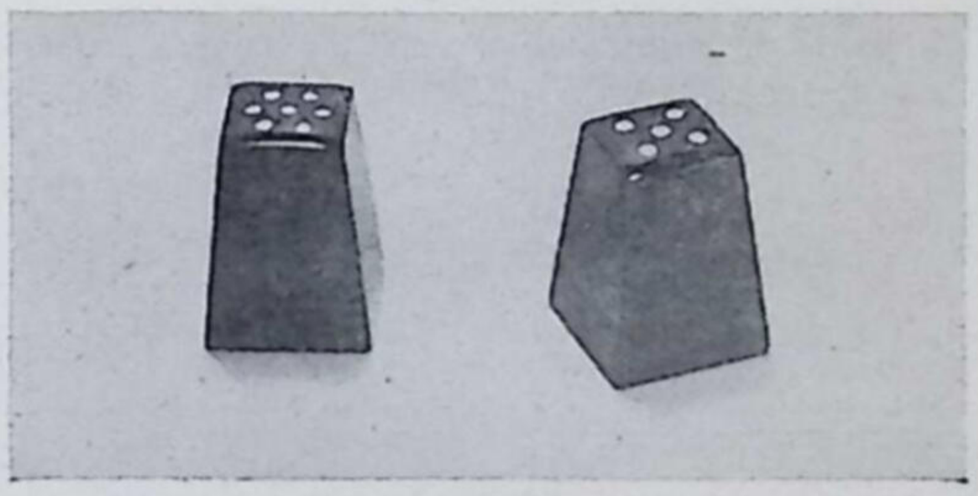
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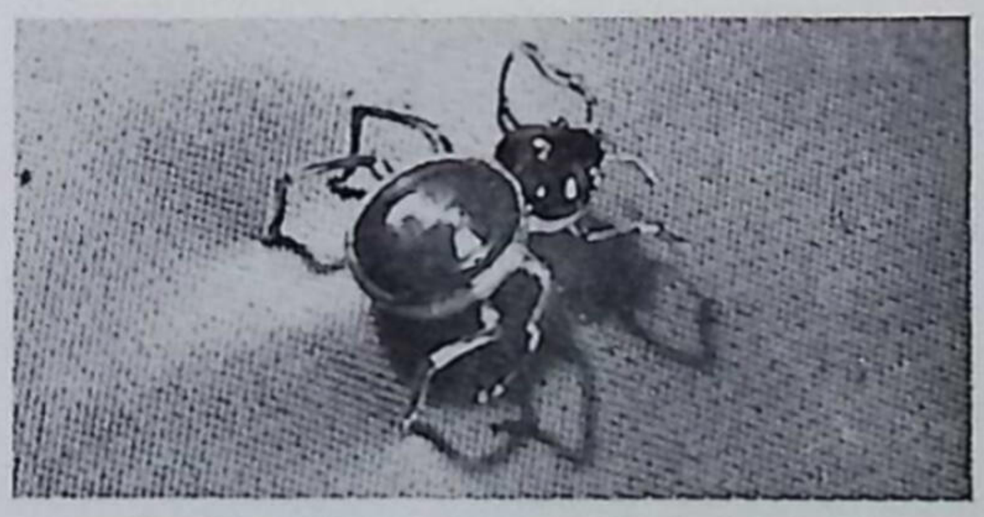
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By the time the workings were reopened by others a wider interest was awakening in the novelty that was soon to be named Brazilianite. More care was taken to preserve what remained from reckless exploitation and the finest crystal formations were respected. Now the diggings are no longer in operation. It is not possible to say what the future will bring forth. However Brizilianite, in a short time after its recognition as a new, outstanding species, has become a great rarity.

Ed. note: Brazilianite has been found recently at the old Palermo mine, North Groton, N.H. according to an article in the Nov. '48 issue of the MINERALOGIST.

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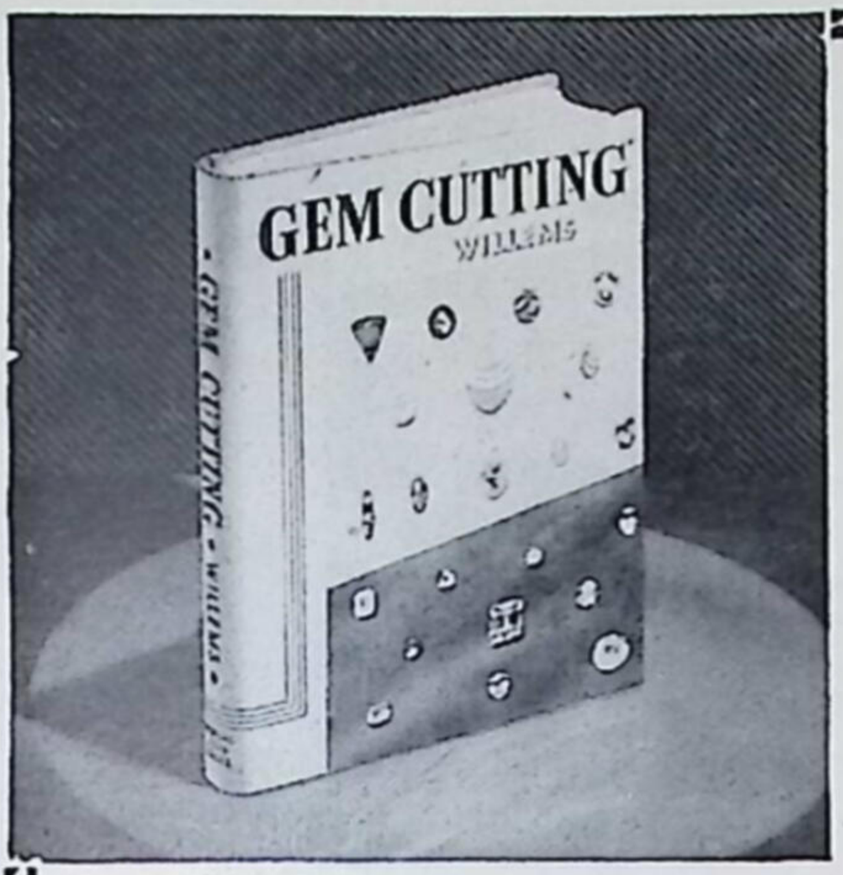
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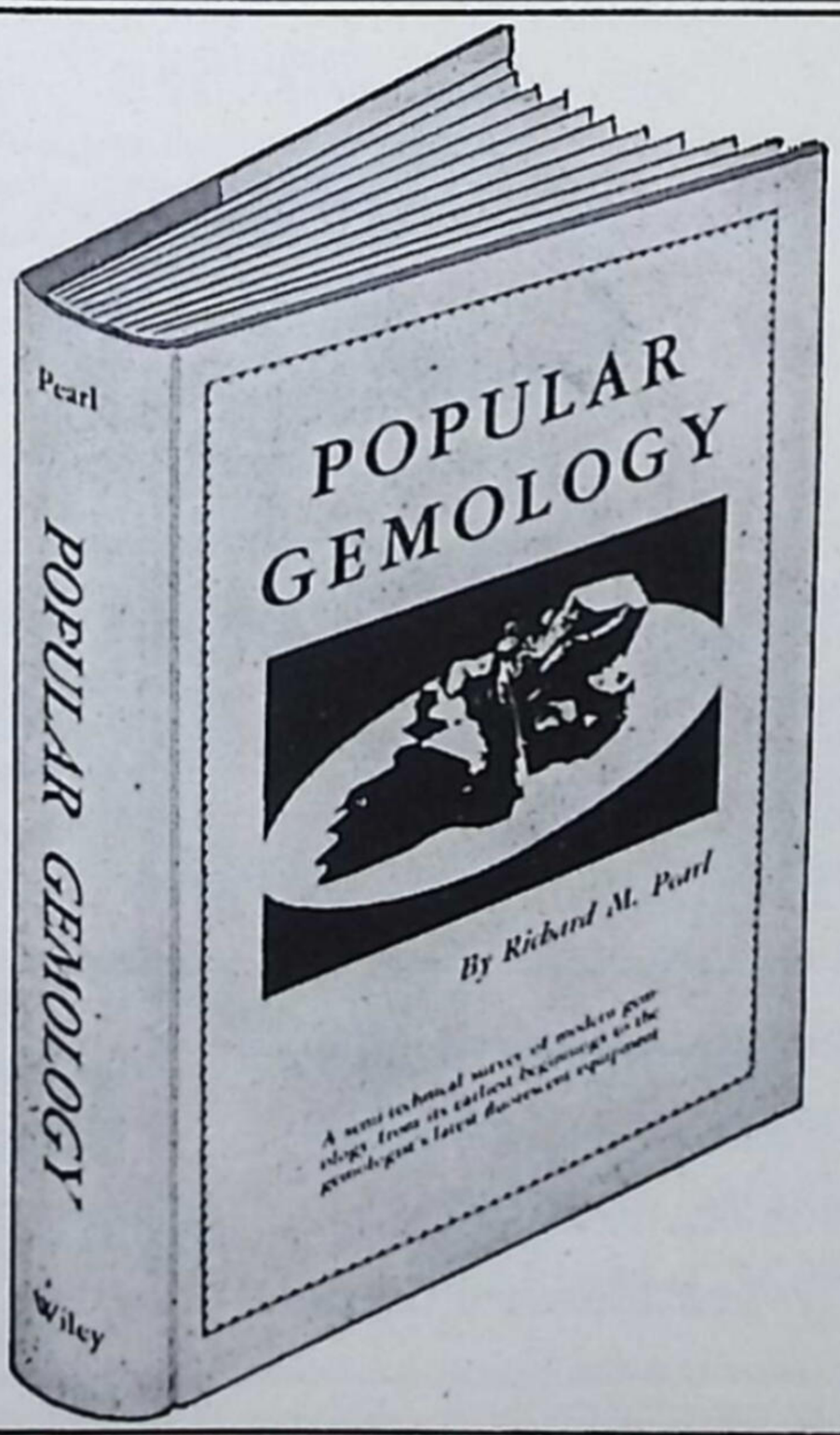
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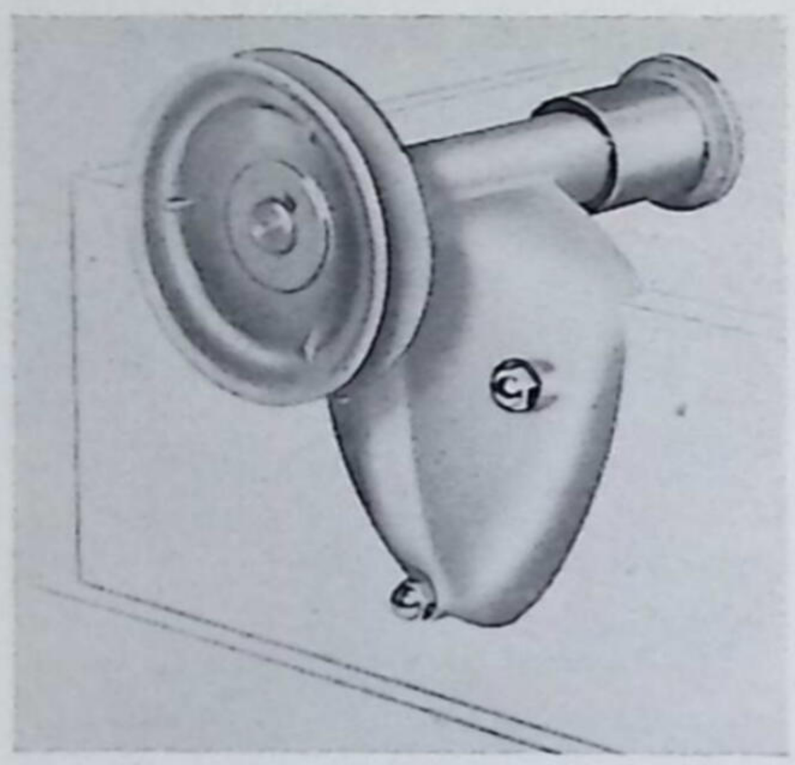
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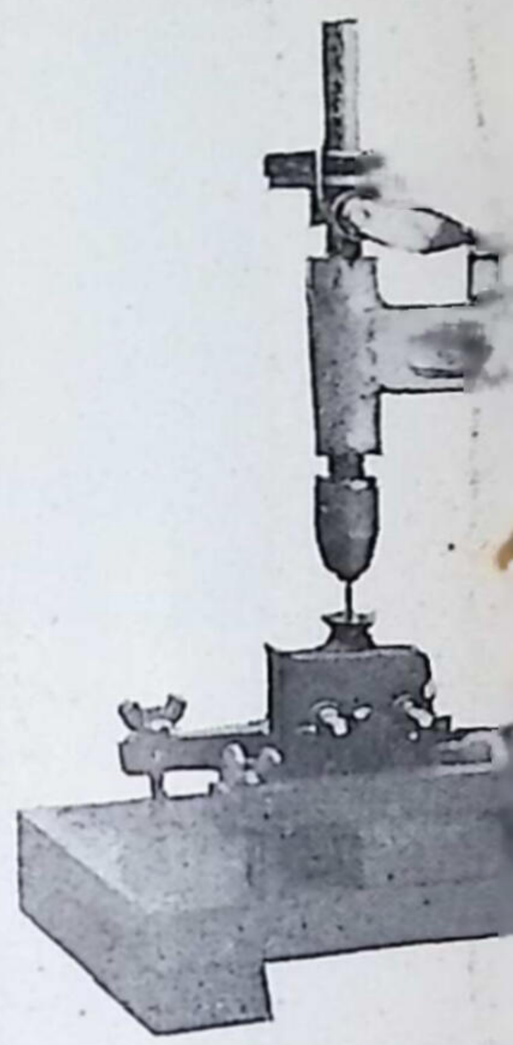
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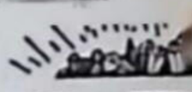
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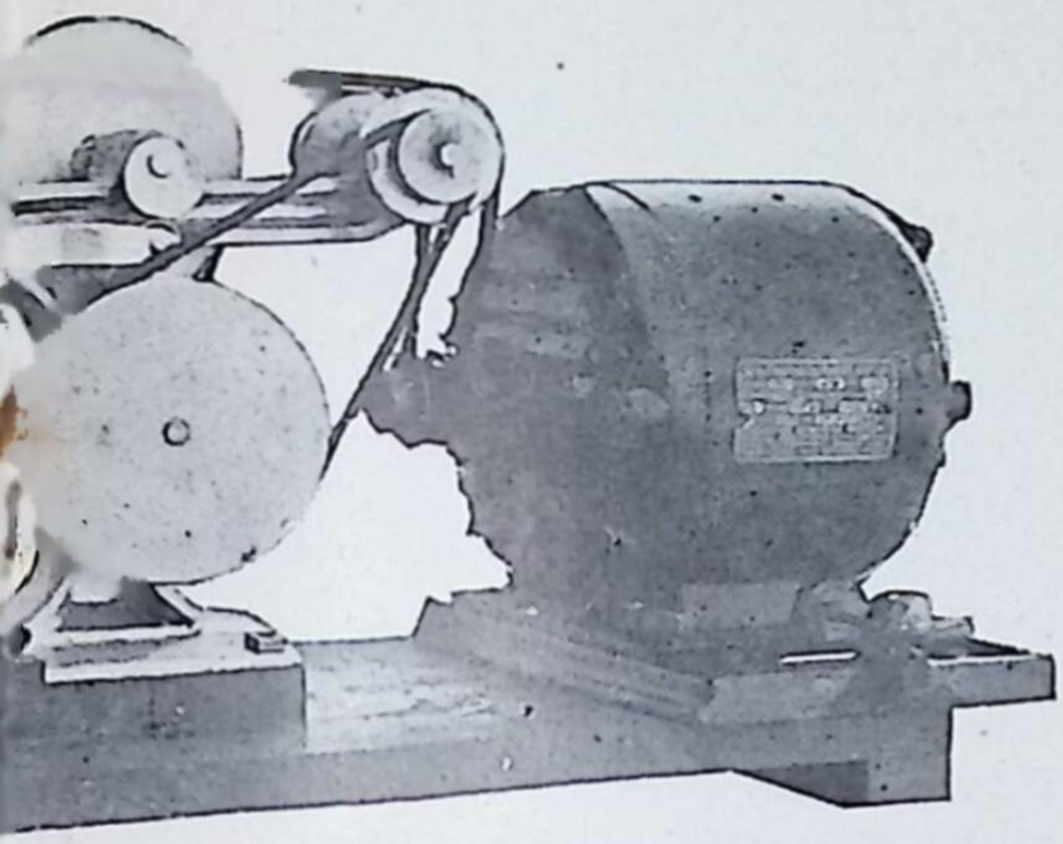


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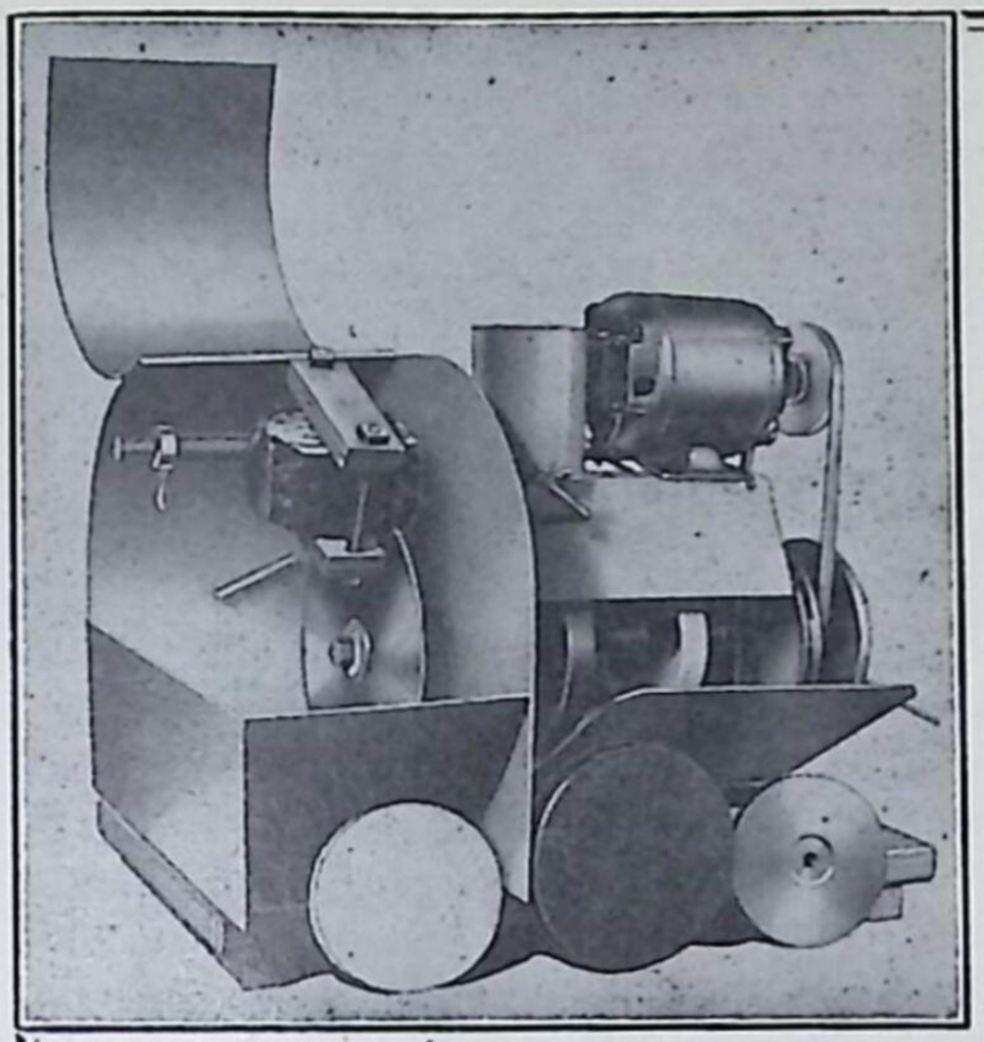
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Few thrills can surpass those experienced by the gem cutter who successfully cuts and polishes his first tiger eye gem. There before him, in all its radiant beauty, lies one of nature's mineral masterpieces—and an eloquent testimonial to the ingenuity of the craftsman whose patience and skill has unveiled all this dazzling display of color.

This wonderful stone was no doubt first called tiger eye because of the striking similarity between the banded, fiery glow of the eye of the great jungle beast, and the similar banded, fiery glow of the golden, or honey-colored variety of this unusual gem. The silky luster or chatoyance is attributed to its fibrous structure, for it is the alteration of crocidolite, a fibrous mineral of the amphibole group. Iron sodium silicate has been altered by the removal of alkali, oxidation, and the deposition of silica between the fibers or in replacement of them. The result is a hard siliceous, or quartz family gemstone, usually highly colored with brown oxide of iron, and of a hardness of about 7 on Moh's scale. When occurring in rich golden to dark brown colors it is known as "tiger eye"; when blue or gray it is known as "hawk's-eye." A beautiful red may be obtained by the very simple process of carefully applying heat. In some parts of the world, such as England, South Africa, and elsewhere, these gems are also known as "South African cat's eyes", especially when they are green. Commercial people, customs authorities, importers and exporters and the like, always refer to the material as "crocidolite," although it is a far cry from the unaltered crocidolite from which asbestos is derived, and from which the gem material is an alteration product, as explained.

There is a real art in learning to release the maximum beauty from a piece of tiger eye. The material usually occurs in veins of from one to two inches in thickness. The gem cutter who finds himself possessed of a piece of raw tiger eye will soon discover that he has also acquired a tricky problem in the orientation of his material for sawing in order that he can turn out slabs in which the plane of chatoyancy is parallel with the base of the slabs. By wetting the stone and observing the effect of a bright light in creating bands of appearing and disappearing light and dark golden brown colors he can discover the plane of chatoyance, i.e., the position in which he obtains the greatest display of such colors. Properly cut slabs will all have their faces and bases parallel to this chatoyant plane. A variation to left or right will give an absurd slab of material in which the chatoyancy is ill defined and which must be tipped to a ridiculous angle to produce the characteristic golden bands. These will appear blackish-brown or a rather lusterless golden color when looked at from above, or from normal side views.

When one has mastered the orientation of his rough material (and only experience through trial and error will teach this) properly oriented slabs will begin to drop from the slabbing saw with great regularity. Once the material has been mastered one need no longer stand in awe of its peculiar idiosyncracies, though always remaining a slave to its enchanting graces. Soon the gem cutter discovers that all material, even when properly oriented, is not of the same quality. In some pieces the "grain" or bands of light and dark will be narrow, straight and closely spaced. This is first-class material and will make flashing gems, rich in dazzling beauty. More often than not, however, the bands will be wider, and the gems therefrom will be less dashing, though equally colorful and possessed of somewhat greater dignity. It is the proper orientation



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of this "grain" or parallel bands of ever-changing light and dark colors which gives the "eyes" to the typical tiger eye gem. (See illustration—Figures 1 and 2)

The thickness of the cabochon will have a direct effect upon the width of the resulting bands or "eyes." High, thick cabochons, with steep tapering sides, will give narrow bands. Thinner cabochons with sides more sloping will give wider bands. (See Figures 3 and 4, cabochon cross sections.)

An oddity which may be attempted by the advanced amateur is a "bull's-eye" type of gem, as it is called by Mr. W. T. Baxter, author of "*Jewelry, Gem Cutting and Metalcraft,*" who first called our attention to this novelty. Taking a piece of very close-grained material, i.e., very narrow eyes, close together in great profusion, a thick slab may be taken off at right angles to the main display of eyes (See Fig. 5). Cutting a round, high cabochon, you will consecutively expose concentric circles of light and dark layers which will give a "bull's-eye" effect (See Fig. 6).

Other novelties may be attempted from slabs of material in which the "eyes" are not parallel, but are wavy, or vary from the desired norm in other respects. Some of these odd slabs make most unusual and attractive cabochons for use as buttons and other ornamental purposes where their oddity is an asset rather than a liability.

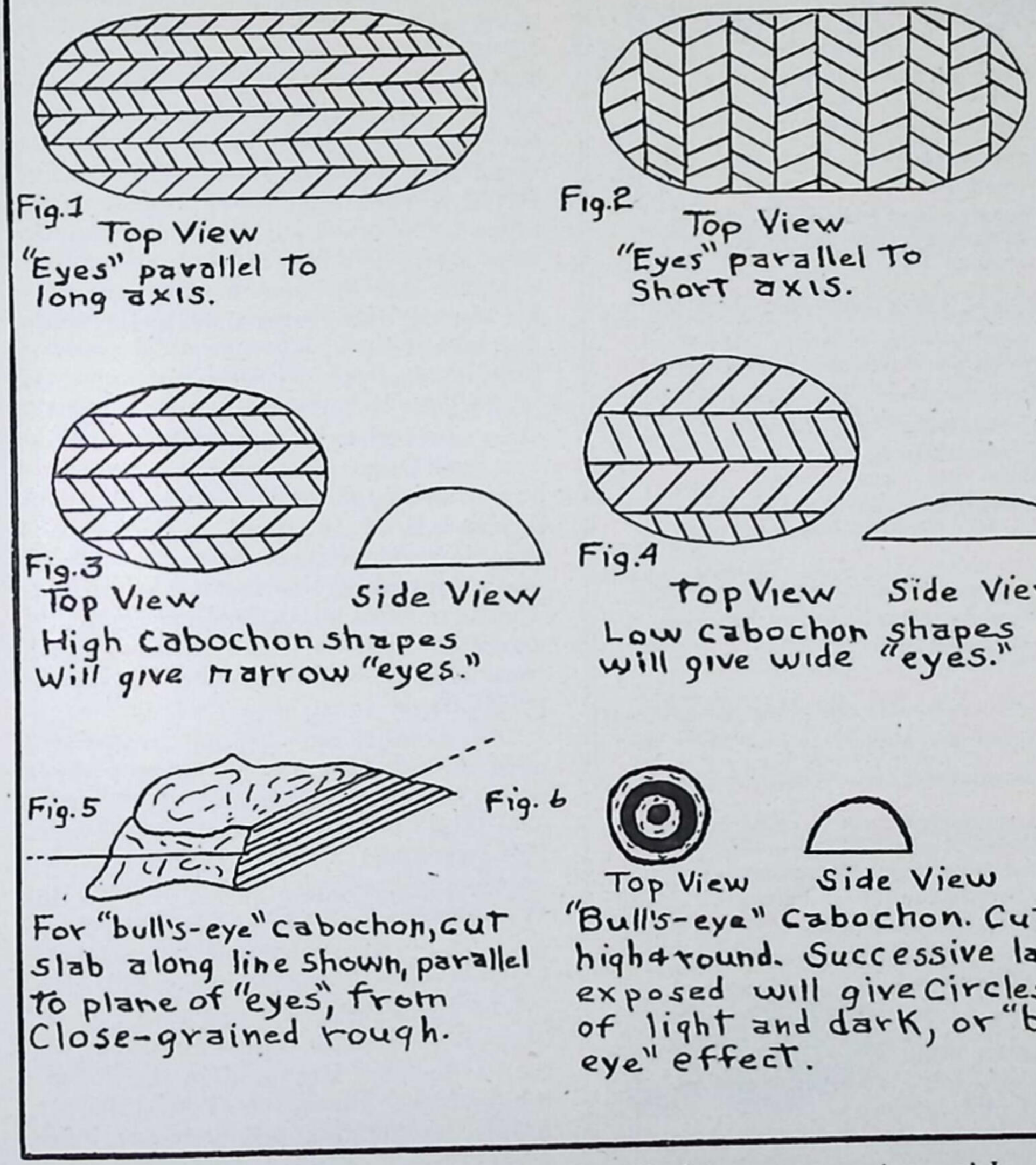
Some otherwise less attractive material may be magically transformed into highly desirable material by the simple expedient of giving it a heat treatment. Very little intensity of heat is required, and only short exposure is necessary to convert a honey-colored piece into a rich red. All that is essential is that the heat be applied slowly and carefully, as though one were heating an object such as glass, in order to prevent fracturing and breaking. The medium used may be an electric hot plate, pan over a gas flame, etc. In a short time the color change will be observed taking place. Cooling likewise should be slowly and carefully controlled to avoid breaking or fracturing. Longer applications of heat are necessary if the color change is to take place throughout the full extent of the material. But it is absolutely unnecessary to effect such a complete color change throughout the material, as cabochons may first be roughed out of the honey-colored stone, then given a short heat treatment to give the desired shade of red, carefully cooled, and the gem completed in the ordinary manner without being concerned about whether the change was effected throughout the material. The change, once effected, is permanent, and need be of only slight depth.

Methods of cutting and polishing are as varied and unlike as could be imagined, with nearly every cutter having his own special treatment. However, remembering that tiger eye is a quartz gem, it is axiomatic that what will work with other quartz gems (petrified wood, jasper, agate) will work with tiger eye. Cutting may always be done well with a 220 grit wheel. With care a coarser wheel may be used for rough shaping. However, despite its quartz family relationship, tiger eye seems to cut more rapidly than other quartz materials. Therefore, if wheels coarser than 220 are used care must be exercised to see that over-cutting does not occur before one is aware of the rapidity with which the wheel is removing material.

Thorough sanding on successive grades of 120, 220 and 320 or 400 grit paper, either wet or dry types, is next in order. A well-worn 220 grit cloth may be substituted for the 320 or 400 grit operation if desired. Additional time and care spent in sanding, however, will always pay dividends in time saved in the polishing operation.

Polishing, likewise, may be very successfully accomplished by a number of alternative methods. Leading amateurs get beautiful, glossy surfaces with any of the following treatments: (1) Hard felt wheel with cerium oxide; (2) hard felt with tin oxide; (3) hard felt with levigated alumina; (4) hard leather wheel with chrome oxide. Other methods, not mentioned here, may produce equally satisfactory results.

In illustration of one of the many approaches to the successful production of tiger eye and other gems, the following detailed description is offered of the methods employed in the shop of one of the authors. These methods, adapted from the general rules given above, have produced some exquisite gems of great



Diagrams of cutting information described in accompanying article.

perfection and beauty. Other cutters may find other adaptations of the general rules given more to their liking, and in fact it is only by individual trial and experimentation that a system is finally evolved which is ideally suited to one's own particular needs and preferences.

In our shop the grinding wheels are allowed to run in pans of water. (Caution: Do not let wheels *stand* in water, however, or they will become water-logged and may "explode," subjecting the operator to great danger.) This is very handy for gem cutters who do not have a convenient supply of running water and drainage facilities in their shop.

The slab is marked with a slightly oversize outline of the shape of the gem desired, using an aluminum rod or brass welding rod as a pencil, and then rough ground to shape on an 80-grit wheel before dopping. Next the stone is dopped in the following manner: The stone is held with a pair of pliers over an alcohol flame, bottom side up. A small piece of dopping wax is placed on the stone when it is hot enough to melt it. The dop stick, which has previously been dipped in melted wax, and allowed to harden,

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is reheated until the wax begins to melt. The dop stick is then placed on the stone, the heat from the stone causing the wax on the stick to melt further, running down and joining firmly with the wax on the stone. This forms a good quantity of the wax at the junction of the stone and the dop stick. Still holding the dop stick and stone together, the stone is set down on the table and the dop stick held in a vertical position until the wax has cooled. You may also, by wetting the fingers, carefully shape the wax if desired without danger of burning, for only a little moisture on the finger tips insulates adequately from the otherwise rather intense heat. While the wax is still soft the dop stick can easily be moved around until it is well centered. A good bond is usually obtained and very few stones have been knocked off when dopped by this method. *Warning!* The heat *must* be applied *slowly* to the stone, however, as too rapid heating will invariably fracture even the toughest of materials.

The stone is next ground to approximate shape and size on a 120 grit wheel, at a speed of approximately 1500 r.p.m. The final shaping is accomplished on a 220 grit wheel.

The sanding operation follows. In this phase of the work two operations are performed. First, the gem is sanded on a 220 grit sanding disc. Second, a sanding is given on a 400 grit disc. A 12" horizontal arborless lap is employed and the sanders are prepared in the following manner. Pieces of either thin plywood or linoleum are used as bases. Discs of felt approximately ⅛" thick and 8" in diameter are glued to the center of the base to act as a cushion for the sanding discs. Speed-wet sanding discs 8" in diameter are cemented to the felt. Separate 220 grit and 400 grit sanders are prepared. It is necessary to use a cement that is not water soluble. The asphaltic cement used to lay asphalt tile is excellent for this purpose. A stick of inexpensive Sears-Roebuck disc cement is used to hold the discs to the felt.

The sanding discs wear at a fairly rapid rate. To supplement the grit on the disc, and to cut down on the dust, a bottle of water, with the desired size grit suspended in the water, is used. The bot-

tles should be plainly marked 220 grit and 400 grit. This solution is applied to the discs by blowing it out of the flask by means of two glass tubes fitted in the neck with a rubber stopper. One tube is curved for a spout; the other is bent at a suitable angle through which to blow. The flask is held in the left hand, and an occasional shake is necessary to keep the grit suspended. The amount of grit used depends upon the fancy of the operator. At least a couple of teaspoonsful per pint of water are desirable. This procedure, while unusual, has been most satisfactory in prolonging the life and usefulness of the otherwise rather short-lived sanding discs.

The next operation is polishing. A hard white felt disc 8″ in diameter and approximately 3/16″ thick is cemented to a plywood base in the same manner as with the sanders. The felt is thoroughly soaked. After the water has penetrated well a coating of final polishing compound is brushed on. As the water soaks into the felt it draws some of the polishing compound in with it, but a good heavy outer coating is essential. The disc is allowed to stand for a few minutes to dry sufficiently to keep the polishing agent from being thrown off when the polishing begins. The polisher is run damp, but not wet, usually at a speed of about 500 r.p.m. As the felt dries out additional water is brushed on, keeping the wheel damp, laying the dust, and holding the polishing agent to the wheel.

Small amounts of liquid soap may be added to any of the solutions mentioned in the foregoing description to increase the adhesiveness of the mixtures.

Incidentally, as there is no arbor hole on the iron lap used on this particular outfit, both sanding and polishing discs are held to the iron lap by simple clamps consisting of aluminum clothes pins. These are short. flexible and strong. Although the useable area of the revolving lap is reduced somewhat by the overlap of these clamps, and one might think this would be annoying, in actual operation one soon learns to stay within the boundaries of the available sanding or polishing areas without conscious effort. What does this prove? Only what amateurs have known for a long time—that many a seemingly crude or awk-

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ward home-made device is quite adequate and serviceable in the hands of its inventor whose fertile imagination was able to produce from the materials at hand a tool suitable for the job at hand. Yet it is also worth remarking that this justifiable pride in his ingenuity and craftsmanship does not detract from his equally great pride and joy at adding new precision machines and equipment to his shop as he can afford them.

That, briefly, is the way in which one amateur has adapted a combination of both manufactured and home-made equipment to the rapid and satisfactory production of tiger eye and many other varieties of finished gems.

In conclusion it may be observed that tiger eye is not hard to cut, grind or polish. Yet it is regarded as difficult material because it is "tricky." As a matter of fact, *tiger eye is not a difficult material.* It is much more accurate to regard it only as "tricky." Any amateur who has had success in handling other types of gem materials will get not only good but usually spectacular results with tiger eye provided he is willing to face the prospect of a short, sometimes annoying period in which he is learning to orient the rough stone properly in order to bring out the "grain" or pattern of "eyes" in the exact plane of chatoyance. Once this has been mastered, he has crossed the threshold to new pleasures. Now he can follow the beckoning lure of the first, never-to-be-forgotten joys of producing radiant gems, like drops of glittering gold, from treasured pieces of flashing stone—stone that was dug from the bowels of the earth of far-away Griqualand, South Africa, and imported for his cutting pleasure.

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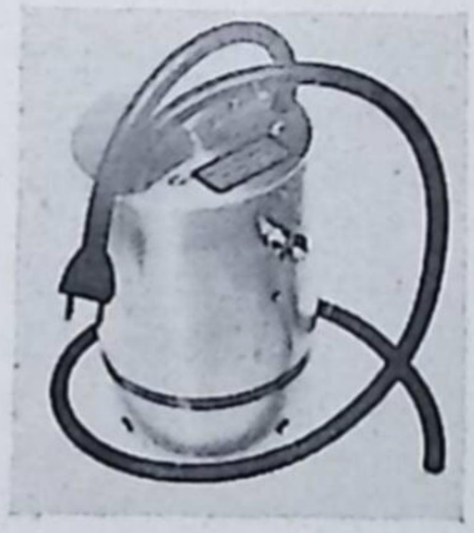
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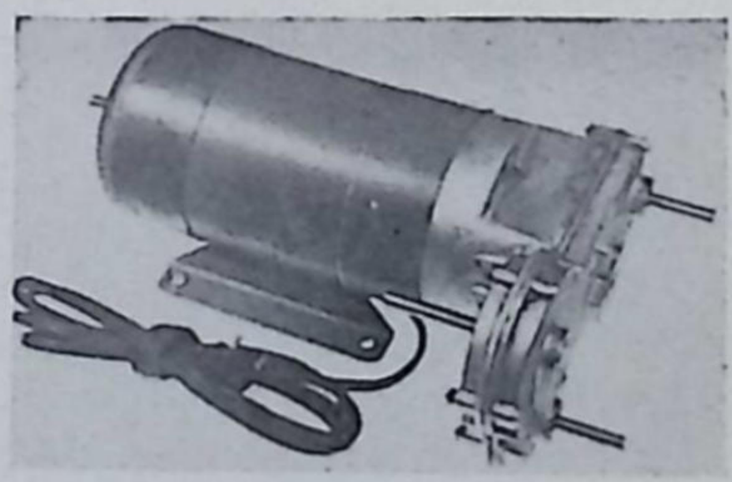
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After we had been making jewelry a while, and had gotten over the first joys of having solder flow evenly, and being able to saw a number of pieces without breaking the saw-blade, we discovered a few basic design forms that had been used by many different peoples dating back to the earliest work that could be called jewelry. These forms, though similar, were used in such varied ways as to make the jewelry have a completely different character from that of other times and other peoples. The motifs, however, were the same. We would like to pass on a few of the things we found and incorporated successfully in designs of our own, that are easy and practical for the craftsman working on a low budget with few tools. The results are usually far more beautiful than things more tediously worked, and give a setting to the stone that makes the piece a harmonious whole.

The simplest of these forms, or motifs, is what we call a "heart" (for no other reason than that it slightly resembles one, and we have never heard another name for it). We start with a piece of flat wire cut in even lengths of about ¾". If larger hearts are desired, the wires can be cut longer, but they should all be cut at once to be sure they'll match when finished. It's a good idea to set one of the pieces aside without turning it, to use as a model in case you want more hearts the same size later. Any kind of wire can be used, but for your first attempt at turning a number of similar units—and they must be similar—flat wire will be the most manageable.

With smooth, pointed pliers, a hook is turned at each end of the wire. You then turn the hooks in toward each other, bending the wire slowly and evenly along the middle to form a curve. Women seem to be well adapted to this small work, so if you have a wife sitting idly by knitting, or listening to the radio, it might be a good idea to teach her how to turn the hearts.

After the units are turned, all that remains is to solder them to the bezel, or the desired piece of silver. They can be placed either up or down, cut in half, or interlocking, as shown in the illustration. To solder the hearts to the bezel or plate, it might be a good idea for you to pin the latter to the asbestos, so you won't disturb the arrangement with a false move. Arrange all the hearts, and see that each is touching the next. If you have space left over, open them gently with small, smooth pliers, one by one until the space is taken up. If there is not enough space for the hearts to fit touching the bezel, close them slightly.

Be very careful when soldering. Make sure to place a piece of solder at each place one heart touches another or the bezel. It is necessary to make the solder flow evenly, so it will appear to be part of the design after the piece is finished.

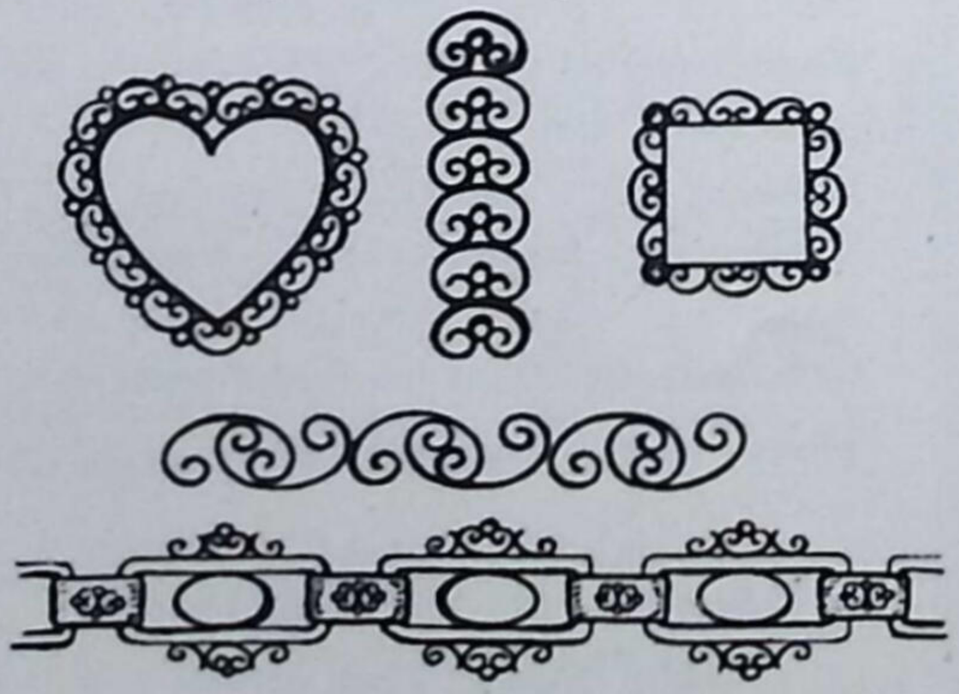


Diagram showing application of the "heart" motif

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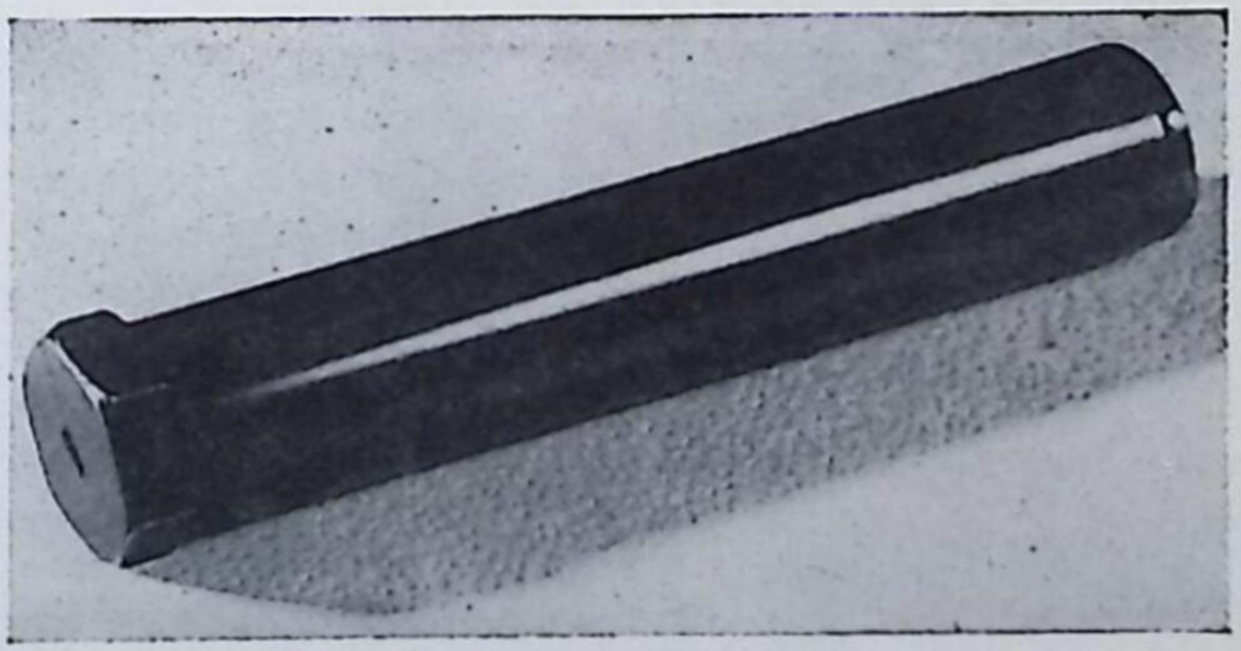
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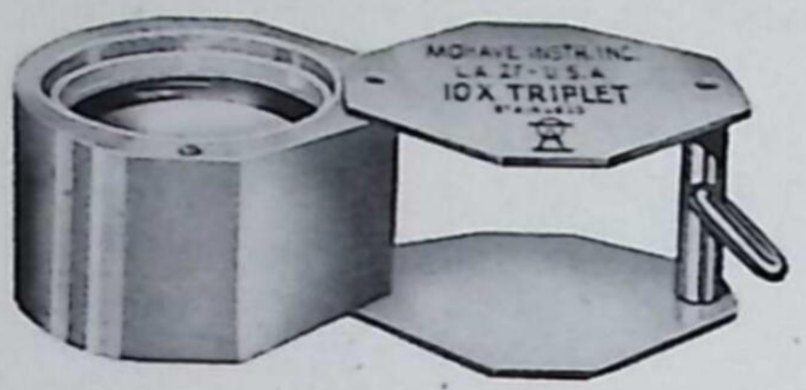
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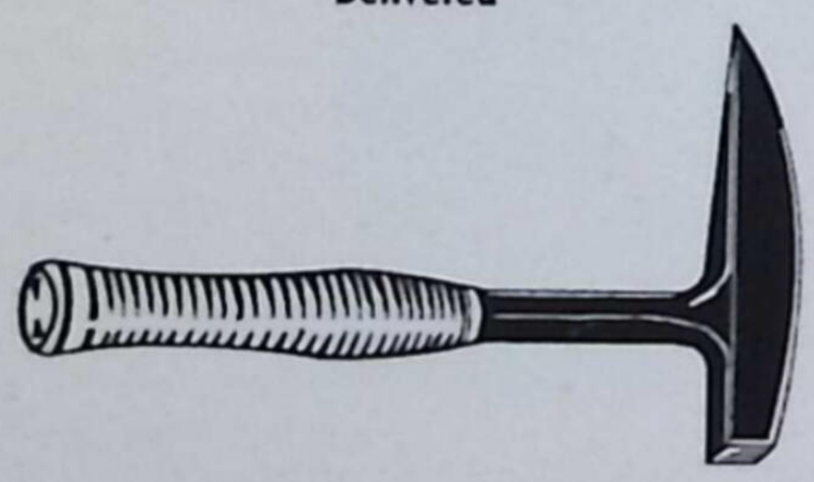


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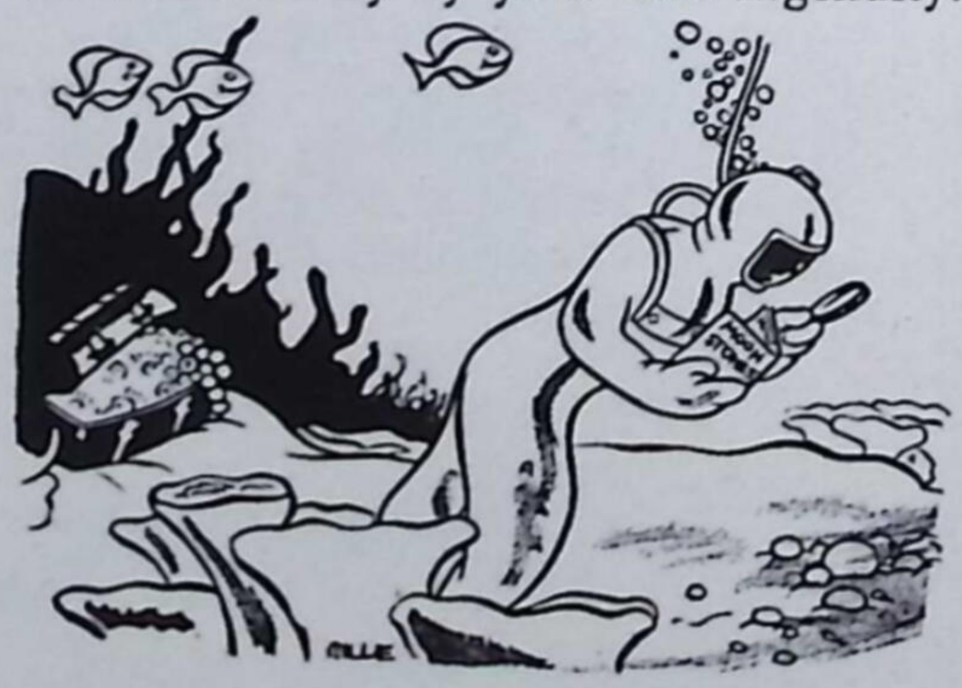
1859 Hillhurst Ave., Los Angeles 27

Filing these pieces is not required at all if the soldering is done well. When the pin is complete, turn, and support the hearts directly under the joint and catch, heating that area only.

This probably sounds involved. It is more work than dapping out the simple leaf the average amateur is prone to do, but after you have made one or two things this way, and see what a wide range of possibilities it offers, you will be sold on it, as we are.

We have not attempted to tell you how to use the illustrations we provide, thinking it would be much more fun for you to adapt them yourselves. However, we will say that almost anything can be made with hearts. We even made a wedding band of interlocking hearts with strips of flat wire forming the outside edges.

For the information of anyone who is interested in antique jewelry, a good source of up-to-date ideas is the Metropolitan Museum of Art in New York. They sell picture books of various collections of antique jewelry. These booklets are inexpensive (twenty-five cents) and are a wonderful source of ideas for the ambitious craftsman. The pictures are large and clear, with many details enlarged for easier study. Renaissance, Medieval, Chinese, Near Eastern and Greek jewelry are some of the selections obtainable. Other good sources are pictures or actual examples of wrought iron work, engraving on the title pages of old books, stained glass windows—using stones in place of the glass. Remember, if you can't make a suitable arrangement completely open, the design can be applied to a dapped or flat plate and then sawed around the outer edges. You are limited only by your own ingenuity.



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◆ Ruminations of a Rockhound

By DON ALFREDO
Casa De Las Cruces, Las Cruces, N.M.
Member of Dona Ana County Rockhounds

I have been a rockhound all my life, only most of the time I didn't know it. "All my life" is a long time to be something and not know it, but the trouble wasn't so much with me as it was with where I lived. For over forty years I lived in New England—within ten miles of the Atlantic Coast—and that's where I didn't know I was a rockhound.

New England has rocks—the kind that are famed in song and story—"Stern and rock-bound coast" and all that sort of thing, and here and there are scattered mines and quarries, and even more scattered deposits of really precious material. But in general the average vacationer, picnicker, or hiker finds little of interest in the usual hunk of granite, plain white quartz, or a rather dismal array of drab grays, browns, yellows, and reds. Every summer we made from one to a hundred visits to various beaches, and seldom did we omit lugging home a dozen to a half-barrel of assorted beach pebbles. I don't know why, unless it was to put some in the goldfish bowl or line a driveway. They were interesting primarily—and sometimes exclusively—because they were water-worn. Seldom was there anything exciting about their color. I never thought of breaking or sawing one in half, for there was nothing about their exterior to indicate that the interior would show other than more of the same. Occasionally we found a so-called "lucky" stone — so-called because of a band of contrasting color running completely around it and because they are not very numerous. It is presumed that the band is the exposed portion of a layer of material which runs right through the stone, but I never took the trouble to find out. These "lucky" stones are carried by some people for years in the thought that they may ward off such things as fallen arches or dandruff. I have carried them briefly and have led a rather healthy life, but I don't believe my "lucky" stones ever warded off anything.

We also made an annual trip into the mountains and occasionally uttered a mild "Oh!" or "Ah!" over something slightly different from the back-yard type of rock, but I don't recall carrying any of these home. It once occurred to me that we should have a piece of Mount Washington in our back yard. Not that such a rock would be a thing of beauty or of strange formation; it would look about like any other gray rock. But Mount Washington is the biggest thing in New England and the possession of a piece of it gives one a feeling of power. The trouble was that any hunk of Mount Washington big enough to attract any attention would be too big to carry conveniently. So we settled for a loose spike from the Mount Washington Cog Railway.

Came the time when we moved to the southwest, and then, very promptly, came the realization that the rocks in the southwest have *stuff* in them. I understand the same thing is true in the west and the northwest (I haven't been there), but you can't look at the average southwestern rock without knowing there's *stuff* in it because the inside stuff sticks out—more or less—on the outside. But you can't tell too well from the outsticking parts what the inside is going to look like when you break or saw the piece in two. Even if you find one that's already broken you aren't satisfied. You wonder what would show up if it were broken at a different place, so you whack it with another rock which, instead of breaking the specimen, breaks into two or more pieces, each revealing a lot of varicolored swirls and blobs. So you put the fragments of the erstwhile whacker into your sack with the whackee. Your next purchase is a geologist's hammer. Now, brother, you're a rockhound! From now on you go places just to look for rocks and you carry tremendous loads of them over terrain such as you wouldn't previously have crossed even without anything to tote along with you.

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Your entire attention is directed to whatever lies on the ground within six feet of where you are standing, walking, or crawling, and when friend wife says, "Look at that mountain!" you just grunt, "Uh-huh. What mountain?"

My first rockhounding expedition was to an abandoned mine dump where I had been assured there were "lots of pretty rocks." We might even find a trace—a mere trace, to be sure—of gold or silver. But it isn't gold or silver that activates a rockhound—it's just rocks. We found rocks in abundance and, having never seen a mine dump before, we were thrilled by the wide variety of colors available. I cautioned my family that the stuff had all been thrown away once, was of no value, and that we shouldn't try to carry off too much of it. I practiced not what I preached, and my pockets were soon bulging and a leather case, brought for the purpose, was so loaded that the handles nearly pulled off. If we had to climb to our car rather than stroll down a gentle slope, we'd never have made it.

We soon passed the point where possession of rocks was sufficient; we became interested in identification, and for such identification we relied upon rockhounds and expert mineralogists. We were somewhat annoyed to discover that frequently our specimens seemed to stump even the experts. But rocks aren't like postage stamps; they aren't plainly labelled and "borderline cases" exceed the pure or reasonably pure specimens.

It soon became known that we were amassing a collection of rocks. Other collectors came to view our accumulation. It saddened us to discover that they didn't get particularly excited about it. After viewing other collections we readily appreciated that our tons of stuff were nothing in comparison to what others had acquired in years of searching. Then we began to inquire about localities where really *good* material might be found and we were soon planning our trips with such information as a guide. We would find agate mostly in plain colors. Twenty miles south we would find it in banded and design form. At this mountain we would find quartz—just quartz, to be sure, but in such a wide variety of colors and misshapen forms as to make it irresistible. Then

came thunder eggs, geodes, and nondescript nodules, and in the thunder egg we thought, for a time, we had reached the pinnacle. Nothing of greater interest could exist. There is not, to my mind, any such thing as a "bad" thunder egg any more than there is such a thing as a "pretty good" egg of the edible variety. Of course, there are some chalky duds, but they are thunder eggs just the same and I gloat over them.

Mention that this or that material could be found here or there proved to be no guarantee that we would find any of it. We also found that certain materials which we toted home in some quantity were unknown to our friends. They wanted to know where we got them and we were glad to show them. This led, before long to our affiliation with a gang of rockhounds.

Our "gang" was unorganized, to be sure, but its mass attacks on the rock front were things to remember. They frequently involved a before-daylight start, breakfast on the way, and a scattering for the search before the earth had hardly begun to warm. Collection continued throughout the day, interrupted only by a lunch period. Did I say, *lunch?*—I should have said *spread,* for our gang transported and consumed enough food for thrice the number of persons present. To facilitate (?) the meal-taking there were transported to the scene tablecloths, paper napkins, cutlery, table ware, and gallons of water and "improved" versions thereof—"improved" by the addition of coffee berries or various fruit juices. Someone always sat on a cactus. Sometimes we were invaded by ants. There were always complaints about having eaten too much. But everyone had a good time and our rock collections grew at alarming rates. We had to make frequent trips to the parked vehicles to deposit our "to date" accumulations; otherwise our loads would have been too heavy to carry at all. Up on the mesas, down in the arroyos, over gravel and loose rock, miles of sand, acres of malpais; geodes, thunder eggs, Apache tears, fossils, "Goshawfuls," and just rocks.

What is a "Goshawful"? I coined the term to describe rocks which lack beauty, value, and all else except grotesque shape. Among mine is a hunk of par-

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tially banded, brownish stuff which looks something like a bottle opener and something like the head and featherless neck of some sort of prehistoric bird of unknown genus—a bird with open beak and extended tongue, apparently in the act of emitting a vicious squawk.

Although the gang members scattered widely, their paths crossed and re-crossed, each time with the inevitable comparison of finds and the subsequent discussion of what this or that should be designated. Chalcedony? Agate? Opal? Carnelian? — many a borderline case without positive identification or agreement. Naturally such activity leads to study and sections of encyclopedias which had heretofore been passed over were read assiduously. Old text books were dug out and things we had forgotten were re-learned and things we had never known were learned. Our world became slowly but surely entangled with a new language—the language of rocks, gems, minerals, and geology. We became ensnarled with monoclinic systems, botryoidal forms, dikes, lodes, pseudomorphs — no end! Getting untangled from such a snarl alone is much more difficult than it is in company—or so it seems. This, plus the desire to compare processed specimens, to compare them at a glance rather than by travelling from home to home, led to a desire for organization, and so we organized a rockhounds' club. Now at regular intervals we meet to re-hash our experiences, seriously study some phase of our hobby, compare specimens and get them positively identified, swap, sell, chit-chat, and—*eat*.

A rockhound is never satisfied. No matter how many tons of material he has on hand, he never finishes sorting it out and he always looks forward to accumulating more. In my short experience I have accumulated enough to keep my diamond saw and other equipment running for years. Yet I keep on collecting. Why? I've got to go and get some of that onyx that so-and-so has; got to get it *myself*, not swap for it. This thunder egg—showing a fascinating desert scene

—well, it's fine, but I want one showing Washington Crossing The Delaware or Bleriot Flying The English Channel. I would settle for something less than either of these, of course, but I'll not settle for something just a "litle" more fascinating than what I already have, so I'll keep right on hand-and-knee touring the gullies, mesas, deserts, and mountainsides while the rock piles grow in our yard, on our whatnot, in my workshop, even in the bottom drawer of my desk. The pile keeps growing until we may eventually have to move out and let the rocks take over.

There are those, of course, who think the whole business is silly. Perhaps it is, but at least it's a healthy hobby. It is growing by leaps and bounds and has countless thousands of devotees. Here in the southwest thunder eggs and other pretty rocks are abundant. Yes, here the rockhound is to be contended with, but back where I came from he presents no problem. The rocks back there don't have *stuff* in 'em!

Give YOURSELF a hobby for CHRISTMAS. Nelson Mfg. Co. Slabbing Saws and Equipment—RX Complete Lapidary Machine — B & I Gemmaker Felker Saws — Poly Arbors.

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George Davey of San Fernando, Calif., writes "why don't you get smart and use zirconium oxide on your luctite lap? Use plenty of water with it and use it for quartz, garnet, tourmaline, scapolite, etc." We tried this on George's own equipment on a very large citrine we were faceting but we found it to be no improvement over the cerium oxide on a lucite lap we had been using on our own equipment—besides which it is awfully messy. However Davey is a skilled professional faceter (makes the Rapidesign Guides) and we listen carefully to any advice he offers. We hope that some more active faceters will experiment with this idea and let our readers know about it.

* * *

James C. Arnold of Los Angeles, who wrote the fine article on how to cut star quartz in the October, 1947 *Journal*, suggested the use of Nitro-Benzene as a refractive liquid for orienting quartz spheres. He now writes that "Nitro-Benzene is poisonous and users are cautioned to use tweezers in handling the quartz while immersed in the liquid and *avoid breathing the fumes.*"

* * *

When I make cabochons the size of a quarter or larger I use No. 37-D darts such as children use with a toy pistol. They are nothing more than a round stick

(*Continued on Page 342*)

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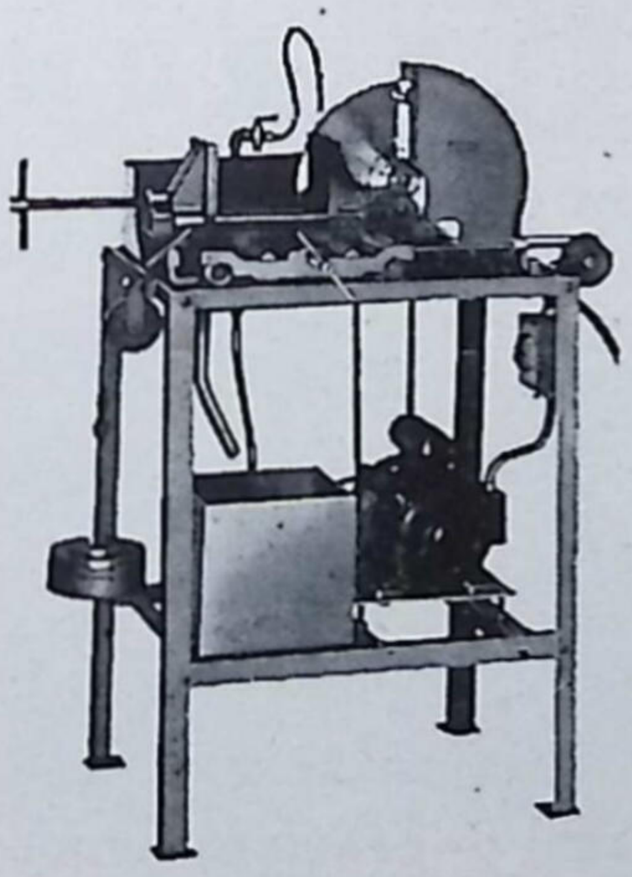
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$13.20	12x10mm oval	**$14.40**
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We welcome a visit from you any time

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Portland 22, Oregon **Phone TAbor 3093**

(*Continued from Page 340*)

about 6" long with a small rubber suction cup on one end and they do a wonderful job as a dopping stick.—Mrs. Ed. Lovelace, Durkee, Oregon.

* * *

Recently I demolished a fine old fashioned mahogany victrola cabinet and I wondered if it had ever occurred to anyone what a fine faceting bench it would make. It could quite easily be adapted with plenty of shelf space on each side for tools and material.—Dwight Horton, Watervliet, Mich. Ed. note: Yes, there are many old Victrola turntables being used as faceting laps—and many old records for polishing laps too. Good idea.

* * *

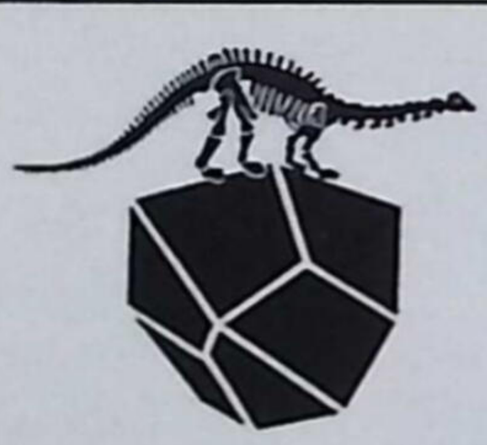
"Here is an absolutely accurate method for cutting cabs the way you want them. It is easier on the eyes than any kind of pencil marking. There is on the market a Scotch Tape-like material for decorators. It is made for a painting guide for woodwork. Cut off the length needed and stick it on a piece of linoleum or smooth wood. Don't place the tape on paper as it ruins the adhesive quality. Mark out the desired cab shape with a template. Remove it carefully and stick it on your slab. Water will not loosen it. Grind away the stone up to the tape for a perfect, easy, quick job that takes no extra eyesight to follow. When the cab is shaped up to the tape it is easily pulled off.—Margery A. Serafine, Miami, Fla.

* * *

The sapphire pointed needle from your phonograph will make an excellent hardness test point for Mohs scale 9. These needles need replacement after 10,000 plays and are set with a small synthetic sapphire. Mount the old needle in a suitable handle.—Jim Taylor, Ventura, Calif.

* * *

In case you missed the Beginners' Page in this issue (Page 344) it contains the best tip we have ever offered for polishing jade.



GEMS • *Finest Quality*

Aquamarine, Amethyst, Citrine, Tourmaline, Opal,

and all other precious and semi-precious stones.

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SYNTHETIC GEMS

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PETRIFIED WOOD in colors and pictures. AGATE in Red Moss, Golden Moss, Tubes, Black Banded, Red Banded, Red and Black. MOSS JASPERS in many colors and patterns.

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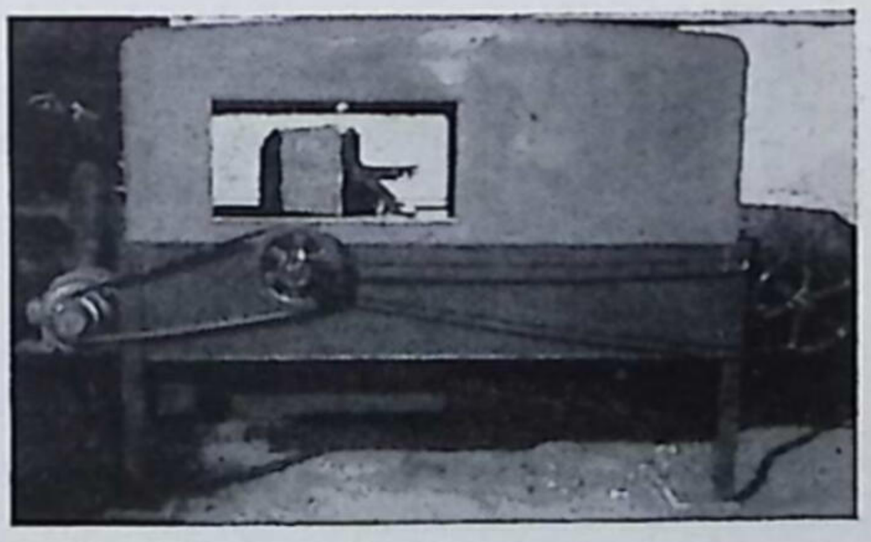
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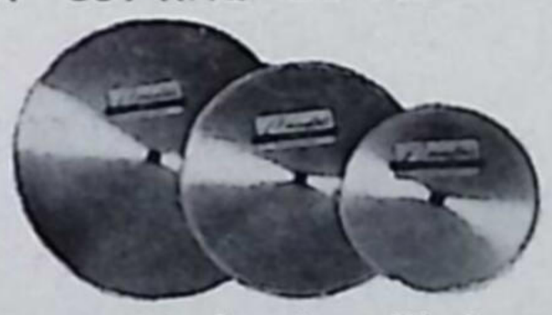
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20″	66.30	44.20	33.95
24″	79.30	55.90	43.75
30″	127.25	106.95	-
36″	192.20	159.95	-

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◆ Beginners Page

We were cut short in discussing polishing agents in the last issue. We had mentioned cerium oxide (better for most materials) being freely available but that tin oxide was again in short supply. The price of tin oxide, when available, has more than doubled in five years so that there is now little saving in buying it in preference to cerium oxide. Faceters are experimenting with zirconium oxide but our own experience with it for general use has promoted no great enthusiasm.

Several people have written us inquiring about where they can purchase Damascus Ruby Powder, mentioned frequently as an agent for hard-to-polish stones. We know of no dealer handling it but they all tell us that Linde A powder (costing about ten times as much as tin oxide) is "just about the same." Inquiry reveals that many faceters are using Linde A powder for nearly every type of faceted gem.

Recently we visited one of the largest processors of jade for the wholesale market. Their cabochons had the best polish we have ever seen on jade. After close questioning they revealed that they were now using Linde A powder mixed "with a little oxalic acid" but they wouldn't reveal the proportions. Here is one of the best tips we have given since we first revealed the merits of cerium oxide about five years ago in DESERT MAGAZINE.

In applying any polishing agent to any polishing wheel most amateurs use far too much. The best way to use it is to have an old discarded saucer and a discarded clean rag rolled into a tight roll with a rubber band over the end. Place some polishing agent in the dish and add enough clean water to make a runny paste. Wet the wheel with a clean cloth and water *first* and then apply the polishing agent by dipping the rolled rag into the paste and applying it sparingly. As the polishing wheel becomes charged with the agent less material needs to be applied in the future. The saucer and contents should be kept in a cigar box that is labelled and a separate outfit made for each agent you intend using.

As for the polishing wheels you can take your choice but 999 cabochons out of every 1000 anyone will ever polish can be done very well on a hard felt buff. Some things polish a little easier and better on a felt buff (jade for instance) but a beginner particularly doesn't have to have a leather buff to get by. The buff should always be kept covered with a paper sack or a plastic refrigerator bowl cover and it should never be removed from the covering until the hands and the gem to be polished are washed. All you have to do to achieve permanent grief is to get some grit into the buff and then you will have scratches in your gems.

We recently sold our old buff to a beginner and now it scratches his gems. "Did you wash the gems before polishing them," we asked? "No, I didn't," he replied. "I read about doing that but I didn't believe it." One of the best faceters we know recently showed us a large heart he had faceted from smoky quartz. The table was as scratched as a dog with ticks and we couldn't believe it. "I scratched the wax off with my knife," he explained, and added "you can't scratch quartz with steel — unless it has some carborondum on the blade." In spite of this experience we made the same error a few days later so now we have a new knife used *only* for wax scraping. Dr. Willems (author of GEM CUTTING) not the polishing buff but he changes his apron! *A WORD TO THE WISE IS SUFFICIENT.*

But for the beginner we offer the advice that all you need when starting is half a pound of tin oxide or cerium oxide and one felt wheel kept scrupulously clean. You will then be set up for perfect polishing on most of the gems you undertake IF—you have plenty of patience and you are not too easily satisfied.

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Amazon Stone
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Gem quality $1.25 per pound

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◆ *Gem News*

A new large deposit of nephrite (jade) in central California has been confirmed by several national authorities. In our next issue we hope to have pictures of the location. It is reported that Donal Hord has a large block of it for another jade carving. We have examined this material and it appears to be an unusual nephrite, dark green and shot through with fine white veining. It does not appear suitable for jewelry mountings as it is too dark but it holds great interest for use in ornamental objects. The owner of the deposit is looking for a responsible international distributor.

* * *

One of the most popular articles we ever printed was Anderson's "Agate And Silver Table Ware" in the October 1947 issue. It sold out the issue. Although originally sold at a quarter we hereby present a standing offer to double the price (50c) for any issue returned to us in saleable condition. We need it to fill out volume One for which there is a wide demand. (We have Volume One Bound for $3.00)

William T. Baxter, author of "Jewelry, Gem Cutting and Metalcraft," originally told us of Anderson's work in Baltimore. (Mr. Anderson will have another article soon). Baxter made eight pieces himself after the article appeared. Recently a friend dropped in to see him to show him some rough opal, became enthusiastic about the tableware, "borrowed" it and entered it in the Eleventh Annual Metropolitan State Art Contest held in Washington under the auspices of the American Artists' Professional League. The spotted Montana agate and sterling silver pieces were awarded First Prize in the Jewelry Division. Baxter didn't know about it until he was told to come down to the Smithsonian Institution and collect his prize money. The method of making the tableware will appear in the next revised edition of Baxter's fine book.

Blue Sapphire Large as a Cup Found in Australia

News was reported from Brisbane on Oct. 7th that a blue sapphire, claimed to be the biggest in the world, had been found near

Emerald, Central Queensland, by Mrs. Roy McKinney, a miners' wife.

The sapphire weighs 1958 carats and is as big as a coffee cup.

Mrs. McKinney was picnicking with friends when she found the stone on the surface about 300 yards from where the famous Black Star sapphire was found last May. The Black Star weighed 1156 carats and was sold in New York for $300,800.

Mrs. McKinney sold the stone to the manager of a near-by claim for an undisclosed amount.

(Ed. Note: The Black Star was cut by Los Angeles lapidaries (Kazanjian Bros.) and we expect to publish a complete story about it soon. We are now engaged in cutting a fragment of the same Star that is now the largest in the world. And we know where more can be had; will divulge the information to subscribers only upon inquiry.)

New York Lapidary Society Forming

If any of our readers are interested in forming a lapidary society in New York City please send your name and address to Mr. V. Lachowich of the Regent Lapidary Company at 511 E. 12th St., New York City. He will attempt to organize a society in New York if sufficient people are interested. Mr. Lachowich says he will give beginners' instructions to the group as well as provide many programs on advanced gem cutting by well known professional cutters in the area.

Two Dealers Die

Two longtime and prominent dealers have passed from among us. "Cowboy Lemley" died on September 19th at his Las Cruces, N. M. home and Henry Luoma, "the bedside lapidary" died after a long illness at his home in Ahmeek, Mich. Violet Luoma (Mrs. Henry) will carry on Henry's business as she has been doing during the last year when Henry was so critically ill. The November issue of MINERAL NOTES AND NEWS carries a biography of Cowboy Lemley.

Neither of these men were personally known to us except that Henry Luoma was a frequent correspondent and we followed his brave efforts to establish a business from a bed of pain long before we started the JOURNAL. He was an advertiser from the beginning and we hope that our readers will continue to patronize his KEWEENAW AGATE SHOP as in the past.

* * *

The Fall issue of GEMS AND GEMOLOGY will carry a special feature on jade by Calvin N. Joyner, B.E. under the title "Behind the Scenes in Jade Street." At this writing THUNDER is still on exhibit at the Ambassador hotel and we recently examined it again in the company of Dr. J. Daniel Willems, author of GEM CUTTING, and Richard Liddicoat of the Gemological Institute. The Institute is now publishing an interesting little newspaper for its students called THE LOUPE.

* * *

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White Idaho Plume agate, slabs only. Priced from 25c to 50c per sq. inch.

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of Mineralogical Societies will take place at Sacramento on June 24th, 25th and 26th, 1949.

* * *

In the August, 1948 issue of the JOURNAL we offered $50 in cash prizes for the best cameos submitted to us by May 1st, 1949 (see page 162 in that issue). To date only a half dozen folks have registered in the contest and we said at the time that it would be "no contest" if fewer than ten persons registered. If you are intending to go after this money we suggest that you register your name with us so that we know where we stand. The cameos will remain your property, of course. People haven't been cutting cameos because they didn't know where to get cutting material and tools but these are steadily advertised now in these pages and that is no longer an excuse. Our first issue (April, 1947, still available for 50c) gives complete instructions.

* * *

On Page 176 of the August, 1948 issue of the JOURNAL we told the story of how R. H. Blanchard of Madras, Oregon lost his faithful dog while on the way to the Denver convention by jeep. It was no surprise to us that we received many letters about the dog because there are more people interested in dogs than in gemstones. We are happy to report that Mr. Blanchard advises that the dog returned home but he gave us no details.

* * *

A good friend of ours sent a large carved elephant to each of two candidates for national office in the recent election. The elephants were "running elephants," difficult to carve because only two feet are on the ground and they present a problem in balance. He promised other elephants after the election "with all four feet on the ground." Reports have it that he is now busy carving elephants flat on their backs.

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AGATE and JADE

Modern and Antique styles in a variety of NEW PENDANT MOUNTS
24K Triple Gold Plate. Will wear a lifetime! Also Sterling Silver pendants with chains in several m.m. stone sizes. Sterling Silver rings in many styles and stone sizes.

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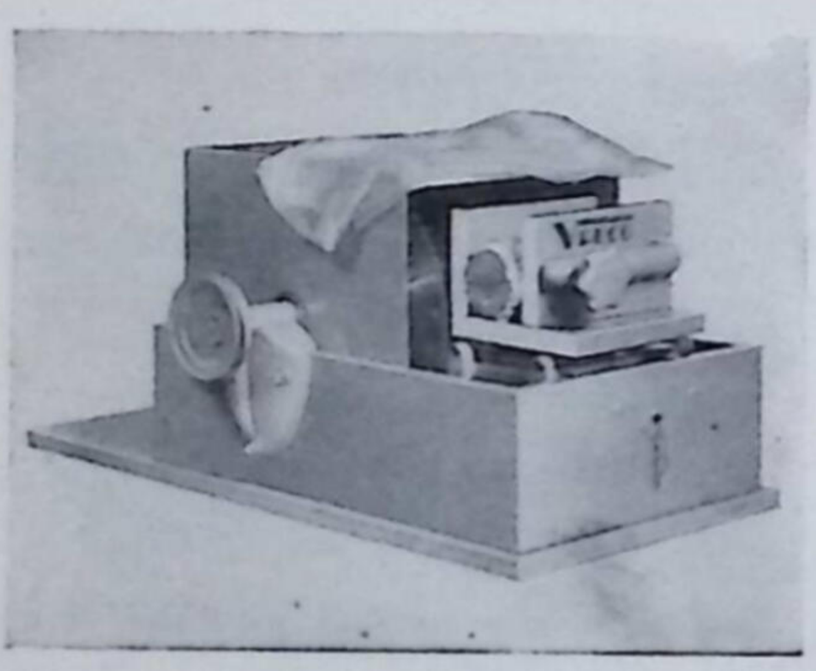
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(All enamels are the correct and accepted colors).

Emblems postpaid. Add 20% excise tax plus 2½% sales tax on California purchases.

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◆ News of the Societies

LOS ANGELES LAPIDARY SOC. held its annual gem picnic at Oak Grove, Pasadena on October 24th. There were 164 cars present which indicated a big uncounted crowd when it is estimated that there was an average of three passengers per car. There were many novel features and several hundred dollars worth of beautiful donated prizes on which the society cleared a reported and estimated $600. Neighboring societies were invited and were all represented.

At its regular meeting on November 1st everyone present faceted a potato. This meeting (chairmanned by the Editor) presented Dr. J. Daniel Willems of Chicago, author of the new book GEM CUTTING, in a lecture on his now famed method of learning the rudiments of faceting by cutting potatoes. For pictures of the meeting see pages 285-286. 15 silver dollars were donated by the Editor for the best five potatoes and the winners all generously re-donated their money to the Permanent Fund of the Society, being accumulated for construction of their own quarters. First winner, Rolland E. Willis, former President, cut a sweet potato (they cut better because they are not so juicy) while Thomas Daniel, Chairman of The Faceteers, cut a large onion for "atmosphere." Other "gems" cut included a "rutile" from beet*root* and a large "citrine" from a turnip. Diagrams of the various steps were drawn on a blackboard by the Editor while Dr. Willems lectured about them.

This program is highly recommended to other societies for it reveals the simple problems of faceting, which all lapidaries should know even if they are not intending to do faceting. Many other societies had members in attendance to swell the crowd to a record of more than 200. There were many beautiful displays of faceted material which included a 10 carat brilliant of the new synthetic rutile, cut by Ray Merz, the most beautiful gem the Editor has ever seen.

The Society's annual Christmas party will be held on December 6th. This will be a closed meeting for society members only.

* * *

EAST BAY MINERAL SOC. (Oakland, Calif.) held a LAPIDARY NIGHT on October 21st which was one of the largest meetings they have ever held. In addition to a display of members' lapidary work done during the past year there were three talks by members on polishing phases. "Polishing Is Abrasion" said Mr. La Rue, expert on flats, while Mr. Porter, a faceter, said "Polishing Is Molecular Flow." Mr. Stone (what a name for a lapidary!) capped the evening with his talk on "Polishing Is FUN." Messrs. Henley and Higson discussed the fallacy of wasting time and effort on poor material, even for practice, when so much GOOD inexpensive material is available. The society had a very colorful exhibit at the California State Fair.

* * *

SNOHOMISH COUNTY MINERAL SOC. (Everett, Wash.) reports in its bulletin, PEBBLES, about the fine Bozeman convention of the Northwest Federation. One of the best things we've seen in a society bulletin is the reported sign the members saw posted at the entrance to the Anaconda Smelter; evidently written by a wise old Swede:

Ve get so soon ol
Yet so late schmart.

* * *

FEATHER RIVER GEM & MINERAL SOC. (Oroville, Calif.) resumed its meetings on October 14th. The Editor has been made an honorary member of this society which is very gratifying and the honor is received with due appreciation.

* * *

DONA ANA COUNTY ROCKHOUND CLUB (Las Cruces, N.M.) had a gem and mineral exhibit at the Lions Club Cotton Carnival in October. It created wide interest.

* * *

SEQUOIA MINERAL SOC. (Fresno, Calif.) had a gem exhibit at the Fresno District Fair. The FRESNO BEE carried a fine article (illustrated) on gem cutting by Merrill Chamberlain.

* * *

HOLLYWOOD LAPIDARY SOC. (Calif.) held a most successful show on October 16 & 17. The exhibits were beautifully arranged and we have heard many favorable comments on this first show. The Editor regretfully could not attend the fine show of this society which he organized because he had to attend the opening of the new DESERT MAGAZINE plant at PALM DESERT as he has been on the staff for nearly 8 years. The show was chairmanned by Walter Shirey and the mahogany cases were loaned by the Los Angeles Lapidary Soc.

This society recently held a Hospitalized Veterans' Night during which members brought some of their surplus cabochons to be donated to veterans' hospitals where disabled men are being taught jewelry making but have no facilities for grinding gems for setting in their finished pieces. This is a very worthy purpose set in motion by the society's President, Tom Virgin, who spent two years in veterans' hospitals himself. It is with chagrin that we report almost no response to a similar plea we made on Page 238 of the October '48 JOURNAL. This society is the first to adopt the suggestion: we hope others will follow.

* * *

MARQUETTE GEOLOGISTS ASSN. (Chicago) held its annual auction on Nov. 6th. The editor of their BULLETINA, Arch Nisbet, is running a series of articles on faceting for beginners. Is your society swapping bulletins with them? You *should.*

* * *

WISCONSIN GEOLOGICAL SOC. (Milwaukee) had an attendance of more than 100 at its Oct. meeting. Edwin E. Olsen, Milwaukee jeweler, addressed the Nov. meeting on "Gemstones of Wisconsin."

* * *

ORANGE BELT MINEROLOGICAL SOC. (San Bernardino, Calif.) held its first fall

Books on Jewelry Making For Christmas Giving

If you have a friend or member of the family interested in jewelry craft, select one or more books from the following list for a Christmas gift that will delight their hearts.

JEWELRY, GEM CUTTING AND METALCRAFT *by William T. Baxter*—$3.00

A modern craft book that has run through several editions. Complete information for the beginner and advanced craftsman on jewelry making, metal working and gem cutting. 278 pages with 170 illustrations.

SMALL JEWELRY *by F. R. Smith*—$1.50

A smaller but very useful book of especial value to the beginner. Contains 32 plates with 282 small sketches of technique and design.

HAND MADE JEWELRY *by Louis Weiner*—$2.75

The outstanding feature of this book is the thoroughness with which it covers the field of hand-made jewelry. It is a complete source book, fully illustrated, of all the basic facts necessary to know in order to make a wide variety of ornamental and professionally-finished pieces of jewelry by hand. Careful and thorough instructions guide the amateur craftsman from the beginning of any number of projects, through the intricate processes of using the jeweler's saw, transferring designs on metal, soldering, pickling and appealing. Several techniques are offered for each job, providing a choice from which the technique best suited to the individual can be made.

The art of modeling in metal, along with the technique of bringing a design out of a metal surface into low or bas-relief, is covered in full. The use of all tools is explained in great detail to assure the making of skillfully-finished projects.

Complete directions are given for stone setting and for making a variety of silver wire chain bracelets, pins and necklaces. Full information on etching and enameling is also included.

JEWELRY AND ENAMELING *by Greta Pack*—$3.50

A "working" book on the subject. Divided between basic principles and technical data. All of the steps are well illustrated by drawings and photos. Floor plan for setting up a shop. The tables alone are worth the price of the book.

JEWELRY MAKING AND DESIGN *by Augustus F. Rose and Antonio Cirino*—$8.95

This is a re-issue of one of the older books on jewelry making. It is the largest book available on the subject and contains 409 pages. 6 x 9" with 1300 illustrated examples of methods, etc. Particularly valuable for its information on design.

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Lapidary Journal

P.O. Box 1228 **Hollywood 28, Calif.**

meeting on Oct. 5th showing the slides of the Harvard University collection of minerals. Its usual beautiful and interesting annual gem and mineral show was held on November 6th and 7th as this issue went to press.

* * *

POMONA VALLEY MINERAL CLUB (Pomona, Calif.) had a very interesting exhibit at the Los Angeles County Fair from Sept. 17 through Oct. 3 which created wide interest. The exhibit included cabochons, faceted stones and a library of gem and mineral books. Genevra Daw spoke on "Handcraft Stone Setting" at the Oct. meeting.

* * *

SAN JOSE LAPIDARY SOC. (Calif.) heard Francis J. Sperisen of San Francisco give a talk at its Oct. meeting on inclusions and characteristics of gemstones.

* * *

CLEVELAND LAPIDARY SOCIETY held an auction and swap party at the Case Institute of Technology on November 2nd. This society seems to have had a "rebirth" during recent months and is going ahead by leaps and bounds. It will present its first showing of the members' lapidary work on the 3rd floor of the Cleveland Library from December 18th through January 15th. Howard Reid gave a talk on Jewelry Design at the October meeting. He used blackboard illustration and sketches of his own designs. The Editor was recently complimented with an honorary membership in this society for which he is indeed grateful. We hope that all our subscribers in the Cleveland area will attend for we have many subscribers there who are not members of the CLEVELAND LAPIDARY SOC. They should be, for obviously they wouldn't be subscribers if they were not interested in the lapidary art. Next to the San Diego Mineral & Gem Soc. (in which we have practically 100% support) the Cleveland Society is our most loyal subscriber list being almost 100% subscribers, according to a recent check. We hope to visit and talk to these folks some day. The society meets on the 1st Tuesday in the Minerology Bldg. of Case Institute at 7:30 P.M. and all persons interested in gem cutting and silver craft are welcome to attend.

Fine Rough Gem Materials

Amethyst	Garnets
Azurite	Hematite
Aventurine	Labradorite
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Amber	Malachite
Amazonite	Onyx
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One Blue Jadeite Cabochon.

Will purchase or trade rough and cut stones of all kinds

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SAN DIEGO MINERAL & GEM SOC. (Calif.) held its 11th annual show on Oct. 16th & 17th. It was probably the best show any individual society has ever put on, with the possible exception of the earlier shows of the Los Angeles Lapidary Soc. An eight-page printed program gave some of the details that had to be taken care of by some members of the society. The front page gave the floor plan of the hall and the list of dealers and manufacturers who reserved space. Advertising space was sold in this program to help pay the $1,000 or more that the show cost. Ralph Saulsbury, the President, and Robt. Rowland, publicity chairman, probably did most of the worrying but every member of the group did his share in bringing about the success of the show.

In the program the publicity chairman said: "This is the culmination of experiences in ten previous shows: the selection of good suggestions offered, or methods used, by Lelande Quick of the *Lapidary Journal*, by the California Federation of Mineralogical Societies in its annual conventions, and by Dr. Richard Pearl, who put on the first convention for the American Federation.

"It was accomplished through the pooling of individual abilities and talents of our numerous members who have been called upon for numerous details and they have cooperated whole-heartedly to get the show under way.

"The materials displayed indicated the quality which our collectors seek, and the high degree of workmanship our lapidaries attain. Much information was given about minerals, geology and prospecting on the Mineral side of the hall, and every phase of the lapidary art, plus jewelry making was demonstrated on the Gem side."

Down the center of the room were show cases containing specimens and gems from members' collections: Mineral demonstrations were carried on down the left side and lapidary demonstrations on the right side of the hall. Prospecting for gold and other metals was also ably demonstrated by members, as well as locating gem pockets, uranium minerals and detecting radio-activity with the Geiger counter. "Big Bertha," a 36-inch saw, a complete home made lapidary bench, various sanders and laps were on display.

The Editor attended for a few hours of a busy weekend and was highly impressed at the efficient running of this large show, attended by almost 7,000 registered guests.

* * *

SAN FERNANDO VALLEY MINERAL & GEM SOC. (San Fernando. Calif.) held their annual show at North Hollywood, Calif., October 9 and 10 which was attended by a large crowd.

Each display case was a work of art, arranged in such a manner that the visitor was immediately impressed. Cases were filled with cut and polished gem material gathered from all parts of the world. Some cases contained beautiful pieces of jewelry made by members of the society. From these the Editor selected an unusual piece to appear on the next *Journal* cover.

An interesting demonstration was shown of how gem material is cut, polished and mounted into different types of jewelry, and how

diamonds and other stones are faceted.

Prior to the show, the North Hollywood Chamber of Commerce had a display of gems in their window advertising the show, which brought many favorable comments.

* * *

DELVERS GEM & MINERAL SOC. (Downey, Calif.) heard the popular lectures of the Gordons of Long Beach at their October meeting. Lowell spoke on cabochon shaping and Florence on diamonds. October field trip was at Cache Canyon (Horse Canyon) where sagenite agate was collected.

* * *

COLORADO MINERAL SOC. (Denver) held an auction of a GEMLAP outfit and a fine Kunzite specimen at its November meeting. Beginning its 13th year at the Oct. meeting agate jewelry tokens of appreciation were presented to Mary Piper, Harvey Markman, Chester Howard and Richard Pearl.

* * *

MARICOPA LAPIDARY SOC. (Phoenix, Ariz.) heard the Gordons at their November meeting (see item on Delvers Gem & Mineral Soc.). E. P. Matteson addressed the society in Oct. on "Chrysocolla" and certainly no one knows more about it than old (?) Matt.

* * *

NEBRASKA MINERALOGY & GEM CLUB (Omaha) is building its own lapidary outfit. Members are contributing the labor and an auction of gem materials will be held for funds for needed parts.

* * *

ALBUQUERQUE GEM & MINERAL SOC. (N. M.) held its 3rd annual exhibition at the New Mexico State Fair. The 1949 convention of the Rocky Mountain Federation will be held in Albuquerque on Aug. 25, 26 and 27, 1949.

* * *

OKLAHOMA MINERAL & GEM SOC. (Oklahoma City) recently had a fine article on turquoise in its bulletin, the *Sooner Rockologist.* The article was written by club President Margaret Sprankle, who will hae a fine article in the next *Journal.*

* * *

CHICAGO ROCK & MINERALS SOC. heard Langdon Longwell in a talk on agates at its October meeting. The various types and structures of agates were shown in colored slides. The annual rock auction took place at the November meeting.

* * *

AKRON MINERALOGICAL SOC. (Ohio) has resumed fall meetings. Subscribers in the area should get in touch with Mrs. C. R. Violette, 392 Reed St.

* * *

JUNIOR ROCKHOUNDS (Prescott, Ariz.) was recently offered a dummy by the J. C. Penney Co. for use in their show. This group is unique in two directions—they are the only kid organization and the only society that has to get a dummy from outside.

* * *

INDEPENDENCE GEM & MINERAL SOC. (Mo.) recently held a meeting at the home of Dr. Ralph Mueller in Kansas City. The Los Angeles Lapidary Soc. may be reversing things by making carats out of potatoes but a man from their town did something more notable—he made the polls go to the dogs.

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Australian Rough Fire Opal. Fine Quality — Clean Cutting Material — Minimum of Matrix. Beautiful red — green & blue colors. Must be seen to be appreciated. Priced from $50.00 to $80.00 per oz. Also sold by the carat. $5—$10 or $15.00 deposit brings fine selection for your examination. No obligation unless completely satisfied.

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Carnelian Plume Slabs ..... $1.00 sq. in.
Black and Red Plume Variegated Slabs, $ .75 sq. in.
Moss Agate, rough, (same vein) in reds and dark, ... $1.50 lb.
Moss Agate, excellent rough vug material in red and yellow .... $3.00 lb.
Variegated Vein Agate, highly colored, $1.00 lb.
Wood Casts, Banded, some dendritic, $1.50 lb.
Cristobalites in Obsidian .....25c per ball
One to three balls in each specimen. Rare!
Plume, best quality in small chunks, $5.00 lb.

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Plume Slabs on Approval with $5.00 deposit and reference.

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Here is your chance for excellent cutting material at a price and terms you can't afford to pass up. Yes, we are so sure you will like this material that we offer it *on approval only—In other words—"See before you buy."*

Sold as sawed slabs only. Priced from 25c to $5.00 per slab. Send for an approval assortment, select what you wish and return balance with remittance.

ROBERT O. BUCK

P.O. Box 218 Valley Springs, Calif.

KERN COUNTY MINERAL SOC. (Bakersfield, Calif., paid a visit in Oct. to the Trona Hobby Show. Kathleen Godby was given a blue ribbon for polished flats.

* * *

TACOMA AGATE CLUB (Wash.) in cooperation with Tenino Rock Cruisers had 45' of display cases at the Washington State Fair. Demonstrations of rock cutting were given constantly for 9 days by members and created wide interest. Ninety members attended their 8th anniversary turkey dinner on Nov. 4th.

* * *

◆ New Societies

NEW YORK LAPIDARY SOC. is being formed by V. Lachowich of the Regent Lapidary Co. of 511 E. 12th St., New York 9. We urge all of our subscribers in the greater New York area to register their names with Mr. Lachowich so that they can be notified of meetings. We hope that this becomes a successful venture so that other societies in Brooklyn, Jersey City, Westchester County, Bronx, etc., will grow out of it in time. Notices have been posted in the American Museum of Natural History and in New York and Columbia Universities, both of which now offer courses in gemology.

* * *

NEWARK LAPIDARY SOC. (New Jersey) will hold its organization meeting as this issue is at press. Subscribers in the North Jersey area are urged to communicate with Louis Andl, 107 Melville Pl., Irvington 11, N. J., so that they can be notified of meetings.

* * *

PASADENA LAPIDARY SOC. (Calif.) got off to a big start on Oct. 13th when the Editor, assisted by members of the Los Angeles Lapidary Soc., chairmanned an organization meeting in the Pasadena Library. 108 persons present indicated their desire to join and an organization committee was appointed by the Chairman. They held two subsequent meetings and on November 10th the Editor again presided as chairman at which time the following officers were elected: President, Jessie Chittenden; Vice President, John Whatley; Secretary, Clarice Bishop; Treasurer, John Quinn. Interested persons should communicate with Jessie Chittenden at 401 Punahou, Altadena, Calif.

* * *

EAST LOS ANGELES LAPIDARY SOC. (tentative name) will probably be the name of a new society to be formed in Dec. in East Los Angeles County for interested amateurs in the San Gabriel-Alhambra-El Monte districts by the Editor. We have many names on file now but if you are interested please register and we shall notify you of the time and place of the organization meeting.

The Estwing Mineral Pick. A gift to delight any rockhound's heart. See the middle spread of

GORDON'S

The Lapidary Journal

CLASSIFIED ADS

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TURQUOISE from Old Mexico—mine run $6.00 per pound. One pound limit per order. Green and Red Jasper, Palmwood—25c per pound. Special price *this issue only* on Houser Bed Nodules and Death Valley Nodules at 10 pounds for $1.50. Please include postage and California residents add 2½% sales tax. ERWIN TONNE, 517 Balboa St., Costa Mesa, Calif.

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AUSTRALIAN OPALS. Fine Cabinet Specimens, or Cutting Opal. Good trial assortment, $15.00. LISTS FREE. Correspondence Invited. NORMAN L. SEWARD "HIGHLANDS," 2 Studley Ave., KEW, Melbourne, Australia.

MONTANA AGATE—Selected stones of gem quality. Assorted colored agate and small spots. Six pounds for $7.85 postpaid. B. M. WARD, 702 Woodbury, Miles City, Mont.

THUNDER EGGS—Filled with blue agate. Size of oranges. 25 lbs., $8. 100 lbs., $27. CUTTING MATERIAL in the rough. Assorted mosses, jaspers, woods. Gem quality, 10 lbs., $5. MELVIN L. KATHAN, 11 S. E. 78th Ave., Portland 16. Oregon.

SPECIAL ON MONTANA AGATE for gem cutting. SELECTED STONES—not field run. 6 pounds colored agate and spotted moss—assorted. Postpaid for $8.00. R. L. HARRIS, Miles City, Montana.

SLAB BAG GRABS—Still a few left. (See October ad on Page 273.) Includes limb sections of Washington wood and assorted material suitable for cabs or specimens. Only $1.50 plus postage. Unpolished limb sections 2" - 3" — $1.00 each plus postage. TACOMA LAPIDARY SUPPLY CO., 631 St. Helens Ave., Tacoma 2, Wash.

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(Continued on Next Page)

CLASSIFIED ADS

(Continued from Previous Page)

FRANKLIN, NEW JERSEY. We gather from the many compliments received on the fluorescent collections purchased from us that no overstatement is made in regards to the brilliance of the stones in the collections. As stated before, ALL colors are bright and sparkling. ALL stones are clean—no weathering or stains of any kind. Even without the mineralight they make a beautiful display, the pure white and creamy white calcites blending with the green and brown Willemite and black Franklinite. Try a twenty-five pound collection for ten dollars with our guarantee that not one inch will be non-fluorescent. GARDEN STATE MINERALS, 1034 Bloomfield Street, Hoboken, New Jersey.

SADDLE MOUNTAIN PAPER WEIGHTS—$1.00. Rough mined wood: small pieces in chunks for slicing. Special December and January—15c pound. Merry Christmas! GILBERT MORGAN, Smyrna, Wash.

NEW MEXICO SPECIAL—Send $1.00 for an assortment of FIFTEEN NEW MEXICO MINERALS, 1 to 3″ size, including beautiful agate, petrified wood (several varieties), calcite, lepidolite, jasper, obsidian, pyrite in matrix. Larger specimens 50c per pound. *Satisfaction guaranteed.* SHORT, P. O. Box 57, Los Alamos, New Mexico.

BATEMAN'S DIAMOND SAW SHARPENER. Acts instantly. PREVENTS grooving. SIMPLE to operate. PROLONGS saw life. Price $3.00. Send 10c postage please. Detailed INSTRUCTIONS on each step process. ERNEST S. BATEMAN, 5108 W. Olga St.—A—Seattle 6, Wash.

HANDMADE JEWELRY in gold or sterling silver. We will mount your stones or ours in exquisite settings that are completely handmade. No stamped-out or cast parts whatsoever. Special orders of any description. Reasonable prices. ROBERT SPURGEON, 627 Tasker St., Philadelphia, Pa.

FOR THE DESK—Fine paper weights and bookends. Featuring Fluorescent Turritella Paper weights from Central Texas Fossil Beds. Other specimens from Mexico and Western States. Prices on request. No list. SATISFACTION GUARANTEED. CLAY LEDBETTER, 2126 McKenzie Ave., Waco, Texas.

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CUSTOM STONE CUTTING. All types of cabochon work—sawing and drilling. 12 years professional experience. Prices reasonable. Inquiries invited. Complete stock of CUT STONES AND SLABS of the very best that Central Oregon has to offer. HERBERT WM. LAWSON, Box L, Terrebonne, Oregon.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946.

Of LAPIDARY JOURNAL, published Bi-Monthly at Los Angeles, California, for December, 1948.

State of California, County of Los Angeles, ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared Lelande Quick, who, having been duly sworna ccording to law, deposes and says that he is the Editor of the Lapidary Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semiweekly or triweekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), printed on the reverse of this form, to wit:

1. That the names and addresses of the publishers, editor, managing editor, and business managers are:

Publisher, Lelande Quick, 7231½ Santa Monica Blvd., Los Angeles 46, Calif.

Editor, Same.

Managing editor, Same.

Business manager, Same.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

Lapidary Journal, Inc., 7231½ Santa Monica Blvd., Los Angeles 46, Calif.; Lelande Quick, Los Angeles, Calif.; Aletah Quick, Los Angeles, Calif.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and beliaef s to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

LELANDE QUICK

(Signature of editor, publisher, business manager, or owner)

Sworn to and subscribed before me this 4th day of October, 1948.

(Seal) P. M. VIOTTO.

My commission expires September 25, 1950.

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Gems From The Mail Bag

It is almost unbelievable the way the Journal has grown. Of course it isn't really unbelievable for you've given rockhounds just what they want in an attractive, interesting publication. To us some of the interest is in knowing you but that wouldn't hold if the Journal didn't get results. One of these days you will delight us all by expanding to a monthly. A toast to that happy day. *Mrs. Spencer N. Parmelee, East Palo Alto, Calif.*

* * * *

Regarding the late Dr. Kunz: I never met him but I had a finger in sorting his papers that were included in his library left to the U.S. Among other items was a diary which listed all guests with whom he had breakfasted, lunched or dined for a three year period. At the time it was commented that if someone wanted to prepare a picture of a man-about-town circa 1900, this material would be invaluable. Another interesting item was a file of correspondence with certain wealthy Cleveland citizens pertaining to the possible sale to the Cleveland Museum of Natural History of a collection on the order of the Morgan collection. I felt that I knew the late Dr. Kunz. All of these papers were destroyed. *J. W. McBurney, Washington, D. C. (See George Frederick Kunz Memorial Issue of October 1946.)*

* * * *

I don't think enough praise can be said for your most attractive and fascinating publication. It really surprises me the leaps you have taken on the very start. *Dr. Ralph E. Mueller, Kansas City, Mo.*

* * * *

I am immensely pleased with the quality of your magazine; there is nothing in any other publication to touch it. *William D. Loughman, Ventura, Calif.*

* * * *

I am very fond of your magazine and it has been a great help to me. In spite of my difficulties I find a fascination in cutting stones. *Dwight Horton, Watervliet, Mich.*

Although I don't agree with much you publish (and I doubt if you do either) I think your JOURNAL is tops and above all democratic. I have been cutting commercially over twenty years and have "taken" all the magazines with a view of gleaning some pointers and find that you have presented more actual on-the-job dope than any of the others. *L. V. Love, Monte Vista, Colo.*

Ed. note—No, we don't agree with much that we print. If we did it would be but one man's viewpoint. To paraphrase an old saw—"It's difference of opinion that makes interesting gemcutting." Ideas may differ but we do give accurate information.

* * * *

Each new issue of your magazine is a treat and an inspiration. You have performed a great service for lapidaries everywhere. Be assured the JOURNAL and yourself will always occupy honored places in the hall of fame of gem cutters and craftsmen. *Otto M. Ireland, Arlington, Va.*

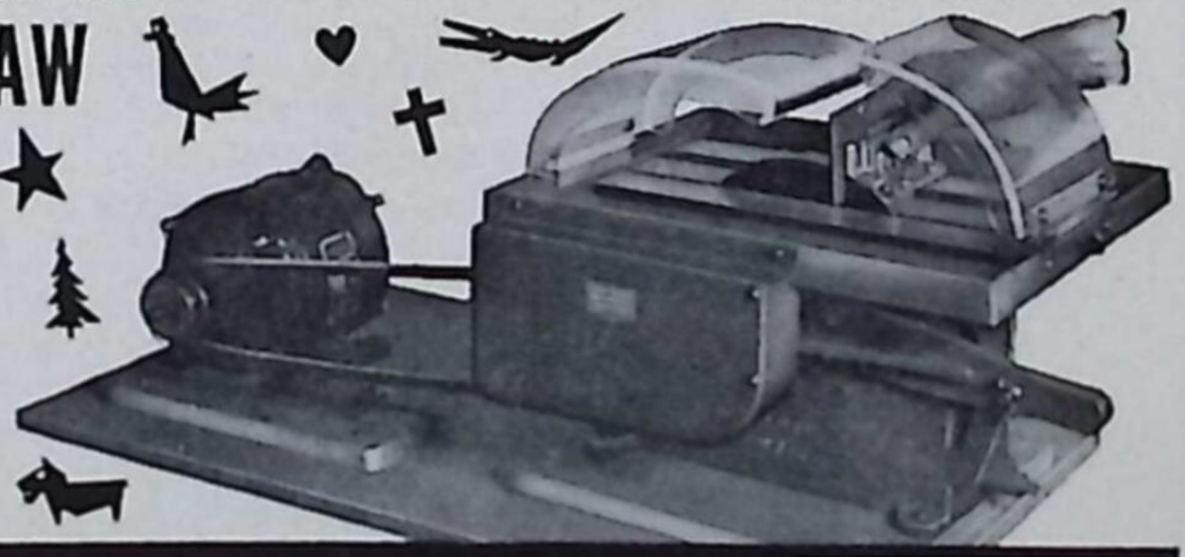


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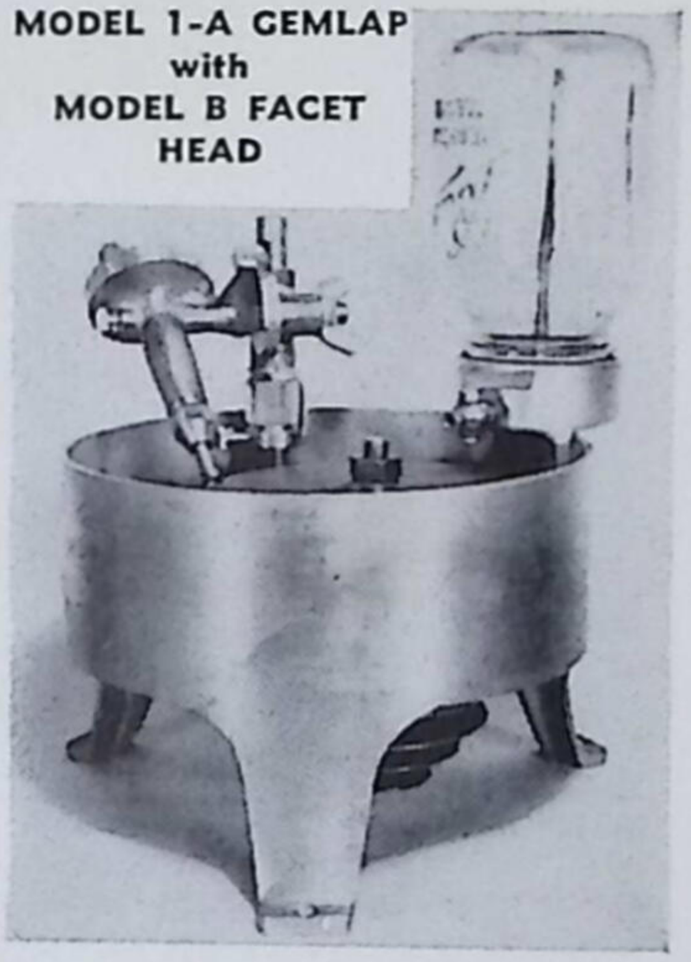
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