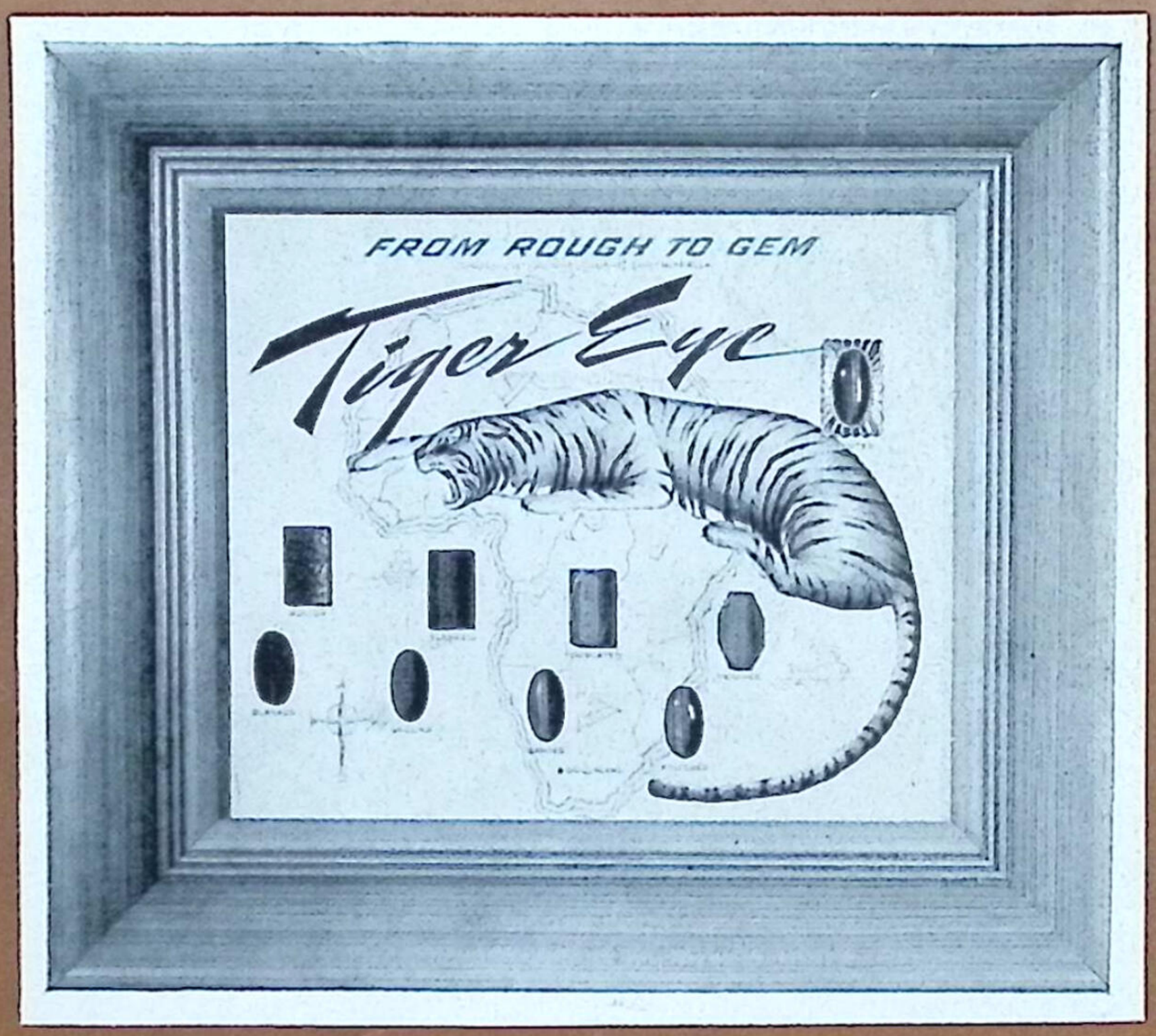
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OCTOBER, 1951

The Lapidary Journal



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By J. L. CUNNINGHAM

A National Magazine for

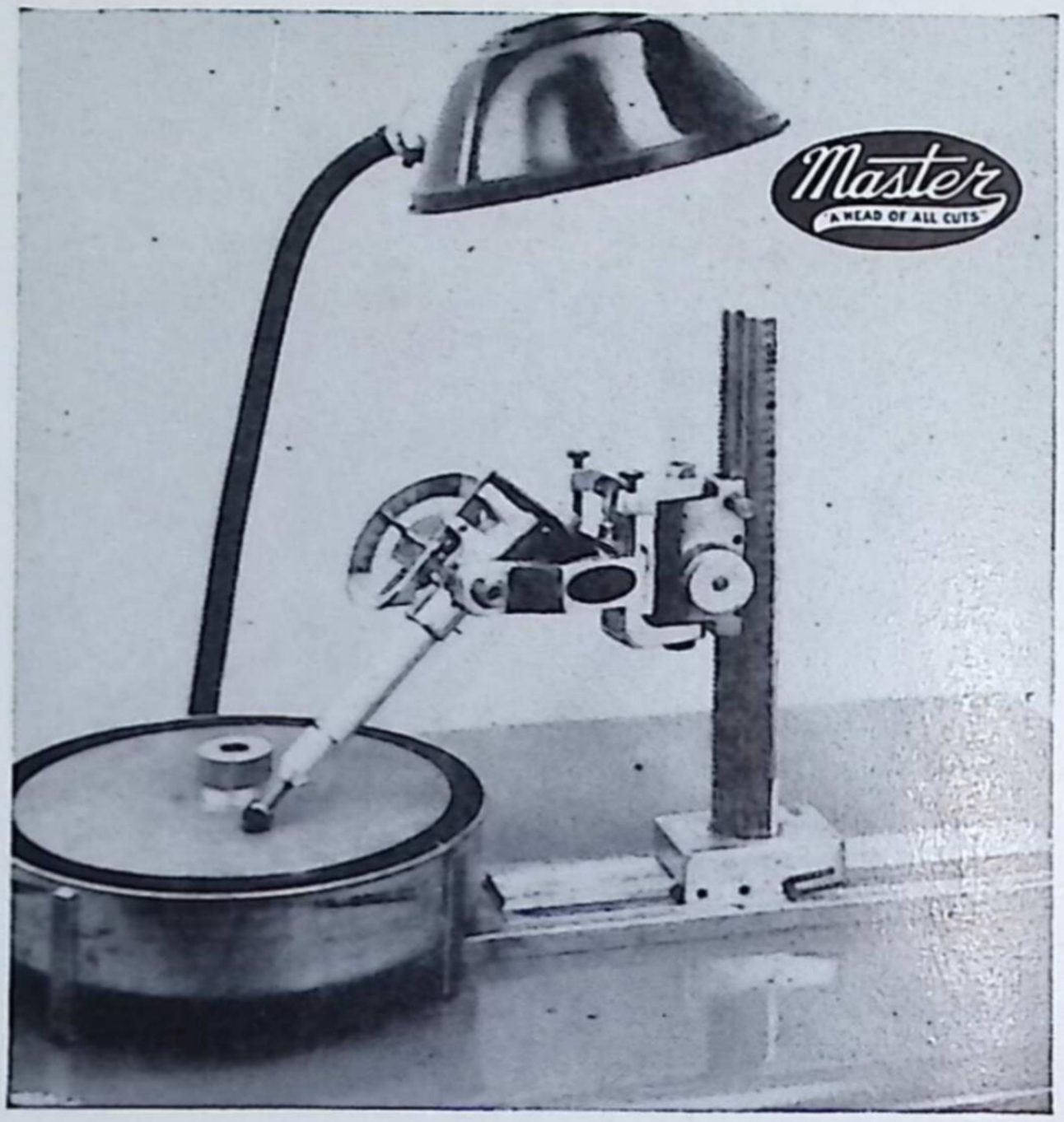
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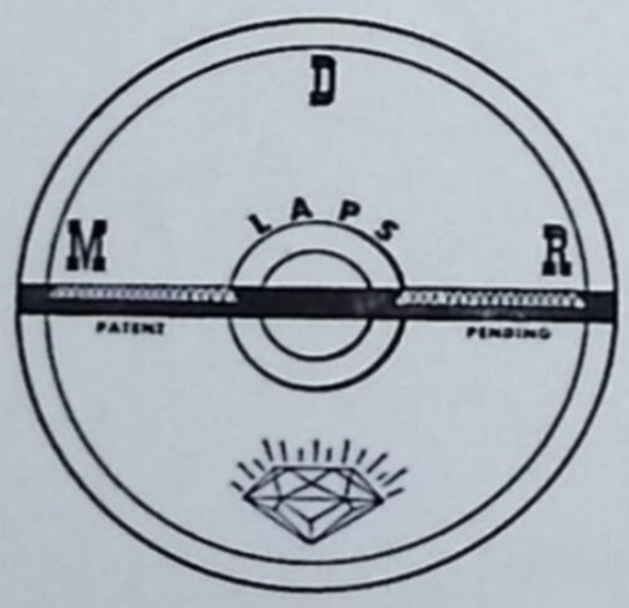


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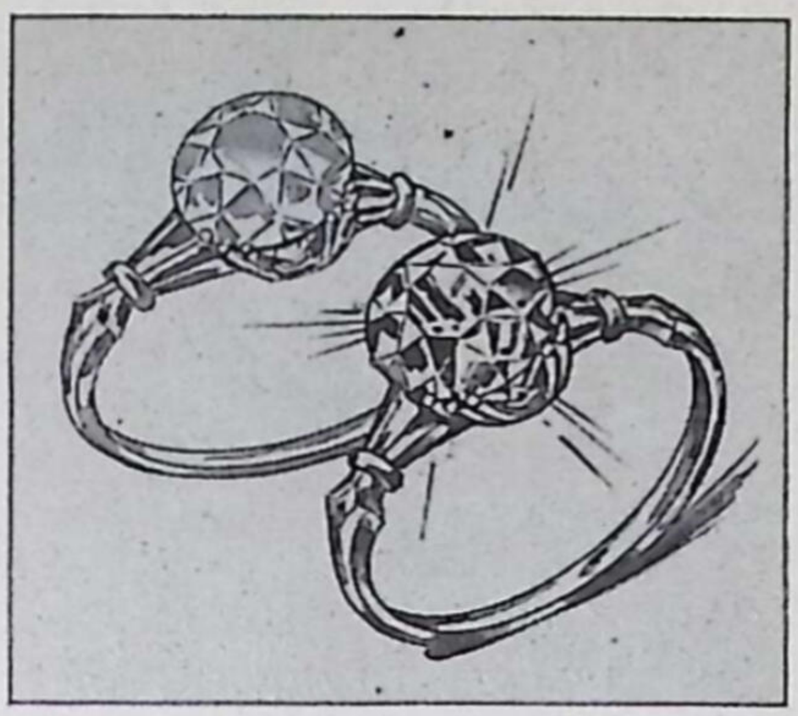
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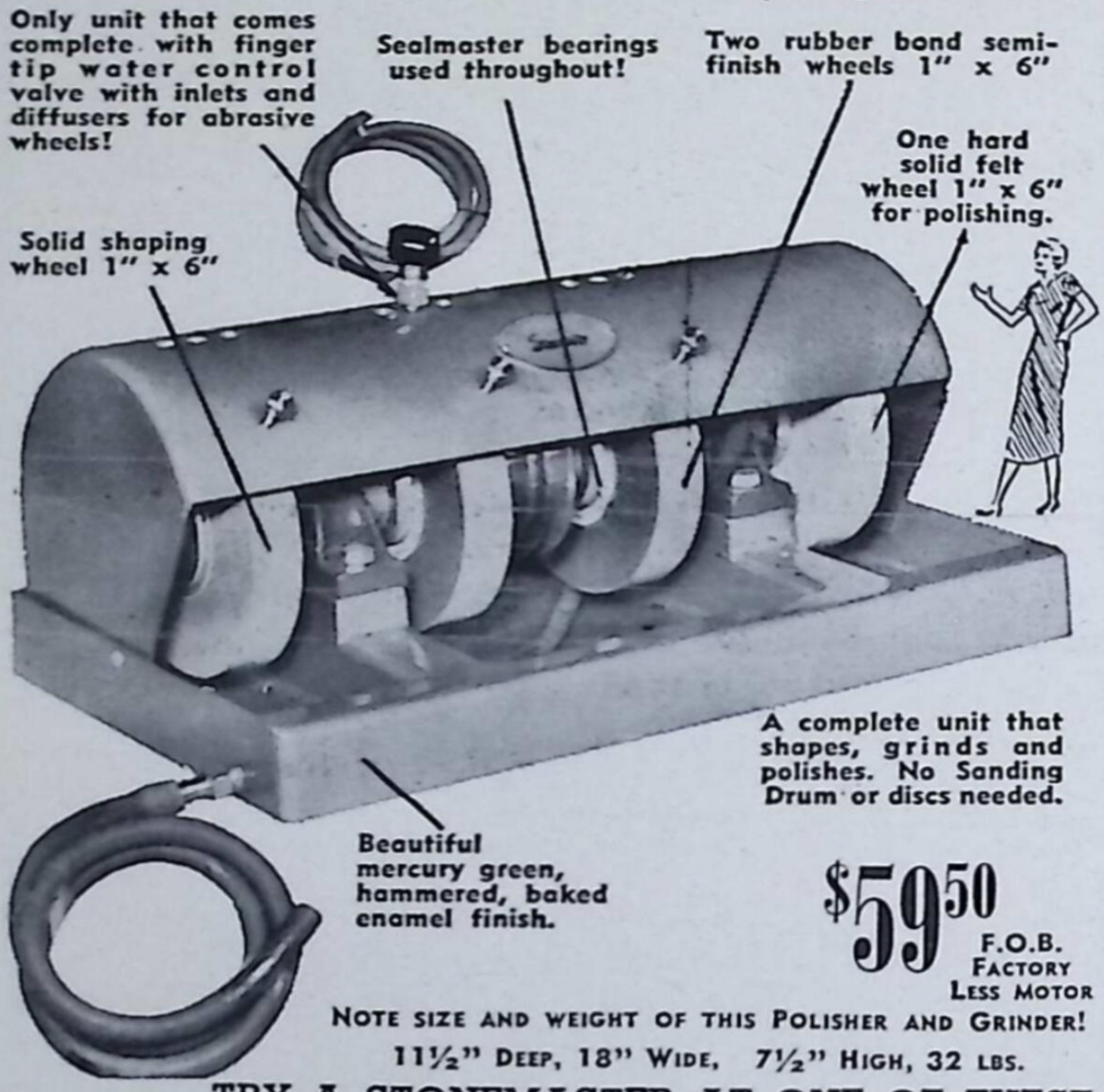
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for
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AND JEWELRY CRAFTSMAN

TWENTY-SIXTH ISSUE

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◆ Diamond Mines of Arkansas

By DOMER L. HOWARD
1229 N. W. 47th Street., Oklahoma City 6, Oklahoma
Editor, *Sooner Rockologist*
Member of *Oklahoma Mineral & Gem Society*

Here is the story of the only diamond mines in North America, told by an author who was there within the last sixty days. Mr. Howard has done a lot of research on the subject and did a lot of digging to get Journal readers the pictures accompanying the article. His story is every bit as fine as the one appearing on the same subject in COLLIER'S MAGAZINE on August 25, 1951.

"Let's go diamond hunting this year!" may become the refrain of thousands of rockhounds when they learn that they now have access to the only locality in North America where diamonds have been found in the matrix material or mother-rock in which they were formed. Stray diamonds, probably from Labrador and the Arctic, thrust southward by ice and water during the glacial age, have been picked up in isolated spots from Nova Scotia to California, but the seventy-odd acres comprising the crater of an ancient and extinct volcano near the town of Murfreesboro, Arkansas has provided the Northern Hemisphere of this world with its only diamond mine. A strange aspect of this American marvel is that so few people know of its existence.

Are They Real?

Many of those who have heard of Arkansas diamonds are disposed to scoff at their genuineness. This misconception probably springs from the fact that the beautiful quartz crystals found near Hot Springs, Arkansas were once faceted and sold by unscrupulous dealers as Arkansas "diamonds." These should not be confused with the genuine diamonds found at Murfreesboro, of which reliable estimates place the total recovery since 1906 at 50,000 stones averaging a quarter carat each. Local enthusiasts say that 100,000 is a more nearly correct figure.

One of the diamonds, the famous Uncle Sam gem, weighed 40.23 carats. Others were so small that 250 of them barely totaled one carat. Ninety percent of the diamonds found have been industrial diamonds—suited for making cutting tools, diamond saws, abrasives or polishing powder, but not of gem quality. These industrial diamonds, however, are among the world's best and some experts claim that they are as much as 28% harder than the diamonds from South Africa, as well as being of more uniform hardness than the alluvial diamonds from Australia. However, G. F. Herbert Smith, President of the Gemmological Association of Great Britain, questions this probability and submits that the apparent difference in hardness may be caused by twinning.

Of the approximate 10% recovered that were of gem quality, many are a brilliant water-white; some are blue-white; some are canary yellow; others have a pink cast and some are mocha, or coffee-colored. One of these mocha gems, faceted and imbedded in lucite in the form of a paper weight, was presented to President Truman on June 11, 1949, by Governor Sid McMath of Arkansas, on behalf of the people of Arkansas. This magnificent gift was made available to the people of Arkansas by Mrs. Ethel P. Wilkinson, majority owner of the former John Huddleston property where the first diamonds were found. The state flag of Arkansas displays a diamond to signify that Arkansas is the only diamond-producing state in the Union.

Location and Accessibility

The town of Murfreesboro is located in Pike County in southwestern Arkansas, an easy one day's drive from New Orleans, Houston, Dallas, Okla-



Diamond hunters on "Field Day"—circa 1908. Part of a holiday group brought to Murfreesboro by special train.

homa City, Kansas City, St. Louis or Memphis.

Located on U. S. 70 Temporary Highway, adequate paved roads make it readily accessible from all directions. The population of Murfreesboro is about 835. It has a small but neat hotel and excellent coffee shop; bank, motion picture theatre, shopping center and County Court House and Post Office. The altitude is about 350 feet above sea level. Lumbering operations convert both pine and hardwood second growth timber and the principal crops raised are cotton, corn, garden produce and fruit. The Nashville and Murfreesboro Railroad, called "The Diamond Line," bears the distinction of being the only railroad in the Northern Hemisphere that has served a diamond mine.

Description of Physical Features

Two and one-half miles southeast of the Court House square in Murfreesboro, via an all-weather gravel road, is the natural storehouse of the Arkansas diamonds. The diamonds occur in an igneous pipe which is the crater of a volcano whose cone is thought to have once formed an island in the ocean that extended from the Gulf of Mexico over this area. This volcano erupted and "blew its top." Internal pressures responsible for the explosion caused the deeply imbedded underlying molten rock, akin to olivine, to thrust up through the concomitant material. Geologists say that this extruded peridotite formation in which the diamonds are found was formed during the Upper Cretaceous era. The formation is identical with the Kimberlite formation in certain diamond producing areas of South Africa. Considerable quantities of the shallow overburden have now been removed and the three formations of intrusive peridotite, volcanic breccia and tuff and fine-grained breccia may be seen. All mining efforts have been confined to sluicing and other surface operations. There are no shafts or underground tunnels. One attempt to sink a shaft was abandoned at 40 feet depth.

History and Legend

Diamonds were first discovered here on August 8, 1906, although a historical

marker in the Court House square at Murfreesboro erroneously gives the date as October, 1906. The discoverer was John Wesley Huddleston, a farmer and owner of the land on which the volcanic cone lies, and on that day he found two diamonds. The first weighed 1⅜ and the other 2⅜ carats. This was a memorable day because, prior to this time, no diamonds had ever been found *in situ* outside of South Africa.

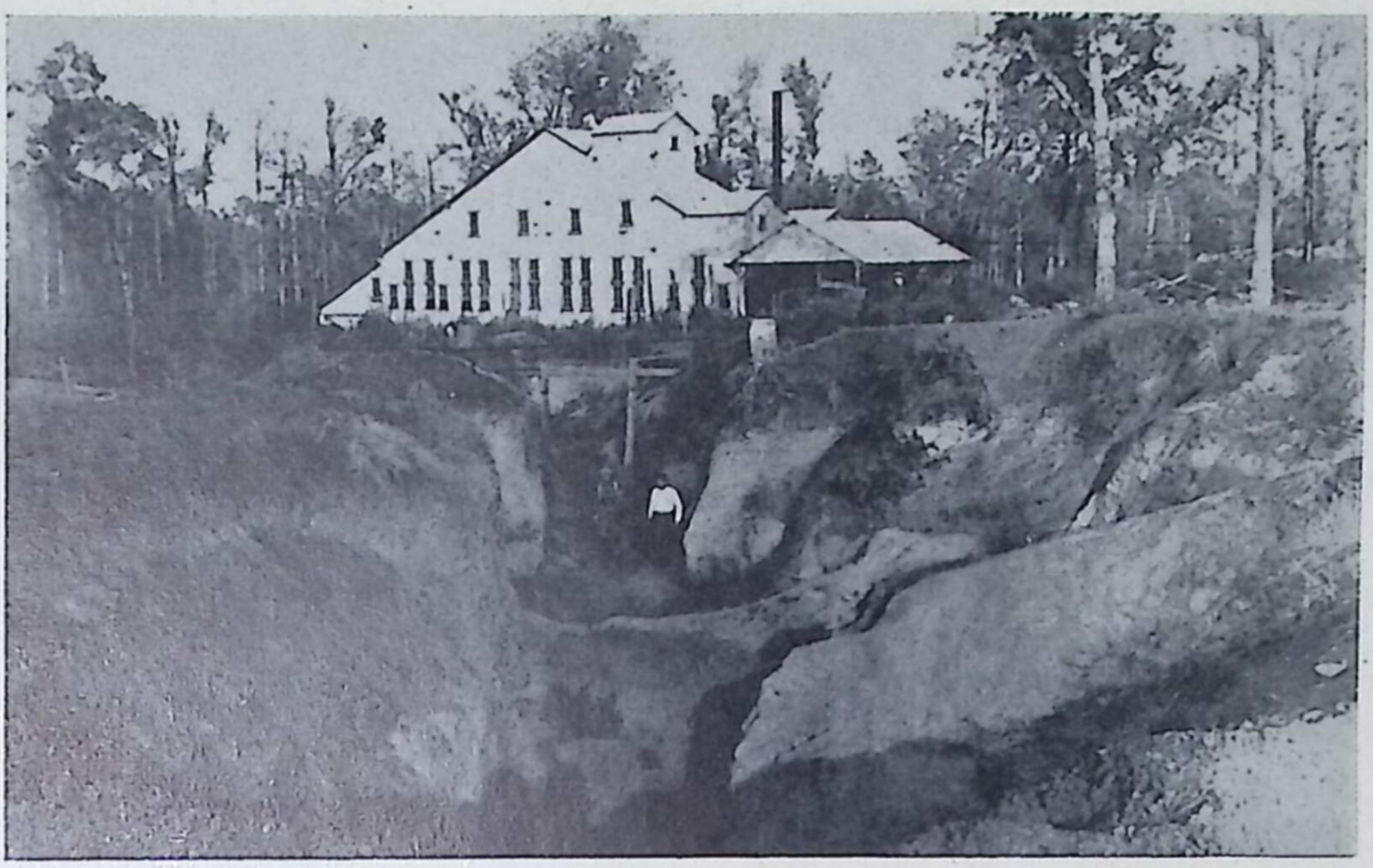
Old timers in the area relate that, a few weeks prior to August 8, 1906, an Englishman appeared at the Huddleston farm and requested permission to prospect the property for diamonds. Mr. Huddleston granted his request. The Englishman admitted that he had spent 25 years in South Africa. For several weeks he diligently searched over Huddleston's property. Then, having found no diamonds, he quit in disgust. This effort alerted Huddleston to the probability of finding diamonds and, as he worked about the farm, he kept a sharp lookout for any glistening object. Not long thereafter, on a sunny morning, following a light shower, he was plowing when he saw something glittering in the sunshine. He picked up the small stone, feeling instinctively and hopefully that it was a diamond. He returned to his house, saddled one of his horses and, clutching the diamond in his hand, rode toward Murfreesboro. Before the highway was reached, he noticed another bright object in the lane. It too, appeared to be a diamond. At Murfreesboro, a friend hitched his team of horses to a surrey (complete with fringe on top) and took Huddleston 12 miles to Delight, where he caught the train for Little Rock. There a jeweler examined the stones and sent them to Mermod, Jaccard and King Jewelry Co., of St. Louis, Mo. They identified them as diamonds of good quality. For further proof of the identity of the stones, they were submitted to the noted gem expert, Dr. George F. Kunz of Tiffany & Co., New York. He confirmed the opinion of the St. Louis jewelers. Thereupon a syndicate, known as the Arkansas Diamond Co., was organized and it purchased Huddleston's property for $36,000.00. During the trial of a law-suit a few years ago, reputed expert witnesses, testifying under oath, appraised the property at from $800,000,000.00 to $1,600,000,000.00.

Huddleston had always expected to find gold on his farm and he spent much time panning the dirt and gravel. Following the sale to the syndicate, he procured some divining rods and continued to search for gold in other nearby places. Local raconteurs assert that he recovered a large quantity of gold from an old Indian mound and that he also located some buried treasure in the town of Arkadelphia. But, like many another suddenly affluent man, Huddleston became the victim of real estate sharks, get-rich-quick schemes and phony oil stock promotions and he died a pauper and was buried in an unmarked grave.

Those who speak of him affectionately refer to him as "Uncle John," but to many he was simply "Diamond John." He is described as a strong, vigorous man of six foot stature who could shatter a 1x6" board with one blow or could knock the bark off a tree with his naked fist. When in the mood, he would pick up a 45 and shoot any wasp that chanced to alight on a nearby window pane in his home. The shattered glass was of no conquence to him. He thought of himself as a wealthy and important man and he spent several thousand dollars for a high-wheeled buggy that was powered with a steam engine. Vowing to make the local train stop at his whim, he drove his steam buggy on the railroad tracks, stopped, leaped out and stood defiantly awaiting the arrival of the approaching train. To his chagrin and financial loss, the train did not stop!

Heart-Break Hill

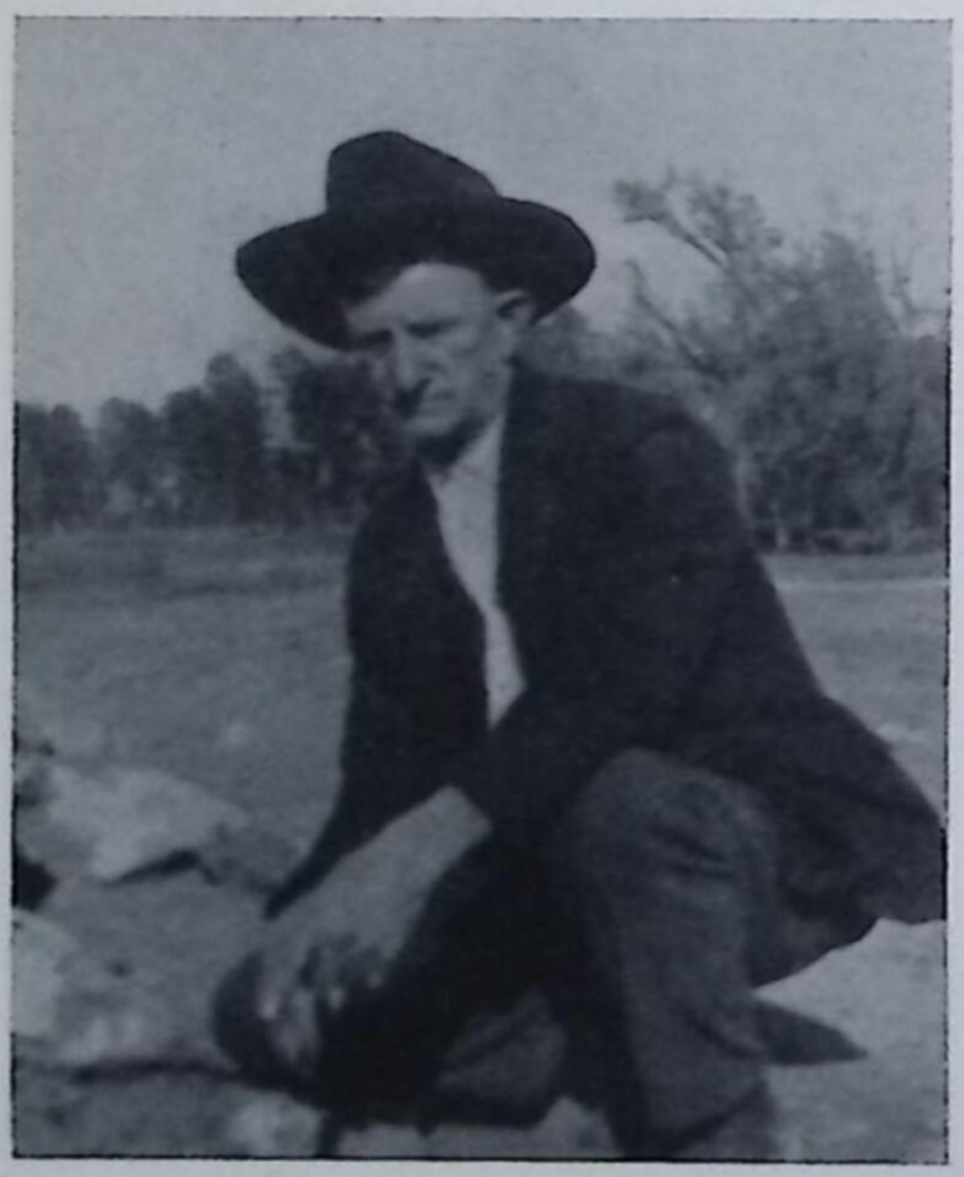
Following the sale of the Huddleston property to the Arkansas Diamond Co., numerous pits were dug and drill holes put down on this and adjoining properties. But, from the day when Huddleston first learned that he had found genuine diamonds, conflicting interests strove for control of the diamond-bearing properties. The bizarre history of this struggle is replete with law-suits concerning which much of the documented evidence has since mysteriously disappeared from the local county Court House. As in many other ill-fated mining ventures, the total expenditure in the attempted recovery of Arkansas diamonds appears to have amounted to much more than the aggregate value of the diamonds found. The site has been



Washing plant built by Ozark Diamond Mines Corp. in 1912 on the Austin Q. Millar property. Destroyed by fire January 13, 1919.

Group of diamond miners, soon after the discovery, washing the weathered breccia and sorting the aggregate for diamonds.

appropriately dubbed "Heart-Break Hill." In striking contrast, woven through the pattern of intrigue and legal chicanery, runs a bright thread of loyalty and devotion as exemplified by some of the natives of Pike County. This is probably best illustrated by Lee Wagner who, for over 35 years, worked at the diamond site for different employers, principally in the capacity of overseer and custodian. At his death, his son-in-law, Solon House, took over his duties and carried on until last March, when he dropped dead of a heart attack. His body was found at the gate leading to the property that he had so faithfully guarded. The loyalty of many of the natives to this abandoned mining project is touching. They have a firm conviction that Mother Nature has a fabulous store of treasure locked in this pipe which once served as a chimney for her intense fires.



John Wesley Huddleston—"Diamond John"—pointing to the place where he picked up the first diamond.

Roosevelt Consulted

The Arkansas Diamond Co. continued production from 1906 to 1932. In 1941 the Governor of Arkansas and the Arkansas Congressional delegation visited President Franklin D. Roosevelt in an attempt to obtain his approval of an R.F.C. loan and certain construction priorities. Roosevelt was attentively interested in the trays of glittering diamonds that were presented for his inspection but he referred the group to the War Production Board.

When the directors of W.P.B. met to consider this application, they solicited information and advice from a number of men with expert knowledge. One of these experts whom the W.P.B. consulted was Dr. Hugh D. Miser of the U. S. Geological Survey. (Dr. Miser is an Honorary Member of the *Oklahoma Mineral and Gem Society*.) At Dr. Miser's suggestion, an exploration project was set up and tests were made of the diamond-yielding material but the government's eventual recommendation was rejected by the mine owners. A sampling program was then undertaken by the U. S. Bureau of Mines. This work was performed from September, 1943 to January, 1944. A total of 435 tons of peridotite was removed from 49 holes and given a preliminary washing and concentration. The residue was then shipped to Rolla, Missouri where the concentration was completed. From this 435 tons, 32 diamonds, weighing a total of 8.4 carats, were recovered. These were graded as excellent industrial diamonds and four of the lot were considered to be of some value as gems. Subsequently, Glen L. Martin, manufacturer of airplanes, became interested in the project through a loan to finance mining operations. Court records, in a subsequent law-suit, reveal that Martin advanced $400,000.00. According to a report filed with the Arkansas Department of Revenue, the Glen Martin operation recovered 840 diamonds having a total weight of 246.15 carats, valued at $4.00 per carat or $984.60.

Gem Quality Found

Despite this poor return upon the capital risked, many excellent diamonds of gem quality have been found in this vicinity. The jewelry firm of Schenck and Van Halen of New York owns the world's best collection of Arkansas diamonds. In the 1919 report of Kunz and Washington, it is asserted that many of the Arkansas diamonds are as fine as any that have ever been found and that some of the yellow ones are of exceptional quality and color. Describing several yellow, brown, and white stones

from Arkansas, Kunz says: "These are absolutely perfect and are equal to the finest stones found at the Jagersfontein mine, or that were ever found in India." The rough diamonds have a rounded and warped appearance and few of the Arkansas diamonds present sharp, angular faces. Kunz says: "The most common forms are distorted hexoctahedrons, most of them elongated but others flattened, with much rounded faces. There are a few regular and undistorted octahedrons that show slightly rounded faces, though in most of these the center is flat. Many of the edges are replaced by dodecahedrons and some of them are further rounded by trigonal trisoctahedrons, with hexoctahedrons near the apices. No cubes were seen and tetrahexahedral and dodecahedral forms seem to be rare, except as they replace octahedral edges and angles."

Mining Methods

There is evidence that, following the initial discovery, several hundred diamonds may have been picked up from the surface of the peridotite area by local residents and other visitors to the site as well as by the miners, but most of the diamonds have been recovered by washing the diamond-bearing material. In the beginning much of the surficial black dirt and the under-lying "yellow" ground and "blue" or "green" ground had been sufficiently softened by long weathering to be washed without preliminary crushing. When it became necessary to expose the "blue" ground for weathering, shallow cuts were made with the use of blasting powder, plows and scrapers or bull dozers. Concentrates from the sluice troughs were often jigged by hand in small sieves, although circular washing pans, of the type used in South Africa, were also used. The separated concentrates were dumped on metal-covered tables and carefully sorted by hand for diamonds or were washed with water over a greased table. The grease passed all of the other minerals but gripped and held the diamonds.

Other Minerals

In the report by Hugh D. Miser and A. H. Purdue in Bulletin No. 808, it is observed that other minerals, much more numerous than diamonds, were concentrated during the treatment of the decomposed volcanic breccia. These, listed in the order of their predominance are: hematite, limonite, barite, colorless quartz, amethyst quartz, pyrite, diopside, and epidote. Some specimens of amethyst and garnet of gem quality have been found and faceted for jewelry. Attractive cabochons have been made of the dense, varicolored novaculite pebbles that occur near the surface.



Built in 1920 by Arkansas Diamond Co.—contained a crusher, tube mill, rotary dryer, washing pans, jigs and grease table. Processed 288,000 cu. ft. of breccia in one year.

Occurrence and Geology

The deposit itself has the shape of a rough equilateral triangle. The diameter is approximately 1800 feet and the depth is unknown. It covers an area of about 73 acres. The geology of the area, mapped by Miser and Ross, reveals sediments ranging in age from Carboniferous to Quaternary that have been intruded by an igneous mass during post-Trinity Cretaceous time. Covering the greater part of the area north, west and south of the intrusive, is alluvium composed of unassorted river sands and gravels.

Sandstone and quartzites of Pennsylvanian age are the oldest rocks exposed. Overlying these are sands and clays of Lower and Upper Cretaceous age which are exposed at the east flank of the igneous intrusive, the remainder of which is covered by Quaternary sands and gravels. At this east flank of the igneous mass the Trinity formation of Lower Cretaceous age has been intruded and metamorphosed. The igneous mass, in which the diamonds are found, is composed of peridotite and related intrusives and extrusives, mostly breccias and tuffs.

Where it can still be found in place, the original surface is black soil, forming the so-called "black" ground. This "black" ground, containing humus and

for a diamond after having been convisitor is granted permission to search organic material, formerly held a concentration of diamonds as a result of long ages of weathering of the diamond-bearing breccia. Immediately below the "black" ground is the true Kimberlite of South Africa, which forms the "yellow," "green" and "blue" ground. This consists of fragments of peridotite plus some shale and sandstone and it yields most of the diamonds that are found. Below this breccia lies the unaltered peridotite which the miners call "hardebank."

The peridotite area lies in the Western Gulf Coastal Plain, about six miles south of its northern edge. Miser concludes that the peridotite is probably of the same age as the Tokio formation (Upper Cretaceous).

Present Ownership and Control

In 1941, the largest area of the deposit, both in size and past production, was leased by the North American Diamond Corporation. Mrs. Ethel P. Wilkinson of Logansport, Indiana, was President of this corporation. This lease was terminated in 1945 and the property turned over to the Diamond Corporation of America. In November, 1950, a portion of the crater area was leased to a new corporation called "Diamond Preserve of the United States, Inc." Directors include Mrs. Ethel P. Wilkinson, Mr. Robert Dale Plant and Mr. Talbot Feild, Jr., who is also President and attorney for the company. The purpose of the Diamond Preserve of the United States, Inc., is to operate a tourist and sight-seeing attraction at the site of the diamond-bearing peridotite so that all interested persons may see the only place in the northern hemisphere where diamonds occur in their matrix. Mr. Feild (he spells it that way but pronounces it "field") states that trails are to be completed; guides are being trained; a museum is to be established to exhibit rough diamonds and portray the geology of the crater and surrounding area; and that the erection of a $40,000.00 operating plant with an annual capacity of 20,000 cubic yards is contemplated so that visitors may actually see how diamonds are recovered.

The diamond preserve is now open daily from 9:00 A.M. until 5:00 P.M. for an admission charge of $1.25. Each



Mrs. Ethel Wilkinson, Logansport Indiana, majority owner of the former John Huddleston property and one of the Directors of The Diamond Preserve of the United States, Inc.

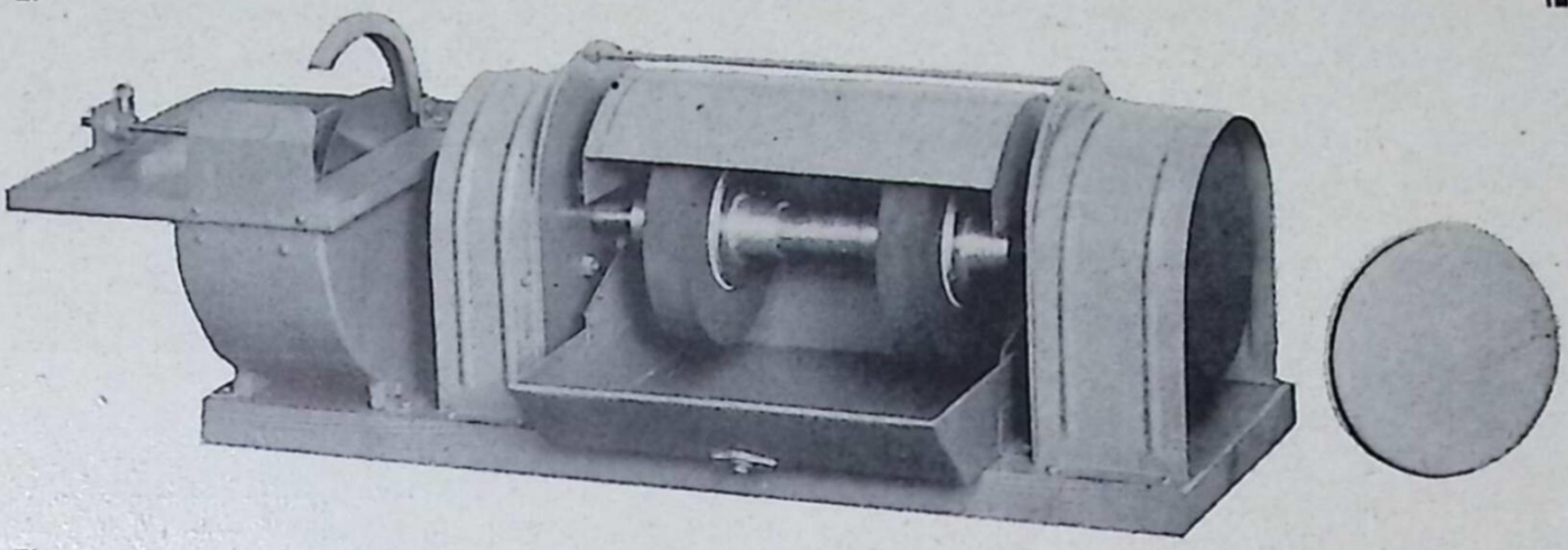
ducted on an educational tour. Take your lunch, go early and stay all day, if you like! If you find a diamond that weighs 5 carats or less, it is yours to keep—absolutely FREE! If you find a diamond which weighs more than 5 carats, you must pay a royalty if you wish to keep the stone. However, it is emphasized that the intended attraction is the exclusive Kimberlite formation rather than the somewhat remote possibility of finding a diamond.

Since February 20, 1951, at least four diamonds have been found by visitors. The largest diamond weighed 1.05 carats. It was found May 27, 1951, by Mr. Kenneth Eugene Gibbons, 6421 Hobart, St. Louis, Mo. Others who are known to have found a diamond are Richard Buhlis, Hot Springs, Ark., and Lewis Matthews, a soldier on leave from Ft. Worth, Texas.

We Explode Some Myths

Mr. Talbot Feild, Jr., wishes to expose and discredit some of the popular misconceptions regarding this area. One of these is the oft-heard report that the

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  Options: Hard felt wheels or sphere cutters may be used.
  Guarantee: Each Model "D" or Model "E" carries a one-year guarantee against defective materials or workmanship.
  Model "D": The Model "D" Frantom Cabochon Unit is identical to the Model "E" except that it is equipped with a sanding drum instead of a sanding head. Price $112.50 F.O.B.
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"interests" surrounded the property with a 10 ft. board fence which was then continuously patroled by an armed guard. Until this year, he says, when some barbed wire was strung up to keep the neighbor's cows out, no fence has ever completely surrounded the crater. No armed guard has continuously patroled the property line although, in the early boom days, armed guards did watch the property from vantage points in small two-story look-out shacks. The facts are that the several successive owners and operators have displayed a singular indifference to the intrusions of the curious. In the early days some operators encouraged visitors by promoting week-end excursions on special trains from Texarkana and other nearby towns. Some of these visitors picked up diamonds. One of the most successful was A. C. Kolb who found a rough diamond that cut out approximately a one carat beautiful stone which he promptly placed upon his fiance's finger. Mr. Kolb subsequently became a prominent medical doctor and psychiatrist. He and his wife live in Little Rock. At the other extreme of the social order, back fence gossip in Murfreesboro whispers that, during the great depression of 1929, one woman supported her family from the proceeds of the diamonds that she found. One of the early operators, Walter Mauney, reputedly had his dentist mount a diamond in the cavity of one of his teeth. Credibly informed people claim that 80 percent of the old time residents of Murfreesboro possess and highly treasure a few rough diamonds which they will sell only at fantastic prices. The Pike County Bank in Murfreesboro has a collection of 29 rather small uncut diamonds.

The age-old lure of finding a precious stone for one's very own attracts rich and poor alike. Even though diamonds are more plentiful than any other precious gem found on earth they are still the best-loved and most sought after. Perhaps this is because diamond is the purest and one of the simplest in chemical composition of all gems, being merely crystallized carbon. Or perhaps it is because of the anomaly of Nature having produced from the same element, carbon, both the brilliant, hard, transparent diamond and the greasy soft, opaque graphite, making of one a superb abrasive; and of the other an efficient lubricant! To further emphasize this contrast we observe that the diamon may be destined to glorify the betrothal of an American girl; while the graphite lead pencil, in the hand of the over-worked credit manager, may prosaically record the collection of the weekly installments on the engagement ring.

"Come one, come all—the number one sight-seeing attraction of the world is now open daily" declaim the gaily colored handbills. The King of Gems awaits you!

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Diamond Preserve of the United States, Inc.

MURFREESBORO, ARKANSAS

◆ Asterism In Gemstones

By NICOLA GOODWIN D'ASCENZO
D'Ascenzo Studios
1604 Summer St., Philadelphia, Pennsylvania

Author of *The Gem-Table, By-Paths In Gems, The Stars Give Up Their Secrets, Inclusions In Quartz,* etc.

Former Proctor for the *Eastern Pennsylvania Guild, The Gemological Institute of America*

The phenomenon of star or asteriated gemstones has always been the subject of much interest and (sometimes) friendly controversy. Unfortunately however for the curious, writers generally have elected to gloss over this enigmatical topic, preferring in the main to state simply that asterism is the result of regularly oriented inclusions. On the other hand I have noted that a great deal of space in some manuscripts is devoted instead to presumably much more important data of scientific interest, such as comparing the depth of the "Big Hole" at Kimberly with the height of the Eiffel Tower, the Kremlin, or even our own Philadelphia City Hall. Albeit, as far as I am concerned, any of these objects could literally be dropped permanently into the aforementioned "Big Hole," without any great loss, and perhaps even some benefit to humanity in general.

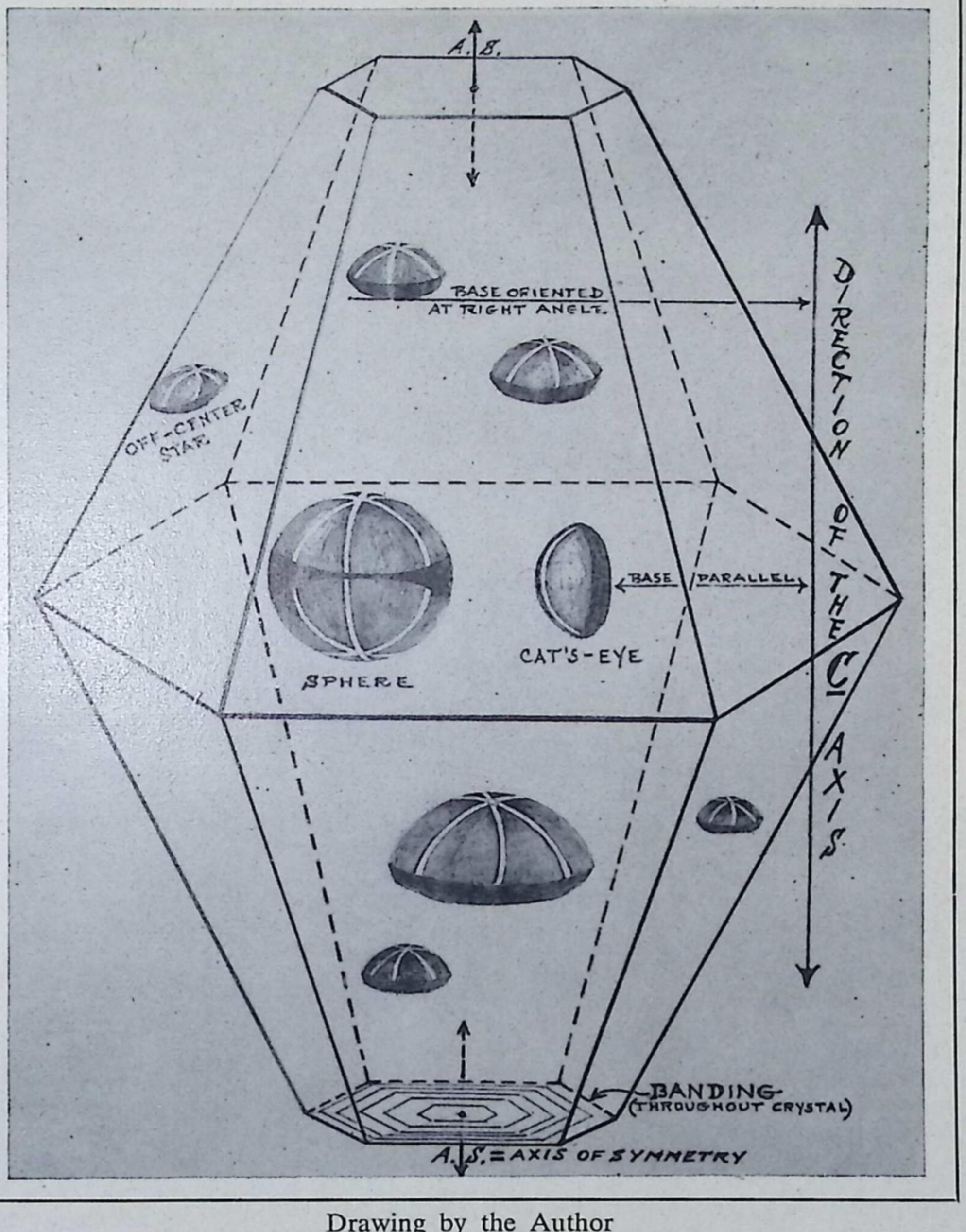
Of course I whole-heartedly agree with my fellow contemporaries, even in their painfully restrained brevity, that asterism is indeed the result of regularly oriented inclusions. However this sort of an "explanation" is really no explanation at all. For those who are truly interested in the solving of the apparent mystery, I am pleased to set forth herewith a more fully rounded treatment of the subject involved. In so doing I do not infer that others are not equally capable.

First then let me state that, contrary to one of the many unproven theories, a perfectly centered star in sapphire is by no means only to be cut by centering the stone on the vertical axis of hexagonal symmetry. Everyday lapidary practice, as for instance performed by the Ceylonese gem-cutters, is to make a centered star from any part of the rough crystal, top, side, or bottom, provided of course that the material is infused with the microscopic inclusions (generally comprising the banding) that are the basic cause of asterism. See lower portion of illustration on the opposite page.

Correct procedure is indeed quite simple, and the only trick is to orient the saw-cut for the base of the intended cabochon at an exact right angle to the vertical, crystallographic, or C axis, paralleling the girdle of the polished dome to this saw-cut. An off-center star is really inexcusable, and is produced either through avarice (to save material) or carelessness. Many of the star sapphires after importation must perforce be recut here, to properly center them before they can be placed on the market or mounted in good jewelry. The only stones sold "as is," unless perfect, are those regarded as unimportant, viz., small size, poor color, general imperfections, weak or off-center stars, etc.

It is to be observed moreover that the characteristic inclusions are quite pronounced in some stones while apparently absent in others. These particular inclusions to which I now refer, while commonly alluded to as banding, are also known as growth lines, or phantoms. They may sometimes be distinct at one end of a crystal and diminish in intensity toward the other. They may also be interrupted or distorted, due primarily to distortion in the growth of the crystal itself, and stones cut from these deformed parts will pass on the distortion, i.e.—an arm of a star might be missing, or an arm might not be a normal straight line. These types of imperfections cannot be corrected.

Further, deeply colored stones tend to show weak asterism due to the absorption of the reflected light by the dense pigmentation, whether blue, red, or brown. And in addition (speaking of color) be wary of any golden yellow stars that might be offered for sale. These probably have been cyclotron or radium treated, turning that color from the original gray. Exposure to the sun or bright incandescent light will cause the stones to revert to their original color.



Drawing by the Author

Asterism and cat's-eye in sapphire, illustrating examples referred to in the text. Two stars may be cut from a sphere as shown. Stars must have bases oriented at right angles to the direction of the C axis, whereas for cat's-eye effect, base must be parallel. The C axis can be at any given point but an axis of symmetry is fixed. These are sometimes confused.

Faceted stones have also been so treated.

Following this necessary preamble, let us now seek and find the direct cause of the asterism. For easily observed illustration I personally like to use a thin low cabochon of dark brown sapphire from Australia. If the usually flat base is not polished, have this done. The banding, being quite pronounced (by transmitted light) in this material, will be seen to vary from one stone to another, depending naturally from what portions

of crystals the stones were cut. In some, for instance, the growth lines proceed straight across, in others an elbow or two may be observed, while in a relatively few one may see the complete hexagonal phantom pattern. But all these stones, banding notwithstanding, show perfect stars. It is then only logical to deduce that the banding, growth lines, or phantoms, as such, have no bearing whatever on the creation of asterism.

Well then, what does cause the star? Our good friend the microscope (as low as sixty-eight power) will tell us in just about two seconds flat. Place the polished flat base of the especially prepared stone toward the objective lenses, which eliminates distortion caused by looking through a curved surface, focus on the banding, and observe! What appeared as solid bands to the unaided eye are now clearly revealed as densely "matted" microscopic crystals, all oriented to one or another of the six prism planes. It is therefore only natural, considering their arrangement, that they reflect light into three chatoyant lines, crossing at the center, onto a polished cabochon or ideally speaking, a hemisphere. Moreover, twelve rayed stars, due to twinning, are not too uncommon in the Australian material, and on careful scrutiny it will be seen that six rays are golden, while the intermediate six are bluish green. This might be due to the fact that sapphire can be abnormally biaxial, and perhaps only when twinned. Indeed, coloration can control crystal form, viz., although basically the same mineral, the crystal habit of sapphire (used as the basis of the illustration) is different from the crystal habit of ruby. In addition, when one tends to combine with the other in producing rich purple, a cut gem is found to have a very delicate balance in the property of color absorption, and will react similarly to alexandrite under various types of light sources. Indeed, it may well be that a stone of this sort has been erroneously reported as a "star alexandrite."

To properly test a stone for a perfectly centered star seems a puzzling task, since of course the star moves over the polished surface when tilted, or does not seem to be centered (to the uninformed) even in sunlight. However, I am glad to report that the assignment is not difficult. To properly test for centering, we must imagine a plane through the stone at the girdle line, i.e. —where the polished surface of the cabochon meets the roughly shaped base. Then directly under a single source of illumination, such as an unshaded incandescent bulb, hold the stone so that this plane is at right angles to an imaginary beam. If the stone has been correctly oriented in cutting, the star will now be perfectly centered. If the test should be conducted in sunlight, tilt the stone to compensate since (in the latitude where this is written) the sun is never directly overhead.

This profession is not without its amusing side. A friend called me up one night to inform me that he had a star sapphire with three stars in it. I told him not to go away until I got there. We went into his den and he showed me the stone, and sure enough there were the three stars. So without saying anything I pointed to the ceiling light, then to the two lights, one at each end of the fireplace. My friend learned then and there that a star sapphire will reflect a star for each light source, ad infinitum. In addition, if a light source is moved to the left, the star moves to the right and vice versa. This is because the beam in penetrating one side, is reflected back through the opposite side, the asterism on the surface being caused by transmitted instead of directly reflected light, under which latter condition the star is at its maximum brilliance.

It has been incorrectly assumed by some that if a cabochon sapphire's banding is all in one direction a cat's-eye will result. Not so, of course. A cat's-eye effect can be cut, but only if the base of the stone is oriented in a parallel position to the C axis. There will then also be a star at each end of the cabochon so cut and this may be observed if the ends are polished down sufficiently far. The stars will be pinched owing to the relatively small surface area, but they will be there. The "cat's-eye" is therefore in actual fact, one complete arm of the double star, brought to the center of the cabochon by studied manipulation on the cutting and polishing laps. If a lapidary in turn should elect to cut a sphere, the result would be a star at each "pole" of the C axis, from which two stones could be cut as indicated in the illustration.

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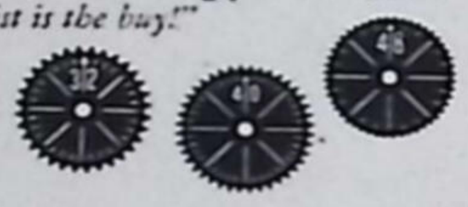
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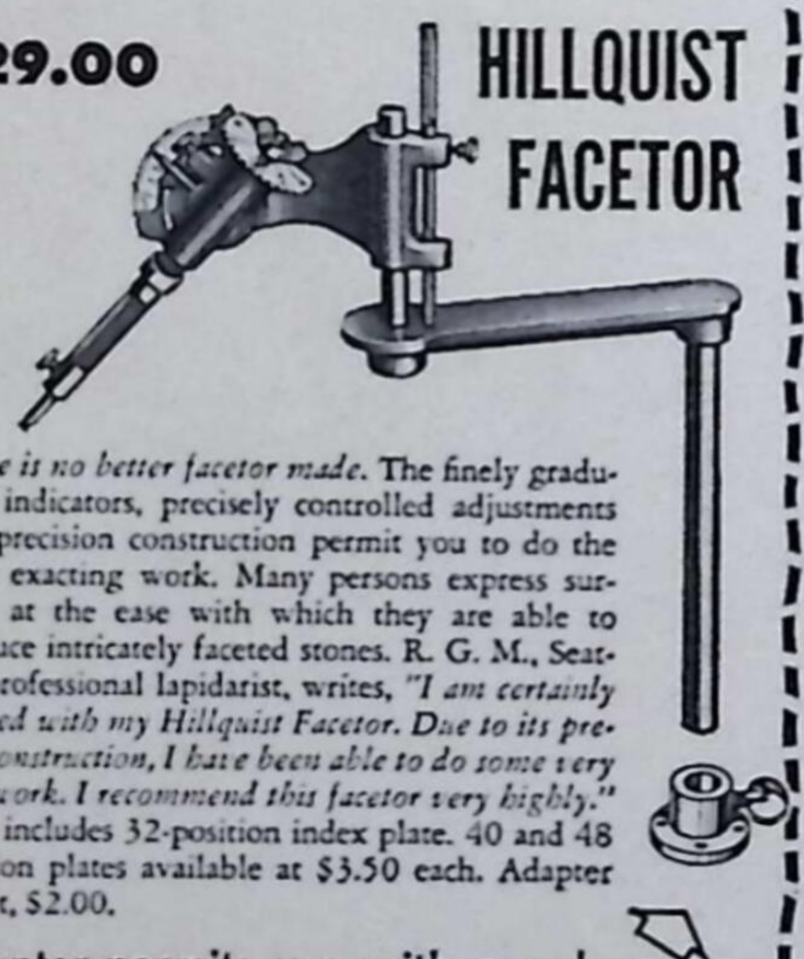
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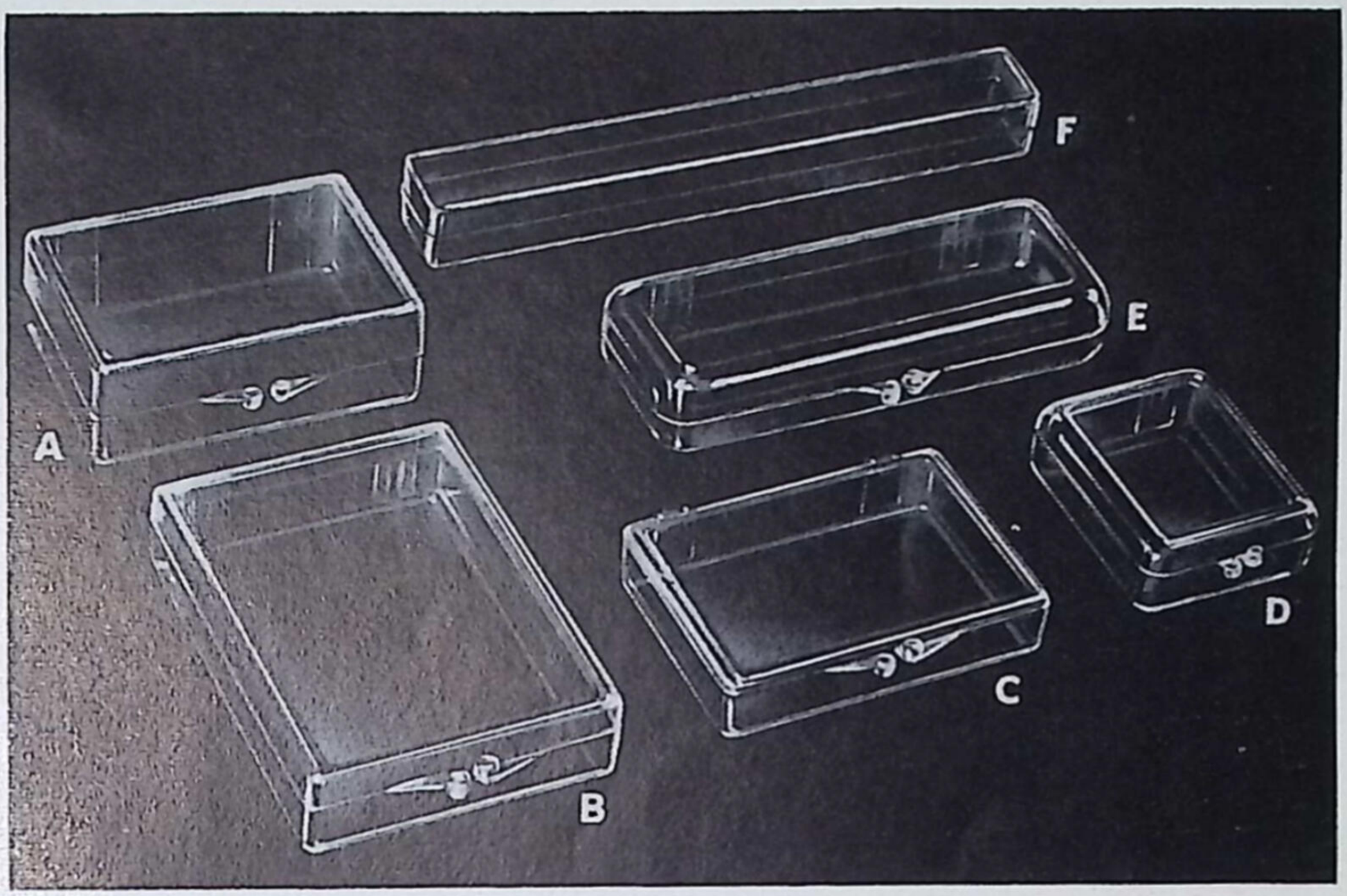
LAPIDARY SUPPLIERS ASSOCIATION

Asterism is also known in many gemstones other than sapphire and ruby, the most common of these being quartz. This material is used extensively to provide the public with an inexpensive substitute, in a natural stone, for the star sapphire. The effect has been accomplished in most cases by applying a blue mirror material to the base of the cabochon. While quartz exhibits sharp asterism, nevertheless it has a glassy appearance and lacks the characteristic richness of sapphire. No matter how fine, they could never fool the expert, as have the new synthetic stars on occasion. Moreover, quartz can be complexly twinned, and spheres cut from such material exhibit startling phenomena, by reflected as well as transmitted light. One such sphere showed a twenty-four rayed star when viewed against a pocket spotlight. Bright spots, perhaps coinciding with the axes of symmetry are also visible, when the sphere is revolved. Food for thought or controversy at least.

Garnet also provides asteriated material, but by no means in great quantity. the asterism observed is either four or six rayed, the latter being quite rare. Moreover, four rayed stars of good quality are scarce, the asterism being usually weak (but well defined if present) due to absorption by the deeply colored material. The four rayed stars are the result of the inclusions being oriented at right angles to the axes of symmetry in the rhombic dodecahedron, while the six rayed stars are created by the dodecahedron modified by the cube. In addition, by progressively more and complex modifications, eight, twelve, and sixteen rayed stars are theoretically possible.

Asterism is also known (but rarely) in the following: beryl, diopside, labradorite, spinel, and tourmaline. Reports, not confirmed by this writer, include alexandrite and zircon. Of those confirmed above the most unusual is perhaps tourmaline. The asterism observed was three rayed, each chatoyant line converging at right angles over the vertical axis of symmetry, and at an angle of one hundred and twenty degrees at each converging intersection. Happy hunting!

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The transparent plastic boxes in the above illustration are only a few of the types and sizes available. The boxes are constructed of rigid polystyrene, and all those illustrated, with the exception of series F, have hinged covers, a positive latch, and slightly raised edges to prevent scratching or abrading the surfaces. All boxes of the F series have telescope covers.

The boxes may be used for display of cut and polished stones, jewelry, small rock specimens, cataloging collections, or keeping some fragile specimen dust free and safe from rough handling. Fishermen use them to carry their flies and hooks while upon the stream and to safely store such items when not in use. Hobbyists find them convenient for storing all those small parts so easily lost or misplaced, and as containers for various hand tools. Many dealers use them as an aid in displaying and selling collections, jewelry, or individual stones.

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	*895	2⅝x3⅝ x ¾	.25		3	1⅞x1⅞ x ¾	.12
	908	2⅝x3⅝ x1	.30		4	2¾x3⅜ x1-7/16	.25
C	*700	2 x2⅞ x ½	.18		*6	⅞x6⅛ x ¾	.22
D	250	1⅝x2⅛ x ½	.10		7	¾x2½ x ¾	.12
	*369	1⅝x2⅛ x ¾	.12		9	2½x2½ x1	.20
	684	1⅝x2⅛ x1	.15		33	1½x3⅞ x1	.25
E	*150	1⅝x4½ x ⅞	.25		34	1⅞x4⅞ x1	.35
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202		7 (1 large, 6 small)	.75

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301		18	1.00
302		12	1.00
303		1	1.00

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◆ Iris Agate-- and Its Treatment

By ERNA CLARK
611 Cypress Circle, Redlands, California
Past President of *Orange Belt Mineralogical Society*

Here is the story of the characteristics of iris agate and a discussion of methods of lapidary treatment as given by Mrs. Clark in her popular lecture on this subject before many Southern California audiences.

To own a few pieces of good iris "rainbow" agate can be your pride and joy forever! If you do not already have some then perhaps you have some neglected dust-covered material in the rough stuck away that could be developed into beautiful iris. Or perhaps this article will inspire you to start right out on a search for some out on the desert, the beaches or in your backyard. (Or even in a collector-friend's backyard . . . that has been known to be highly successful too!) This agate, when developed, has the play of all the colors of the rainbow and therefore many of us know it by the name of "IRIS 'rainbow' AGATE." Some lapidaries like to call this beautiful agate "SPECTRUM AGATE" because it has spectrum qualities . . . hence this infers to this agate any series of radiant energies arranged in order of wave length and brings about the colors from red to all the other colors of the rainbow.

Going back to Greek mythology we first hear of the name Iris as that of the Goddess of the Rainbow. She was the daughter of Thaurus and Electra, who was the sister of the Harpies, the fleet golden wing messenger of servants of the Olympian Gods, especially of Zeus and Hera. In other words Iris was originally the personification of the rainbow.

Will Rogers used to say, "all I know is what I read in the papers." I say that all I know about iris "rainbow" agate is from actual experience gained when assisting my husband (the late Dr. D. H. Clark) in collecting, cutting and polishing this most beautiful of agates. I still cut and polish them when time permits.

When iris is developed, its delicate colors of ethereal-like beauty reminds me of something truly divine. Although the flash of colors in fire opals is similar I prefer the rainbow iris because I can have more real fun playing with it.

Until recent years little was known about iris. Very few collectors had any and pieces were not shown in museums. Contrary to public opinion iris-agate is not a special kind of agate. The phenomena of iris is not produced in agate alone but in many other agencies. An example is the sun shining on a thin sheet of water or against a fine mist of water, or oil on the pavement, and of course our rain-shower bows.

Most of the iris is developed from clear agate that is cut very thin and polished on *both* sides — mostly from nodules without matrix and also from seam-agate. However we also developed some from what is evidently a wood-cast, from the petrified wood location of Eden Valley, Wyoming. It had quartz centers and was banded—typical characteristics of regular iris.

When we were first introduced to iris agate we were told it was *very rare*. We soon found that to be true and when we were further informed that only an average of one agate in 20,000 had iris it was a real challenge to us to start right out and see how many we could find by digging, buying, begging, trading and (almost) stealing. A locality in Mint Canyon, northeast of Los Angeles, gave us a better average than the quoted figures. Here we averaged about one rainbow in six agates. That is extra good! And we were having fun too. However some collectors have tried and tried for iris from other localities and average only one iris perhaps to a wheelbarrow full or even a ton of cut agates. But I hasten to add that anyone is likely to find iris wherever translucent agates are found, even in seam agate. Sometimes it appears in the first piece

you try. That was our experience when we cut an agate nodule I had found near Chuckawalla Springs in Southern California. It has a beautiful band of rainbow colors combined with turtle-back agate and has white plume around the edge. This was the spark that set us off in search for more iris and renewed our enthusiasm for this great hobby.

How to Recognize

How does one recognize the characteristics of agates that have the promise of iris? Usually they are without matrix and usually they have a center of massive quartz crystals. Or they are hollow and quartz-lined with the chalcedony bands around the edge in which we find the play of the rainbow coloring when developed. Sometimes these bands are adjacent to the quartz crystal center. However this characteristic can be reversed, with the bands or fortification lines in the very center of an agate which has radiating quartz crystals around them. The latter are super-duper rare! We found this type on hills in Idaho. There are also a few that are solid chalcedony. These may have iris all over the surface and before a light they resemble a solid piece of fire opal.

The strange phenomenon of rainbow colors in agate is caused by an interference of light. When a promising agate is cut on the long axis, or even across the short axis, it shows distinct bands where the minute layers have been cut. These bands vary a great deal in thickness and may run as many as 55,000 to the inch. By their ability to refract light the bands cause the rainbow colors. In order to get the proper effect these bands must be within a certain distance apart. This range of distance usually is from 1/22,000th of an inch to 1/12,000th of an inch. If the bands are closer together than 1/22,000th of an inch the agate is so dense that the light rays cannot penetrate it. If the bands are farther apart than 1/12,000th of an inch the agate is so open that the rays pass right through without refraction.

While experimenting for iris we discovered that a thin slice placed under a strong magnifying glass reveals that the bands are also made up of minute quartz crystals which act as prisms and have the ability to refract light causing the phenomenon of true rainbow colors.

If you take a known piece of iris that has been dyed by soaking it in chemicals the iris effect is lost permanently. Experiments with heat treatments on ordinary banded chalcedony have failed to produce the play of rainbow colors. Only Nature can produce an iris-agate!

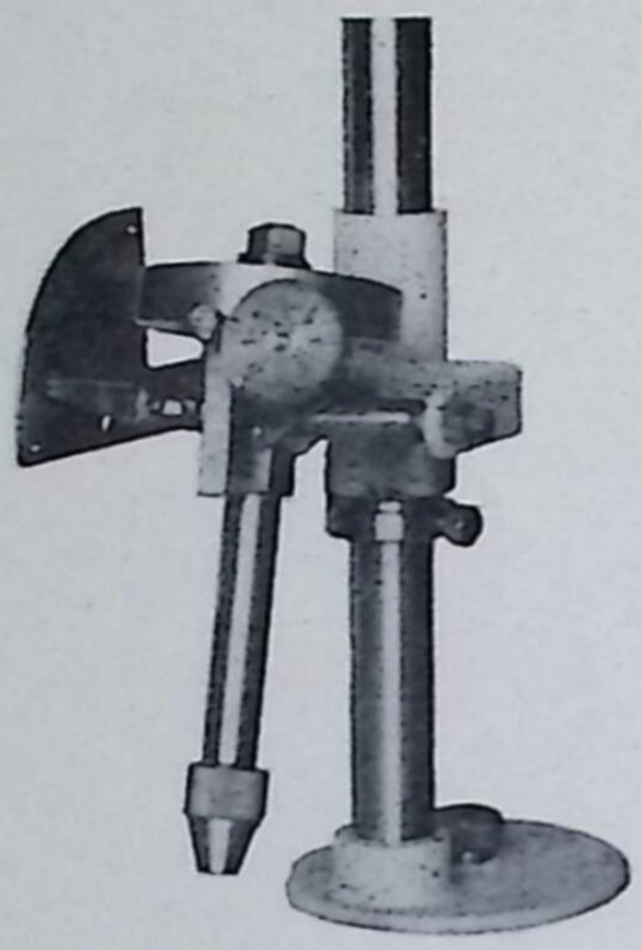
For maximum results from these hidden beauties it is advisable to take a promising agate and cut slices as thin as ⅛th to 1/16th of an inch. Some of these are paper-thin by the time they are polished on both sides and with beautiful results. Spread a thin smear of kerosene oil on both sides and hold toward a clear light or the sun and play the specimen back and forth or up and down. You will know immediately if it is iris. If it is, then proceed to polish on *both sides*.

How to Polish

This is best accomplished by the following method. If there are any jagged bumps on the edge of the slice grind them off on a grinding stone until the piece is smooth. Dop it with sealing wax to a block of wood or a piece of plate-glass approximately the size of the piece to be polished and thick enough for easy handling. The backs of old scrub-brushes or smaller brushes are ideal because they fit the hand. Another method is to dop the slice to another big agate so that the big agate takes a lot of the generated heat. First melt enough sealing wax for a smooth spread over the entire top of the block to be used. At the same time warm the slice and place it on the warm sealing wax, extending the slice ¼" on one end. Allow the work to cool thoroughly. You are now ready for the next step. Start off by using 220 grit. If you have a smooth cut stay with this grit until all saw marks are ground away and do not press too hard. *Avoid overheating!* Now you are ready for the sander and after that you finish off with cerium oxide for the final polish. In other words process agates in the conventional manner as for cabochons. I know of one expert iris-polisher who uses the "feather-touch" system of merely holding the thin slice in the palm of the hand. I am still afraid to try it with anything so delicate and rare as iris.

Now the all important question on how to remove the sealed slice without injury. Place it in a pan of cold tap

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water. This usually causes the slice to drop off. If it does not then add a few cubes of ice or even place the work in the refrigerator for a few minutes. Then the slice can be pried off with a little pressure or a gentle tapping on the *extended* end. Take care not to leave it in a refrigerator too long or it will cause too much contraction if the specimen has a minor fracture. Do not tap on the side edges of a slice for on a slightly fractured piece this might cause disastrous results.

To remove surplus wax we use alcohol or turpentine, but upon recent information I experimented and learned that there is nothing like acetone for that purpose. This is the chief ingredient of nail polish remover and is available at drugstores. It should be kept in an old perfume bottle that has a ground glass stopper. This prevents evaporation.

Now with both sides polished you have something unusual and beautiful! A new "bragstone" to play with, at arm's length up and down before a light or the sunshine. A clear electric globe is best for maximum results.

Some collectors mount their iris in frames of card board for easier handling and with less danger of breakage. Others glue them lightly on thin window glass and paint green or black enamel between the specimens to cut out surplus light. Others use the reflection of a mirror and lights. Part of my collection is displayed in an octagon-shaped cabinet with lights inside. The cabinet, geared to a small motor, revolves automatically. It was a gift from a good friend, an expert cabinet-maker and the finest type of collector who introduced us to the marvels and wonders of iris-rainbow-agate.

To own a piece of iris that includes a landscape scene plus a "rainbow" is to own something priceless! By that I mean the owner seldom lets go of it—not until his time is about up on this good earth with its rainbows and then he might give it to some very special person as a "treasure gift."

Where to Get It

Here is a list of known locations for good iris material:

—Moss agates from the banks of Yellowstone River in Montana.
—Along the Willamette River and the

coast beaches of Oregon.
—Some of the very best iris agates come from near Antelope, Oregon.
—Agate nodules from throughout Wyoming.
—Agate nodules from Challis, Idaho.
—New Mexico (near Springerville, Arizona).
—California locations: Mint Canyon agates, northeast of Los Angeles; Chuckawalla Springs east of Salton Sea or near Desert Center; Nipomo agates (some including sagenite) 3 miles north of Santa Maria; Berkeley Hills along Fish Ranch road; Twenty-nine Palms district and Lavic, on the Mojave Desert.
—Big Bend, Texas district and Old Mexico locations.
—Brazilian agates have produced some very beautiful iris.

So we learn that one is likely to find iris wherever agates can be found. Perhaps many of you already have some of this material on hand and now, you should proceed to develop it. Even if all agate does not turn out to be iris you will find specimens with very pretty fortifications to start a collection of translucents that are very beautiful in their own right.

For those who find no iris rainbow agate at all we offer the following story, taken from the March, 1946, *Mineralogist*:

Nurse in Psychopathic ward: "This patient seems to have lost his balance because of a terrible accident. He keeps mumbling 'Seventeen thousand fractures to the inch!'"

Doctor: "He is all right. He has an iris agate and has been reading up on it."

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ORIGINAL LADIES' JEWELRY DESIGNS

By WILLY PETERSEN-FAGERSTAM

FIGURE ONE—NECKLACE

In this necklace there is a choice of two types of neck chain. The links can be used for bracelets, earrings and rings. The center piece can be used as a pendant or pin.

Number 1 is the center piece. The bezel is made of 22 gauge fine silver, backed with 24 gauge sterling silver plate. Figures Number 2, 3, 4 are made in right and left of 16 gauge sterling silver. They must be sawed and then filed half-round. Bend as indicated in the drawing. Number 4 is 18 gauge sterling silver wire with a bead melted at the end. Number 5 is a small silver bead. Number 5 is a small silver flower sawed from 20 gauge sterling silver.

FIGURE TWO—EARRINGS

Number 8, the bezel, is made of 24 gauge fine silver. Number 9 is made of 20 gauge sterling silver and Number 5 is a small silver bead.

FIGURE THREE—NECKLACE

This necklace is made similar to Figure One. The flower petals are curved on a lead block with a ball punch after being sawed from 20 gauge sterling silver. Number 2 is a silver bead and Number 3 shows a link made of 20 gauge sterling silver wire.

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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.

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Fig 1.

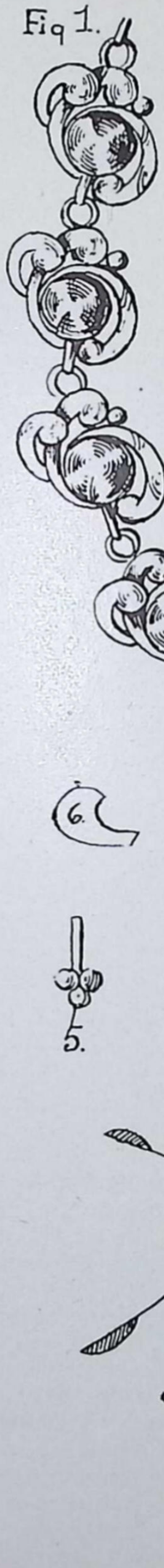
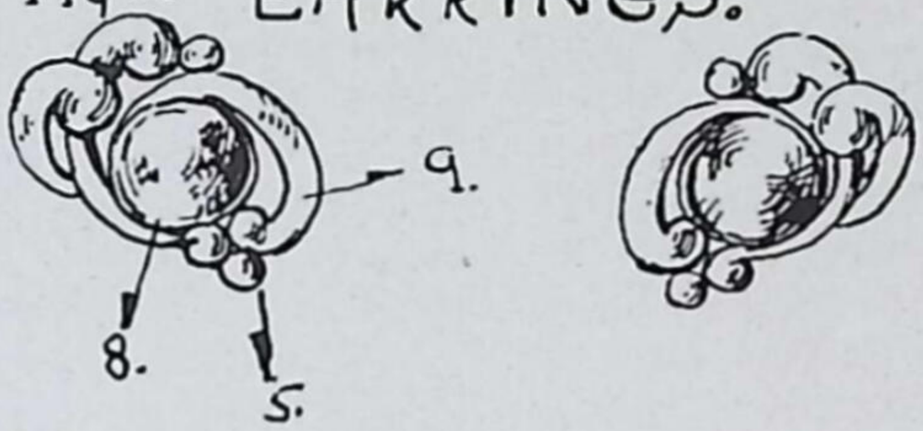
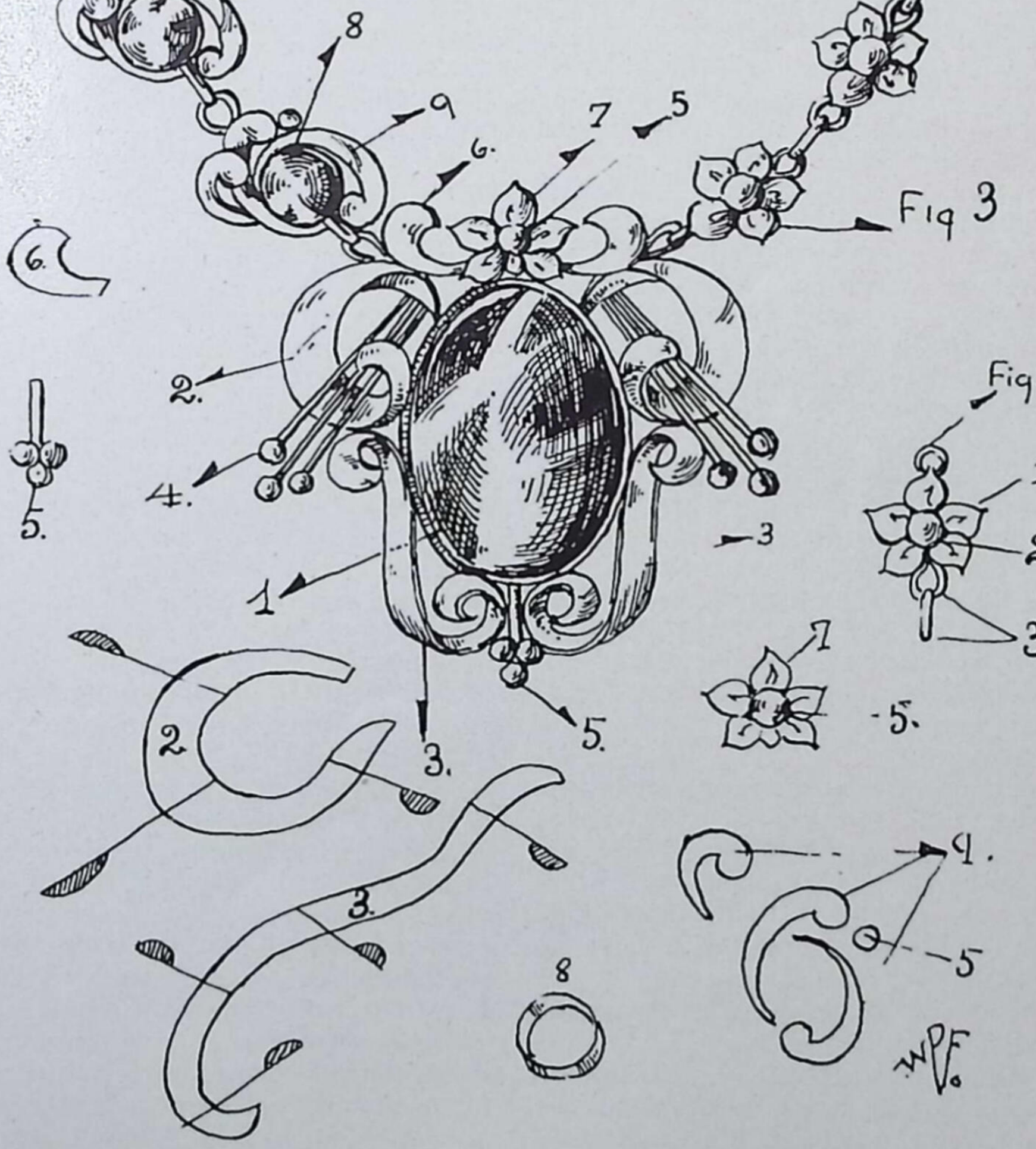
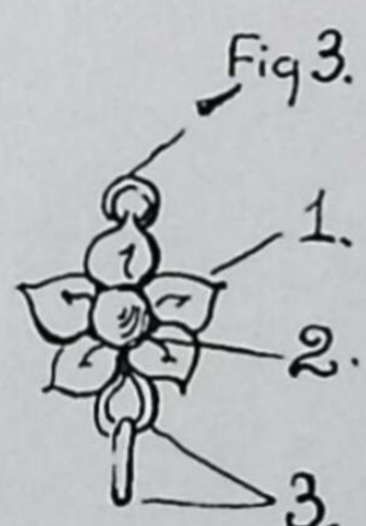


Fig 2 EARRINGS.







◆ The National Gem Collection at Washington, D. C.

By JAMES H. BENN*
Department of Geology, U. S. National Museum
Treasurer *Eastern Federation of Mineralogical and Lapidary Societies*

*An original article published by permission of the Secretary of the Smithsonian Institution.

Various countries of the world have their crown jewels and others have collections of precious stones belonging to the state. How many persons here in the United States know that we, too, have a magnificent National collection of gems housed in the United States National Museum at Washington, D. C. belonging to the people and for which Congress each year appropriates funds for its care? According to Dr. W. F. Foshag, Head Curator of the Department of Geology in the Museum, who recently visited the major museums of the world, it is a collection of gems that is unsurpassed by any other. Although the collection is viewed by hundreds of thousands of persons each year, few visitors are acquainted with its importance. Indeed, many persons miss the gem collection completely due to the numerous other attractions in the National Museum. For this reason it is my desire to escort you on an imaginary tour through the gem hall so that you will be fully prepared to enjoy yourself when you next visit the Capital city. A selected number of stones from the National collection were illustrated in the December, 1950 issue of the *National Geographic Magazine* under the article "Exploring the World of Gems," by Dr. Foshag, and might be seen at your public library.

The collection is unique in that it does not represent the spending of public funds for the purchase of the many valuable items it contains, but rather stands as a monument to the civic pride of the American people, who have so generously and unselfishly built it for the benefit of all the people by means of endowments and gifts.

In 1894, through the thoughtfulness of Mrs. Frances Lea Chamberlain, the Museum was bequeathed a collection of precious stones which had been assembled by her father, Dr. Isaac Lea. This collection was afterwards further enhanced by a large number of specimens donated by her husband, the late Dr. L. T. Chamberlain. Upon his death, he endowed a sum of money, the income from which is used to acquire additional material for the Isaac Lea Collection.

All through the years many gem pieces have been added as gifts from indivduals and other sources. These, with the Lea Collection, have been combined to form the National Collection of Gems. On exhibition the displays are known as "The Isaac Lea Collection," but personal gifts, deposits, purchases and like acquisitions are individually labeled as such.

At present there are approximately 3,000 specimens in the National Gem Collection, of which the Isaac Lea Collection comprises more than one-half.

Of the 1800, more or less, minerals known in the mineral kingdom, only about a hundred have beauty and durability to such an extent that they are of importance to gem cutters. Among the many outstanding precious stones on display may be seen stones of rare occurrence and of unusual material cut as gems. Not always are they of value to the commercial jeweler, but are always of great interest to amateur lapidaries and collectors. I shall mention a few of them later.

The names of many gems, like amethyst and jasper, have come down to us from ancient times; but tourmaline, benitoite, brazilianite and others are of modern origin and were unknown to early peoples. In addition to their accepted names, certain gems are called by one or more synonyms, usually popular or trade names. An example of this is the use of topaz-quartz for that perfectly lovely gem citrine. As far as possible the Museum labels set forth

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the names generally accepted by mineralogists.

In appreciatively viewing gems, one should have a brief knowledge of their composition and physical properties. With the exception of the diamond which is pure crystallized carbon, gems are composed of two or more elements, usually in definite proportions. However, occasionally in some stones there may be impurities or included structures which impart to them attractive color or peculiar phenomena like phantoms and stars. Almost all gems have some metal in their composition, either as a direct part of their make-up or as an impurity. Indeed, the metallic elements contained in their compounds produce the essential colors so greatly desired in certain stones.

In other gems, colors are due to foreign substances and vary widely from one specimen to another. They may be of three different types, namely: colors produced by minute particles which in themselves show essential colors and render their properties to a gem; disperse colors due to tenuous pigmenting elements; and internal reflection colors due to inclusions or extremely thin planes, producing interference of light.

Another interesting phenomenon of color in gems should also be mentioned before going on. Certain minerals transmit light of different colors in different directions. These are said to be pleochroic. Where the difference in color is not great this peculiar property may be detected through the use of an instrument known as a dichroscope.

Aside from the above there are other properties of gems, such as hardness, luster, index of refraction, and natural crystal forms, all of which have bearing upon their wearing and cutting qualities and their value.

When entering the Gem and Mineral Hall in the United States National Museum, you will notice to your left a case containing American diamonds. It is not generally known that diamonds are found anywhere except in India, Brazil, and South Africa. As a visitor you will see natural uncut stones of this gem found in Arkansas, California, Indiana, Kentucky, North Carolina, Oregon, Texas and West Virginia. Stones have been found elsewhere in the United States, particularly in the glacial drift in Wisconsin, but are not represented in the Museum collections. Of the localities represented in the exhibit, only Arkansas has produced diamonds in place, the others have been taken from alluvial deposits.

To your right along the end wall of the hall you will notice two lighted cases containing gemstone beads. Here one may see strands of beads cut from minerals well known to collectors, which not only entrance the ladies with their symphony of color, but make the gem cutter's heart jump for joy. Represented are: agate, turquoise, rhodonite, rose quartz, smoky quartz, lapis lazuli, tourmaline, citrine, amethyst, opal, garnet, tiger eye, jasper, carnelian, amazonstone, satin spar, chalcedony, amber, serpentine, coral, malachite, hematite, moonstone, labradorite and jade in its various color phases of red, green, brown, yellow, lavender and black. These selections are from bequests by Edna Ward Capps, Otis Beall Kent, Ora Sperry and Mary Vaux Walcott.

Directly below the beads to the right is an exhibit of cultured and natural pearls. Observe the bracelet of seed pearls, two drop pearls almost matching and the handsome strand of pearls, all of them natural, which were presented to the United States Government by the Imam of Muscat during the presidency of Martin Van Buren. The cultured pearls are a gift of the firm of K. Mikimoto and Company, Limited, Tokyo, Japan.

Below and to the left the exhibit is confined to synthetic stones and artificially colored stones. Sapphires, rubies, emeralds, titania and spinels are displayed, as uncut boules and faceted stones along with a rich green diamond, colored by having been subjected to the effects of a cyclotron.

Between these exhibits is a sectional case devoted to the birthstone of the month. Here at the beginning of each month throughout the year the exhibit is changed in honor of the natal stone or stones for the new month.

Now, stepping to the first table case in the center of the hall you will notice a pad of colored diamonds—not large but of exquisite tints and superb workmanship—coffee, steel blue, pink and canary yellow. Take note also of the nine carat black diamond.

Next to them are the rubies and sapphires. Here is a magnificent blue sap-

phire of nine carats; there a rich golden one of 35 carats; and be sure not to miss the rare paparadscha of 15 carats, a peach-colored sapphire found only in Ceylon. In a special case along the inner wall of the hall is exhibited the famous Star of Artaban, a star sapphire weighing 316 carats presented to the Museum as a gift by Mr. Frank Ingram; along with it may be seen a star ruby of 50 carats, a cat's-eye chrysoberyl of 40 carats, and a very rare cat's-eye emerald of 4.56 carats. Stepping back to the table case again, look at spinels, a magnesium aluminate, ranging in color from lavender, pink, red, brown, magenta, Prussian blue, and purple, and in size up to 46 carats.

In the next case comes topaz. Take note of the finest sherry stone in the country of 94 carats, and of the giant limpid blue weighing 685 carats! Clear stones as well as rose, pink, yellow, and blue greet the eye.

The sherry colored stone, which comes from the Roebling Collection of Minerals, is said to have been highly cherished by Colonel Washington A. Roebling, the great collector, and was a gift to him by his son John A. Roebling. Colonel Roebling was a man of extraordinary ability and supervised the building of the Brooklyn Bridge, which at the time was considered a remarkable feat of engineering. He also was head of the Roebling cable works in Trenton, N. J. But with all his accomplishments, which brought him fame and fortune, his greatest pleasures in life were his minerals and gems. It is reported that he had the sherry topaz with him at the time he passed away.

Now turn to the alexandrite, a variety of chrysoberyl, and a stone which is green in natural light, but turns red in artificial light. Alexandrite was discovered in the Ural Mountains of Russia in 1830, on the birthday of Alexander II, Czar of Russia. Red and green being the two chief military colors of the Old Russian Empire, the Russians were much impressed and wore the strange new gem with great pride. It was named alexandrite in honor of their Czar. Observe the small stones from the original locality in Russia and the mammoth gem of 66 carats from Ceylon. Exhibited also are yellow and brown chrysoberyls up to 121 carats.

The third table case would make a pirate roar with delight. Here are the beryls: fine goldens up to 133 carats; emeralds up to 12 carats, one a stone of 7.05 carats from near Shelby, North Carolina; morganites up to 122 carats with a splendid pink weighing 56 carats from Madagascar; aquamarines of light clear blue to a rich blue stone of 61 carats, and a greenish-blue stone of 125 carats.

Garnets appear in the next case and run from the deep reds of almandites through brilliant lighter reds of the pyrope, and thence to the red-purples of the rhodolite, red-browns of essonite, yellow and orange of spessartite, to green demantoid. Exhibited in this same case, among other fine peridots, is one of rich green weighing 310 carats and considered to be the best and largest in the world.

In proceeding to the next case be sure to stop by the crystal ball, considered to be the best in the world—flawless, over a foot in diameter, and weighing more than a hundred pounds. This remarkable sphere was presented to the Museum by Mrs. Worcester Reed Warner in memory of her husband Mr. Worcester Reed Warner.

Displayed in the fifth case are gems from the crystalline quartz group. Beautiful smoky stones are presented from Arkansas, North Carolina and Colorado. A very well-cut cairngorm from Scotland weighs 144.9 carats.

Amethyst ranges in color from light to rich purple and in weight up to 202 carats. American localities represented are North Carolina, Pennsylvania, Maine and Virginia.

Citrine passes from light pale yellow to rich sherry red. The largest weighs 1180 carats!

In the next case, which contains varieties of cryptocrystalline quartz, be sure to see the landscape agates from Montana, fossil wood from Arizona, and bloodstone from India. We hope some day to assemble enough fine American agates to enable us to display a special exhibit in a case by themselves.

Unusual faceted stones are exhibited in the seventh case. These are the stones I referred to earlier as of interest to collectors. I shall designate the American localities as I name them: kyanite and oligoclase, North Carolina; willemite, New Jersey; scheelite, California; labradorite, Utah; epidote, axinite, by-

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Zircons, which compete with the diamond in brilliance, are represented by lustrous clear stones, with plenty of fire, up to 24 carats; notice the fine red-brown gem from Burma of 76 carats, and another of golden-green weighing 78 carats. There are smaller stones of emerald green and a rich sapphire blue zircon from French Indo-China of 103 carats.

Spodumene, exhibited nearby, flaunts its tints of straw-yellow in normal stones, pink in the variety of kunzite, and green in the rare member of this group, hiddenite.

Tourmalines appear next and are the finest in cut, color and size, to be found anywhere. Various shades and tints of blue, green, yellow, pink, lavender and red are there in such a riot of color that one can imagine the angels singing with joy. The largest is a peach colored gem from Manchuria weighing 111 carats.

Just beyond the next case, devoted to rough and cut stones, is a showing of various minerals cut in cabochon style. These include apple-green prehnite from New Jersey, aragonite from California, labradorite from Labrador, perthite from Canada, green diopside from New York, obsidian—brown, black and pearly—from Mexico and the Yellowstone National Park, sunstone, from Pennsylvania, thompsonite from Minnesota, satelite, a cat's-eye serpentine, from California, thulite from Norway, friedelite from New Jersey, green californite, yellow and blue smithsonite, chlorastrolite, malachite, tiger-eye, rutilated quartz, and amazonstone.

In a special case along the inner wall are many fine cabochons and flat polished specimens of precious opal from Australia, Mexico and Nevada. There, too, is the largest rough black opal ever found, and the vertebra of an extinct plesiosaur replaced by this mineral.

All of the pieces mentioned and many more, including the world's largest and best blue benitoite from California and 16 stunning golden sphenes are on display at the United States National Museum for your inspection and enjoyment. If you have never seen it, I can assure you there is a great thrill in store for you.

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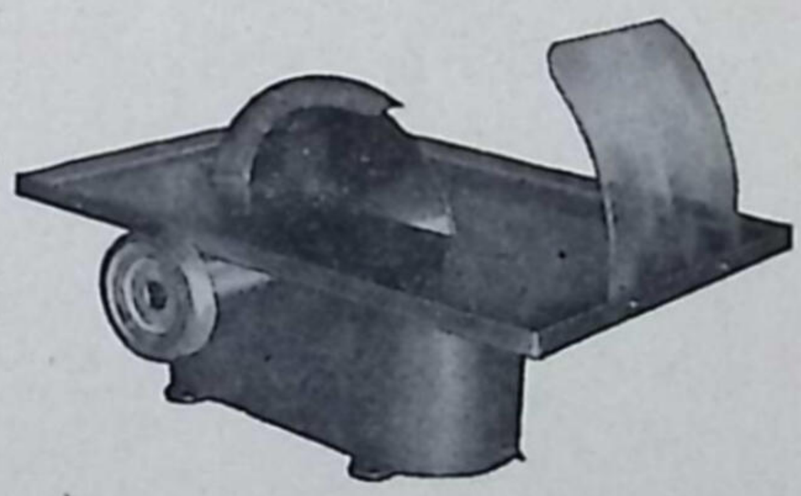
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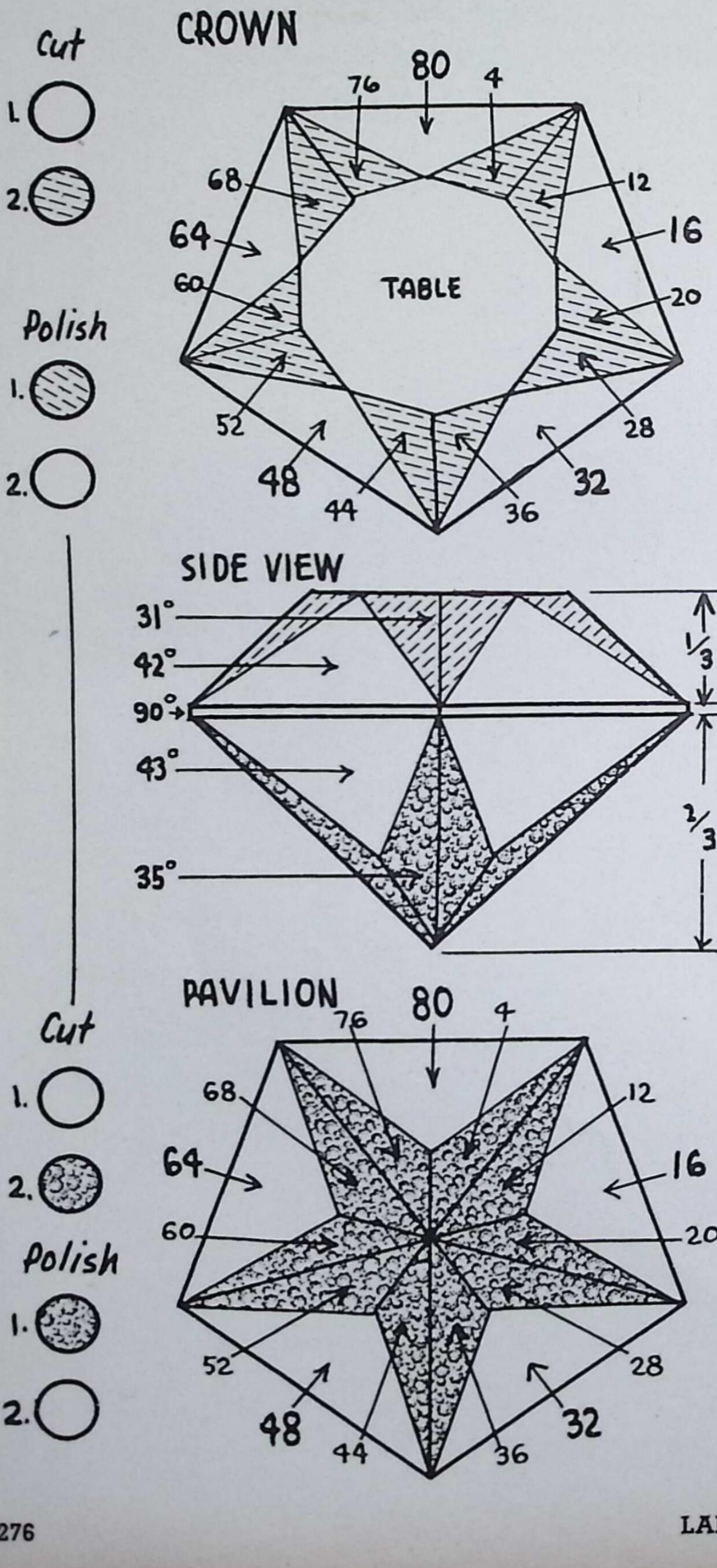
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See polishing order on left, using same angles and index as was used in cutting.

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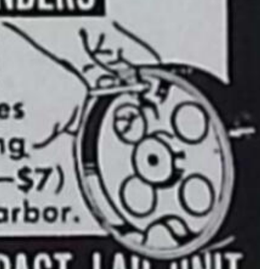
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◆ Types of Torches for Silvercraft

By WILLIAM T. BAXTER
4615 Chase Ave., Bethesda 14, Maryland
Author of *Jewelry, Gem Cutting and Metalcraft*

In this short article an authority answers the puzzling question of most beginners in silvercraft—what kind of a torch is best? It also contains information of great importance to the experienced craftsman.

What kind of torch should I acquire for silver soldering?

This is generally the top or foremost question that has to be answered by the beginning silversmith. A wise choice is sometimes difficult due to the fact few persons are acquainted with the many types of torches.

In selecting a torch one has to bear in mind the type of work to be done; the kind of materials to be soldered; how much the torch will be used, and the amount of money for expenditure. The majority of amateur silversmiths (many of whom are gem cutters who wish to make mountings for their gems) will in all probability begin working with silver and then possibly do some work in gold.

For this reason it is well to know something of the metals used in jewelcraft. Sterling silver, which is 92½ per cent fine (pure) silver, has a melting point of 1640 degrees Fahrenheit. Fine silver, which is too soft for general jewelry use (although excellent for bezels) has a melting point of 1761 degrees F. Coin silver, the alloy from which United States silver coins are made, is 90 per cent silver and has a melting point of 1615 degrees F.

Fine (pure) gold is known as 24-karat gold and has a melting point of 1925 degrees F. The melting points of the various karat golds vary, according to the other metals added. Ten karat yellow gold has an approximate melting point of 1510 degrees F. while 10-karat white gold has a much higher melting point, being approximately 1760 degrees F.

The solders used in working with silver are known as silver solder and are available in sheet, wire, strip and granulated form. They are available with various melting points. Those most commonly used have melting points ranging from 1325 to 1425 degrees F. Gold solders have melting points of 1225 to 1550 degrees F., depending upon the composition of the solder. Platinum solders have melting points much higher than silver or gold solders. They range from 1633 to 2875 degrees F.

If one is working principally with silver, and most of the work is occasional small pieces such as rings and brooches, most any of the torches will suffice. If one is to do casting, which requires the melting of silver or gold, a flame must be used that is not only hot enough but large enough to melt the metal. If the piece being soldered is large, a large flame is usually required.

The combined mouth blowpipe is satisfactory with city (manufactured) gas in soldering small objects such as rings and brooches. This torch is connected by a rubber tube to any convenient gas outlet and is used by blowing into one end of the torch. Unfortunately it does not work too well with natural gas, which is slower burning and has a higher B.t.u., requiring more air.

The alcohol torch is suitable for small work. There are two general types. One requires blowing through a mouthpiece which is connected with tubing to the torch. The other is automatic and pressure is obtained by heating the burner of the torch which causes the alcohol in the tank to expand, thus causing pressure inside the tank. The latter type is excellent but it has one drawback in that it takes time to generate the pressure. Gasoline blow torches may be used for hard soldering, but they are generally very unwieldy.

There has recently appeared on the market a torch that is excellent for the home craftsman in jewelry work. This torch uses canned gas. The torch produces a heat of 2200 degrees F. and uses a non-refillable (throw away) gas container that is about the size of a beer can. These torches are available with several size tips. "The Pin Point" (TP-3) is excellent for small jewelry work.

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In school shops compressed air and gas, either manufactured or natural gas, is often used. This type of installation is cheaper to operate than most of the other types. Any of the good gas-air blowpipes with regulating valves produces a satisfactory soldering flame, the temperature being around 3,300 degrees F. A reducing valve should be used on the air line as a working pressure of 2 to 10 pounds is sufficient. Many home craftsmen use this type of installation, using the air compressor of a paint spray outfit. In using natural gas be sure to get a torch for natural gas.

Commercial jewelers and repairmen generally use oxygen and gas for soldering, using a special torch for this mixture, or a special tip for one of the standard air-gas torches. The flame produced is clean and much hotter than any of those already described, being around 4,900 degrees F. The oxygen is obtainable in cylinders.

The oxygen-acetylene flame may be used for hard soldering, but it must be used with extreme caution, for it has a flame temperature of around 6,000 degrees F. This is the outfit that is generally used for oxy-acetylene welding and brazing. Unless one is very cautious a piece of jewelry will melt because of the intense heat.

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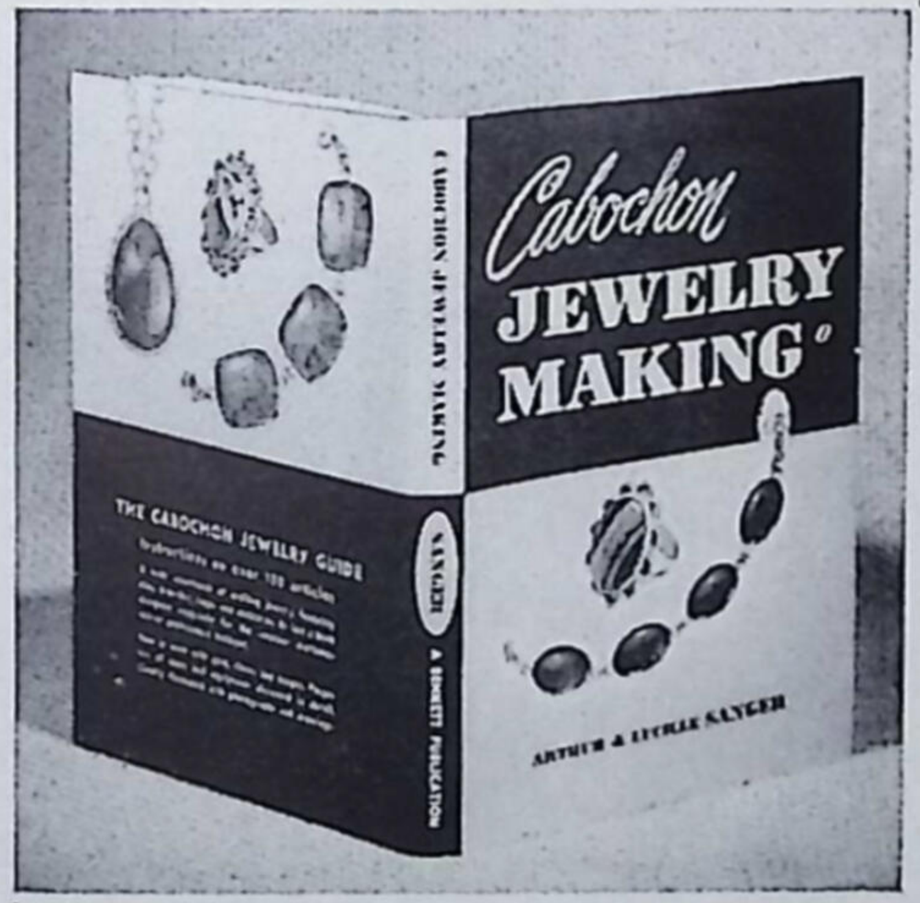
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◆ Musings of A Gem Appraiser

By HARRY L. WOODRUFF, Gemologist
1404 New York Avenue., Washington, D. C.
President *Eastern Federation of Mineralogical and Lapidary Societies*

Appraising gem stones as a business has many and varied angles—and the appraiser has an excellent opportunity to study human nature. Some of the jobs one is called upon to do take a great deal of tact and patience. Some estate jobs require special treatment, especially when several heirs are concerned who have formed romantic and traditional fondness for certain pieces of the estate. Also the lawyers on each side of the family must be convinced that your appraisal is a fair and just one.

Some old estates are very disappointing to the heirs, as the original owner, at some time or another, may have become temporarily embarrassed for cash and sold a large center stone from a brooch or spray to replace it with an imitation, or perhaps a synthetic stone. It is hard for the heir to find that Grandma's or Mother's brooch contains a synthetic ruby instead of the wonderful stone you thought was there.

There are two times the public needs an appraisal—one is before the purchase of an article and the other before it is offered for sale.

A question that is very often asked of an appraiser is "Are diamonds and precious stones a good investment?" Strictly speaking, the answer should be "No," but more can be realized from the sale of a fine piece of jewelry kept over a term of years, than any other thing you buy and use. As an illustration—you buy an automobile for $2000 and keep it ten years. How much can you realize on it? It doesn't even have a blue book value—just sold for junk. But a fine diamond does not deteriorate and should bring almost the original retail cost.

The writer has been appraising gem stones over a long term of years and called upon to appraise many fine large estates. The most interesting and thrill-packed assignment was the appraisal of all the German loot captured by the United States Army. This was an International assignment, and was under the supervision of the International Refugees Organization. According to the Eleven Power Conference held in Paris, the eleven nations belonging to the I.R.O., agreed to relinquish all claim to the loot and have it appraised and sold in the open market, the proceeds to be turned over to the I.R.O., and to be used to rehabilitate the displaced persons under their care.

The story of crime and persecution that is written in this loot is beyond the human mind to imagine. As each country was invaded by the Germans it was stripped of everything of any value. All metal was collected and in the early stages of the war, melted and made into bars of all sizes and shapes. Later there was not time to convert the gold, silver and platinum into bars. It was just collected and put into containers to be melted later. Upwards of 1,000,000 wedding rings were collected and every conceivable kind was represented—even brass ones. Many, many 50 calibre shell boxes were filled with gold teeth, crowns and dentures of all kinds. Anything of this nature that contained any gold, silver or platinum, was taken. Box after box of gold and gold-filled spectacles and many boxes of fountain pens of every description and make.

Watches of every description and make, even the Mickey Mouse, were included in the lot; alarm clocks by the thousands, all thrown into wooden boxes about 3x5x2½′ high; all mashed together; all in bad condition. They were evidently collected for the brass and tin they contained. There was sterling silver of every description from every invaded country, ranging in fineness from 800/1000 to 975/1000, and enough of it to fill the holds of two Victory Ships. The most disturbing part of the job was when containers were opened and contained the altar pieces from Jewish Synagogues and the vestments, worked in silver thread, used by the Rabbis. Silver candle sticks and scrolls, all battered into a shapeless mass, were found. This assignment was

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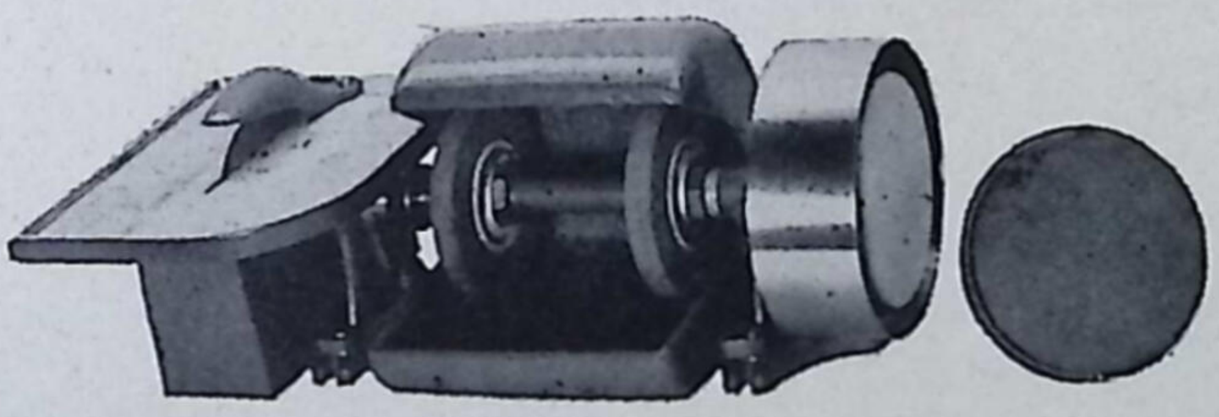
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Akron Lapidary Supply

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the largest job I shall ever be called upon to do, and one that could happen only once in a life-time.

The United States has some very large jewel collections, parts of estates that have been handed down over three or four generations. They contain rare pieces with fascinating histories. The latest engagement of this nature was the checking of the McLean Estate, which contained the famous Hope Diamond, weight 44¼ carats. Also the Star of the East, a large pendeloque diamond of some 80 odd carats. This estate was later purchased by Mr. Harry Winston of New York. The history of some other large estates, also purchased by Mr. Winston makes interesting reading.

E. J. Baldwin, California capitalist, avid sportsman of the "Gold Rush" days, started his career as a cab driver in San Francisco in 1850. He piled up a towering fortune and came to be known as "Lucky Baldwin." Among his outstanding acquisitions were the "Lucky Baldwin" jewels over a period of years for the reputed sum of $1,000,-000. Lucky Baldwin died in 1909 at the age of 81 and left an estate valued at $25,000,000 that contained some of the greatest jewels in the world. This collection contained hundreds of pieces, the prize number being three pear-shaped diamonds valued at $250,000. A legal fight among the heirs tied up the jewels. They eventually came into possession of one of the daughters—Clara Baldwin. When she died in 1930, there was again a legal battle for the gem collection. It was finally decided to turn them into cash. Harry Winston provided the cash and came into possession of the Lucky Baldwin jewels.

The Huntington Collection is another American collection fabled in the annals of fine jewelry. Collis P. Huntington, multi-millionaire, married a second time in the eighties of the last century. His bride turned out to be an avid collector and lover of fine jewels. With almost unlimited wealth at her command she began what developed into one of the world's most remarkable gem collections. The first important Huntington purchase was a necklace of magnificent diamonds, which was reported to have cost $500,-000. The collection grew apace and came to include a pearl necklace which Mrs. Huntington spent many years and

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more than $2,000,000 to find and match. When finished, it contained 161 superb pearls, with a total weight of 2,200 grains. Mrs. Huntington never saw the completed necklace. For just as the world's most valuable pearl necklace was completed, by a cruel irony of fate, she went totally blind. After her death, her foster son Archer Huntington disposed of the collection, which was also taken over by Mr. Harry Winston of New York, in a deal involving millions.

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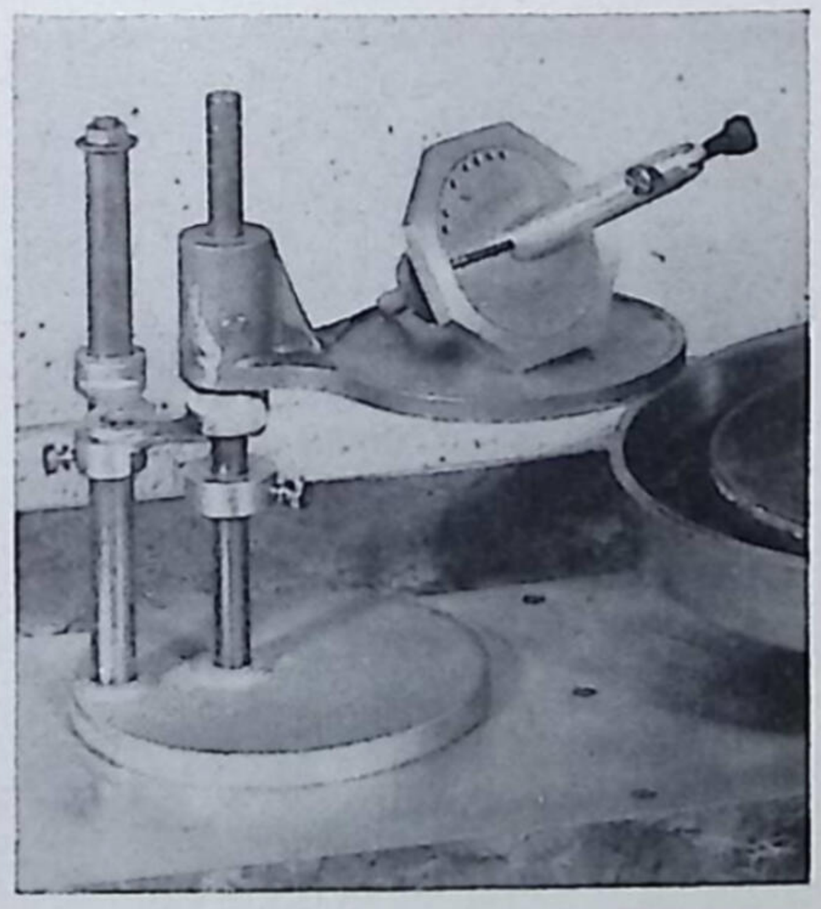
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◆ From Mud To Milady's Neck

By ERIC L. ROBINSON
Colombo, Ceylon

This account of Ceylon's gem industry discloses some of its fascinating secrets, including the sign language of the buyers of gems.

Ceylon gems are famous the world over. It is widely believed in India that one has only to dip one's hand into a Ceylon mountain stream to pick out a fortune. There is no smoke without fire, and it is indeed true that in many parts of the Up-country precious stones have been found. On some estates such stones have been gemed illicitly—and occasionally police court cases have resulted. Now and again the dreams of avarice have come true. Gems *have* been picked from streams—just like that.

In 1928 a Tamil tea-estate laborer was lounging aimlessly on the little bridge over the stream next to Dickoya post office, when, peering over the parapet of the bridge, he spied something blue picked out by the sun's rays in the clear, shallow, running water. He strolled down the bank and picked out a blue sapphire, which he afterwards sold for six thousand rupees.

The merchant who bought it, cut and polished it to such good effect that he afterwards marketed it in South India for thirty-two thousand rupees.

Although the geming industry will always make its exciting appeal to those who love the thrill of a gamble, it should not be thought that the whole thing is a gamble from start to finish. There's a lot of honest to goodness hard work in it, too.

Recently near Ratnapura (Sinhalese for "The Town of Gems"), like most other travellers along that lovely road I was struck by the many geming pits which are being operated within a few yards of the highway. At Pelmadulla we stopped to investigate one of them: to watch men digging precious stones out of the ground. It was there that I realised fully what I had previously known only in theory—that the sparkling gems which, when mounted, make such an impressive picture on the soft neck of a debutante, all come from the ooze of the earth—and often from ugly, black, muddy ooze at that.

There were eight Sinhalese villagers on the job, and their foreman, an English-speaking Sinhalese, was keeping a close watch on them. Half the men were digging, carrying and storing earth. The other four were working below in a square pit of cold, muddy water, up to their loin cloths, the only garment they wore. Holding round, plaited trays, they were busily washing mud, clay, and stones in their search for gems.

I asked the foreman-shareholder on what terms his labor was employed.

"We pay them seven rupees, fifty cents (about $1.50) a week, all found, plus three per cent each of the selling price of any stones they may find," he told me. "That is to say, these eight laborers share equally twenty-four per cent of the value of all the gems we find in this pit," he explained.

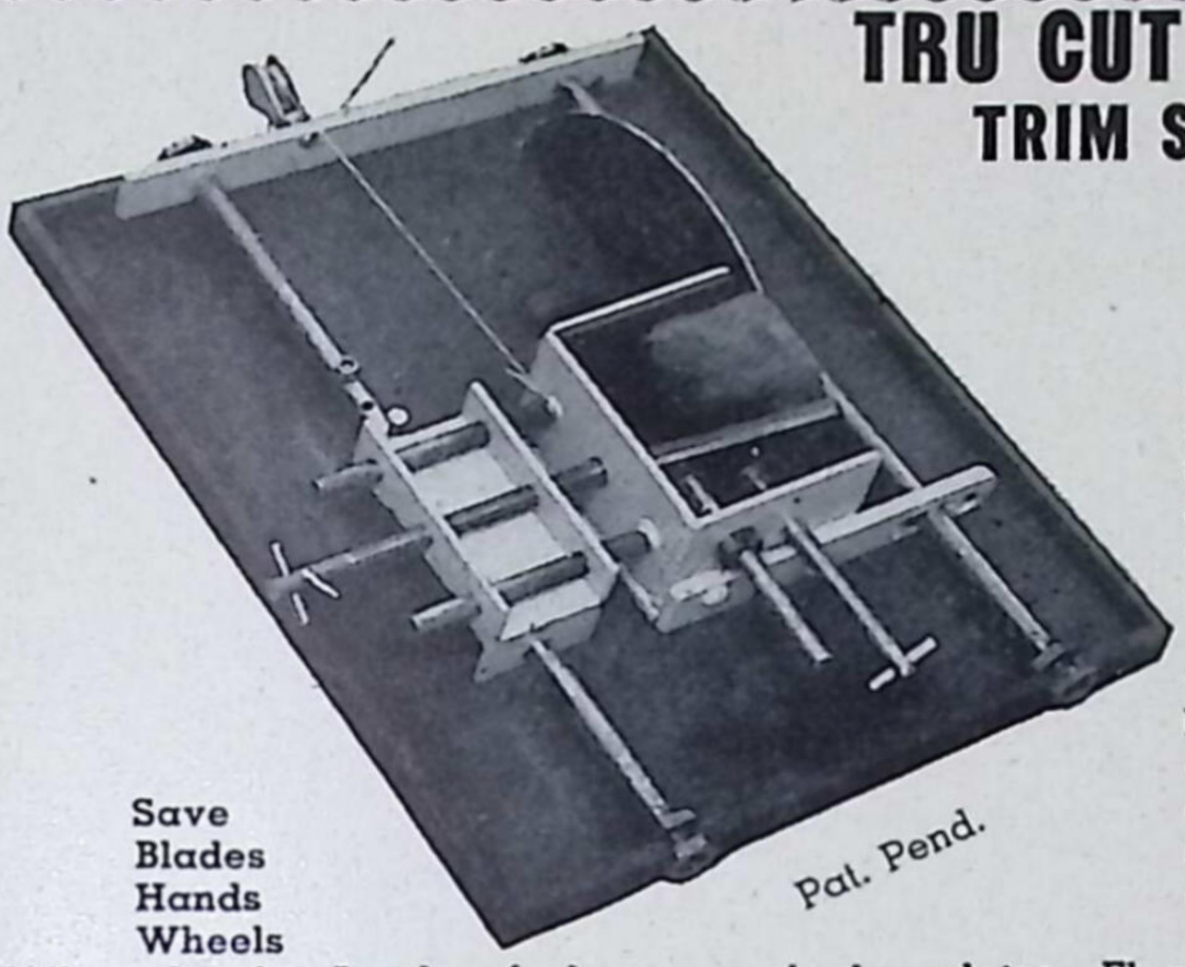
"How often do you find a gem?" I inquired.

"We have only just started in the business, so I cannot answer that question," he replied. "It may be several weeks, or months, before we find anything of real value—or it may not," he added hopefully. "You never can tell. The thing is a gamble."

"In that case, wouldn't these men prefer to be paid a living wage?" I asked. "Surely they would rather have, say, three rupees a day certain and all found, and go without their somewhat speculative share in the profits?"

"Not on your life," he replied at once. "These men wouldn't work here on any other terms. They strongly dislike working in mud and water like this. But the gamble gets them. After all, a few weeks ago in an adjoining pit a gem worth twenty-four thousand rupees was found. Three per cent of twenty-four thousand is seven hundred and twenty rupees—and that's not to be sneezed at. This would be one of the most monotonous jobs in Ceylon were it not for the fact that at any moment a fortune might turn up. The prospect of

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This jewelry has a retail value of $21.00 and it is one of the fastest selling novelty jewelry items on the market. Each item in the lot will be marked with the wholesale price.

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a big find keeps us engrossed in it," he explained with enthusiasm.

All around us lay the pleasing prospect of paddyfields, while in the hazy distance the great, green mountains towered up into a cloudy sky.

"Why do you look here for gems?" I asked. "Why here in this precise spot? Why not over there in the next field, or, say, over there in the opposite corner of this one?"

For the life of me I couldn't see anything to differentiate one spot from another.

"Well, of course, we've prospected the land," said my informant, and he went on to explain how the professional prospector had come with his ten-foot long, steel rod ("about as thick as one's little finger") and how he had gone about the land plunging his rod into the earth as far as it would go, but being careful not to damage any hard obstruction it struck, for fear of spoiling a valuable gem. It seems to a layman a million to one chance against his doing so, but fortunes have occasionally have been lost by a careless prod.

Having struck his rod upright in the ground, so that a good deal of its length is hidden in the earth, the prospector twangs it with his finger and then listens with his experienced ear for the distinctive ring which indicates strata of stone, known in Sinhalese as *illuma*.

When such strata are found on Crown land the geming rights are immediately publicly auctioned by Government. Almost overnight small companies are formed, the partners taking out shares according to the capital or labor, or both, which they contribute. The height to which the bidding rises largely depends on the reputation of the prospector, who is himself not infrequently the chief shareholder.

When a gem is found, the news spreads like wildfire, and buyers come from far and near to inspect it and make their offers. In order, for obvious enough reasons, to keep the proposed price secret, having examined what looks to the uninitiated like a shapeless piece of colored stone, the buyer takes out his handkerchief and places it over his own hand and over that of the *mudalali* who is selling it, rather like a conjuror about to do a trick. Underneath the handkerchief the bid is being

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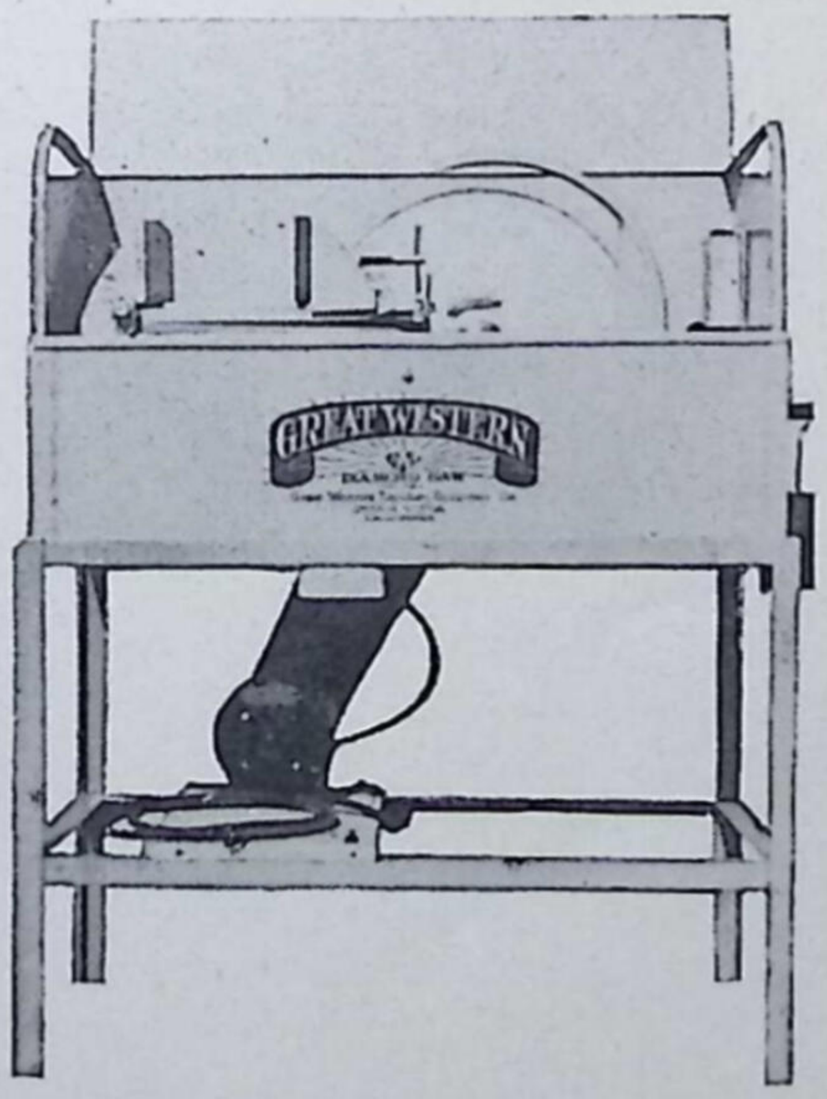
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made by means of a code known to those in the trade. Here it is:

First finger only grasped means "one."

First and second finger grasped means "two."

First, second and third fingers grasped means "three."

First to fourth fingers grasped means "four."

The palm touched by the forefinger means "five."

The forefinger drawn from the base to tip of the little finger on the inside means "six."

Similarly, from the base to tip of the third finger means "seven."

From the base to the tip of the second finger means "eight."

From the base to the tip of the first finger means "nine."

The forefinger drawn across the palm from the little finger to the first finger means "half," that is, " half a hundred," 'half a thousand," "half a lack" or "half a crore" according to the denomination given to the thumb at the time.

If only half a forefinger is grasped it means "a quarter."

Half only of the forefinger and the second finger grasped means "half."

"Three-quarters" is indicated by grasping half each of the forefinger, second and third fingers.

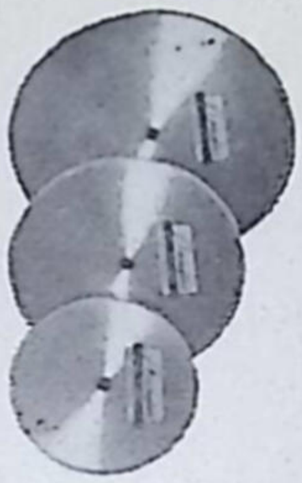
The only words used, spoken in a hushed whisper, to indicate the value of the unit in use underneath the handkerchief, are three in number. "Pounds" means that everything happening under cover must be multiplied by ten. Usually, however, the units used are larger: either the Tamil *atchu* (a hundred), or *periya atchu* (a "big hundred," by which is meant "a thousand").

Factors determining price are many. The most important is not size or weight, though these are significant, but quality. If a gem is of "the first water" it will fetch a good price, other things being equal. Some of the other things are the absence of flaws or cracks in the uncut stone, which may splinter when cut if these are present.

Again, "the silk" is all important. "The silk" is the presence of "a mist in the stone. One connoisseur compared it in my presence to "cigarette smoke." To me it appears to be a sort of translucent skin covering the stone. If the silk is too heavy the gem looks lifeless.

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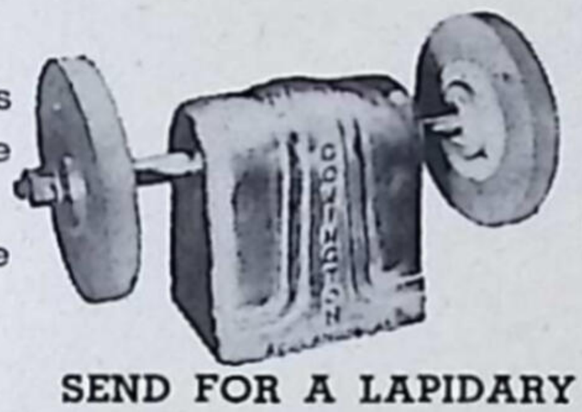


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If, on the other hand, it is insufficient, the ray is weak and watery. The best stones, as is well-known, are those with a strong, lively ray.

A Colombo jeweler lost heavily over this very point not long ago. He purchased an uncut stone for twenty thousand rupees, which, when cut, proved defective in its "silk." He had to dispose of it for only two hundred rupees. Similarly a stone found at Pansalawatte, not far from Balangoda, was bought in an auction for five thousand rupees and had to be sold for one-tenth of its original price, because, after cutting, it was found that the ray was diffused and would not focus.

Most of the gem-cutters are Muslims, and since the cutting of a gem either makes or mars it, conferences are frequently held before starting work on a valuable stone. The experts gather and discuss the matter and view the stone from all angles. Sometimes several weeks may pass before a decision is reached.

The cutters use a paste with a secret formula. Among its ingredients are carborundum and such simple items as powdered paddy husks boiled with rice starch. This paste is applied to a tin wheel which is revolved rapidly to cut the gem. Next process is polishing, done on a revolving copper plate coated with a still finer, though similar paste to that used for cutting.

The Rodhyas, the "gypsies" of Ceylon, are said to be adepts at making "synthetic stones" from the powder which results from cutting and polishing. They carefully filter it from the paste, and then, with a secret formula of their own, handed down from generation to generation, they are able to smelt stones which are often capable of deceiving all but the expert. He, however, looking for the grain,(minute parallel lines, only visible under a microscope, which bring out the ray, like a live fire in a stone), finds all these and more qualities absent from such "phony" productions.

Ceylon, like all other countries where the gem trade is carried on, has her "quack jewelers" out to deceive the unwary, at any cost to their country's good name. The writer speaks from bitter experience of a jeweler in an impressive emporium in Bombay, India.

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JADEITE: (From Japan.) New find from a rare locality. Tough, compact, with a vitreous to pearly luster, semi-translucent to opaque, white, white and light green, white and medium green, white and dark green blanks of fracture-free material 16x14 mm. by 6½ mm. thick. White blanks at $1.25, white and light green $1.75, white and medium green $2.25, white and dark green $2.75 per blank.

LAPIS LAZULI: (From Afghanistan.) Rich royal blue in color, liberally spangled with pyrites which resemble specks of silver. It has become increasingly scarce and is now sold by the carat, which is unusual for a cabochon stone. Good quality material in small pieces from the size of a pea to the size of a peanut at $6.50 per ounce. Takes a nice polish with chromium oxide on leather lap.

ALMANDINE GARNET: (From India.) Strikingly beautiful purple to brilliant light purple-red color for fine faceted gems (RARE). In pieces from 6 to 35 grams at $1.50 per gram.

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Two hundred and fifty rupees was paid for a beautiful "ruby" ring. Ten guineas customs duty was added to the price when it was taken into the U. K. during the war. But two of London's West-End jewelers agreed independently of each other that its value was not a penny more than five guineas. Total expenditure on the deal was three hundred and eighty rupees. Real value was only sixty-five.

Let me pass on the lesson, so dearly bought, which I learned from that experience—pass it on free. Had I gone to a jeweler of long-standing and good name (of whom there are many in Ceylon, as there must be in India), I need not have lost that money. Jewelers who sell fakes soon get found out by the people on the spot and have to "move on." If you buy from a gem dealer of reputation you will pay no more and you will receive value for your money. If the sum involved is something running into four figures or more it is advisable to have the stone examined by an independent, expert gemologist before buying it. If you take these simple precautions you will not come a cropper as I did.

★

The hardest stone known to man is the diamond. In the profession it is said that the hardness of a diamond is equal to ten points. Chalk comes right at the bottom of the scale—one point. All other stones, precious and otherwise, lie somewhere between the two.

Ceylon gems do not include diamonds, but the sapphire family, which is estimated in the scale at nine points, is found extensively. This aristocratic family includes not only the rich blue sapphires, which one usually associates with that expression, but also pigeon blood and other rubies, as well as yellow and white stones, which, though not blue, are genuine sapphires.

Ceylon is also celebrated for its cat's eyes, softer stones with a degree of hardness estimated at seven points. Like the Ceylon star stone, the cat's eye is cut without faces. As one holds it under a light it comes to life and looks for all the world like the live eye of a cat.

The most valuable of Ceylon's stones, weight for weight and quality for quality, is not the blue sapphire, as many suppose, but the true pigeon blood ruby,

of which Ceylon produces the best in the world. Until recent times the Maharajahs of India purchased these lovely rubies extensively. Despite the decline of the Rajahs, India is still Ceylon's best market for rubies.

Stones unique to Ceylon, and found nowhere else, are the peacock blue sapphire and the lesser, but beautiful Matara "diamond" white stone.

It has been said that "as long as there are women there will always be a market for gems." Ceylon's star-stones and cat's eyes earn many dollars in the U. S. A., Ceylon's best customer for these particular gems. The U. K. buys most of the sapphires—especially the graceful cornflower and peacock blues, like the magnificent cornflower blue sapphire in Princess Elizabeth's ring, one of the many distinguished gems of which Ceylon has good reason to be proud.

(Editor's note: This excellent account by Eric L. Robinson first appeared in the last Christmas edition of *The Times of Ceylon,* through whose courtesy it is printed here for our American readers.)

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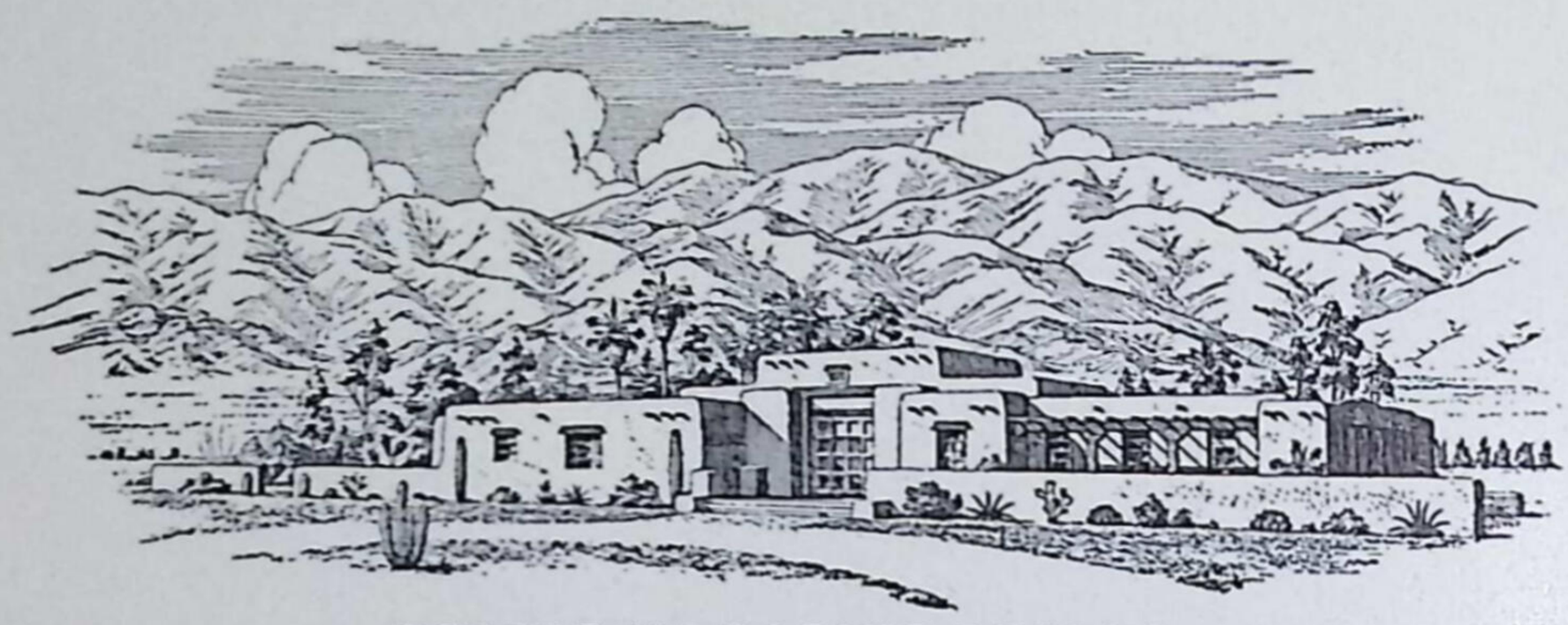
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Personal Facets

By LELANDE QUICK



DESERT MAGAZINE PUEBLO
NEW HOME OF THE LAPIDARY JOURNAL

Since the *Lapidary Journal* moved to the desert we have received many letters from subscribers congratulating us on the move and assuring us that it should make us much happier. Some of them urge us to tell something of our life here and describe our situation. While this is not in the line of helpful information we do believe that an account of some of the things we have experienced in six months may be of interest.

First a word about our printers. We are occupying generous space in the *Desert Magazine* Pueblo, a drawing of which appears above. This building is a tribute to the vision of the Editor and Publisher of *Desert Magazine,* in which we have had a monthly article with no misses since August 1942. When Editor Randall Henderson was in the Sahara desert during the last war the idea occurred to him to build at this spot. As soon as he returned home we met here and considered the building of a desert crafts center and publishing plant. At that time we had no thought of a magazine of our own. General Patton had trained his wonderful army here and nary a greasewood bush remained. The upshot of all this was that Mr. Henderson and his brother Cliff acquired the 1600 acres on the south side of Highway 111 where it is joined by highway 74 and 20 acres were set aside for the new publishing plant.

The building contains 18,000 square feet and is one story in Pueblo style . . . the only native American architecture. It has every modern convenience and is substantially built for all time with huge hand-hewn timbers that breathe strength from every splinter. The building cost $210,000 and the addition of machinery, etc., has brought the investment to nearly $300,000. The building and its equipment was set down here without a customer but Mr. Henderson had a profound faith in the future of the desert as a place that would be sought out by Americans seeking peace, beauty, quiet and good air. People bring business and business needs printing. The plant is now as modern as any in the Los Angeles area and the business has been built to capacity as the Desert Press has achieved a wide reputation for its excellence in brochure printing, etc. In all of this we have not a penny investment and we have no connection, contrary to increasing rumor, with *Desert Magazine*. The *Journal* is merely a tenant of the fine building and the Desert Press prints our magazine in addition to its own. The rest of the acreage has been developed into the planned community of Palm Desert, with its new ideas in desert living and its fabulous Shadow Mountain Club.

The view from our windows is one of the grandest in all America. We see two enormous peaks, San Jacinto and San Gorgonio, both over two miles high and snow covered most of the year. We are in a rich valley surrounded by several mountain ranges and among the world's finest date groves. Nearby are vast acre-

TWO IMPORTANT NEW BOOKS

CHINESE JADE CARVING
By S. Howard Hansford

This newest book on jade has been mentioned in the **Journal** on several occasions. It is published in England and by special arrangement we have imported 100 copies which will be sold to customers as the orders come in at $6.00 per copy postpaid with liberal discount to dealers plus postage.

The book is well bound in boards and contains 32 pages of plates plus another in color and maps of the jade locations. It contains 180 pages 9¾" by 7½" and it is really a buy in today's book market where prices advance almost daily.

This authoritative and carefully documented work represents a new and important step forward in the study of Chinese jades. The author spent many years gathering and sifting material in museums all over the world and in the centers of Chinese production. He also made a search of the Chinese literature for writings throwing light upon the history of the craft. His inquiries carried him to the jade workshops of Peking and to the many great jade collections in America.

The exposition of the technique of jade carving (the main theme of the work) is especially valuable, since no such circumstantial account of it has previously been available. Many controversial questions are discussed and some original solutions proposed. The conclusions undoubtedly present the most illuminating review of this fascinating subject that has been printed.

The book is an account of the origin and evolution of the carving technique but in developing the thesis the author explores the mineralogy of jade and other associated angles.

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This book is published by the **Lapidary Journal** as a service to the amateur lapidaries of America and is for sale for the small price of only $1.20 postpaid with liberal discount to dealers plus postage.

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LAPIDARY JOURNAL • Palm Desert, California

ages of grapes, citrus and cotton. The pine forests of the high mountains are about a twenty minute drive. The most fantastic desert oasis in the world, Palm Springs, is 14 miles west and Los Angeles about 125 miles beyond that. Our town is just beginning to get out of swaddling clothes and everything in the summer closes up as tight as a funeral drum. We have a twelve mile drive to the nearest bottle of milk. When they threatened to shoot us for a rabbit recently, if we didn't get our hair cut, we had to drive 22 miles to find a barber.

But there are many compensations. One is that the radio will not work. We are so near Mexico that the many Mexican stations, with no restriction of any kind, drown out the good American stations and the result is that we haven't had the hide scared off us by a Walter Winchell Sunday broadcast since we came here. We hear no commentators and we no longer get nauseated at the "humor" of the radio.

The nights are something unbelievable in their quiet and beauty and to see a sunrise again after the long years of foggy coast weather is a delight that is still keen after six months. We have had some of the vilest weather here we have ever experienced and the natives all assure us it has been the worst summer the desert has known during their time. The gnats have been worse and the crickets have been worse than ever before. The sand storms have blown longer, oftener and harder and the days have been hotter . . . 105 to 116 degrees, "cooling off" at night to 90 to 95. This was topped by a recent cloudburst that brought more than three inches of rain in less than a half hour. The average annual rainfall is less than three inches. But this last week in August has been the most delightful week of summer weather we have ever experienced and as this is written we feel better and look better than we have for many a year.

We practically have to operate our own post office of course but we now get better service by far than we ever did in Los Angeles. The mail bags are delivered to us and set up on racks. As the *Journals* are stuffed in the envelopes they are placed in separate pouches, one for each state and one for each city where we have thirty or more subscribers. When the issue is ready (about the 26th) a truck takes the mailing to the Palm Springs station, about twenty miles out on the desert, and the pouches are placed on the Southern Pacific trains as they pass east and west. The result is that Chicago people get their *Journal* about as quickly as Los Angeles people and the only subscribers who have not gained are the folks on the Eastern seaboard where the *Journal* is delivered about two weeks later, or about the tenth of the following month.

From October 15th until May 15th we have an art gallery displaying much of what is good in painting and sculpture by the many desert artists. The displays change monthly and people come long distances to see the showings. Our personal gem and mineral collection is on permanent display and there is much to interest the visitor who wishes a cool so-journ for an hour or two. We shall be glad to see any of our readers who drive past our door on their travels and we are usually here some part of every day and the building is open every day after October 15.

We could easily get lyrical about the beauties of the desert but we'll leave that to the other half of the *Journal* team. Here is what Aletah has to say about the after-effects of our recent big blow . . .

"Spring came to the desert in August! These vast expanses of desert gray and brown are now covered with a carpet of gold pectis flowers. Here and there a clump of purple verbena shyly lifts its flowered head.

"Most people think of a cloudburst as a catastrophe, and it is—sometimes. But this time a seeming miracle has followed in its wake; trees are a sparkling green and all desert plant life has come alive again. The jack rabbits frolic and nibble among the new green shoots that suddenly have appeared on the desert floor; lizards cautiously scuttle from their holes, lift their heads and look in wonder at this Heaven-sent green for their enjoyment.

"Yes, it is a miracle, for after months of heat, humidity and tormenting insect life we once more see a desert paradise—cool clear nights, invigorating mornings, hills and mountains clearly etched against a blue-blue sky. Truly it is Spring again—and in August, if only for a little while."—Aletah Quick.

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◆ Shop Helps

If you have found a useful short-cut in your shop send it in. We will give you credit. The most skilled craftsmen, as well as beginners, find this department useful.

Contributed by L. V. LOVE of *Love's Gem Shop,* Monte Vista, Colorado

An indispensible piece of equipment in our shop is our air compressor. An air blast will clean a sander as often as needed and eliminates the need for "washing" with a paint brush and water. The same air blast will dry up work for examination when grinding to close tolerances, etc.

* * *

To get air at low cost procure an old piston-type refrigerator compressor with the tank if possible, or any tank of suitable size and pressure limit will do. A ¼-H.P. motor will do the job. An automatic pressure switch will be needed also.

* * *

To get power and slow speed for power feed saws and other uses try swiping that old cream separator the next time you're down on the farm. The smaller sizes are best for saws. The gear ratio runs from about 140 to 1 to better than 200 to 1 on some kinds. Direct drive to the spindle and put a pulley where the handle was. There is usually an intermediate speed shaft to boot where the motor attaches.

* * *

To get full use from those sanding discs try making the wheel out of plywood or other well seasoned wood and cementing with rubber cement a half inch sponge rubber pad and then using rubber cement to hold the disc to the rubber. Use a vulcanizing cement obtainable at a tire shop and as it will not set up so tight you cannot peel the worn discs off and apply the new one. Should the discs stick too tightly and tend to tear the sponge rubber, apply a piece of old rubber apron to the pad first, then apply the disc. Remove only the disc for replacement. This will work with either wet or dry sanders.

* * *

When polishing work such as inlay with both stone and silver to polish we find chrome oxide works well.

* * *

Some grades of turquoise have a tendency to glaze over when sanding unless sanded on a new sander. To get a good finish fast on even a worn sander try letting the stones stand in water until you sand them. Just enough water to touch the stone is enough. To dip them in water as the sanding progresses will help also.

* * *

If you have material that undercuts a bit, as some types of agate will, try sanding on 2/0 sandpaper in the conventional manner. Speed is critical. Try 1000 to start with. Obtain a satin finish on the critical spots and polish on leather with your favorite polish. It won't exaggerate the pits to say the least.

* * *

So much advice on grinding wheels includes this statement. "Dress the wheel with the diamond dresser." When a wheel is dressed or trued up with a diamond it is practically as useless for grinding as a greasy door knob. Use the wheel type dresser (following the diamond dresser) lightly but steadily and apply the dresser at an angle to the wheel. Use a slight shearing action and don't let it bounce. One type of wheels for your Huntington type dresser are interlocked, but loosely, and make an excellent wheel surface.

* * *

Always start your grinder before turning on the water and turn the water off before stopping the grinder. This is especially advisable on the larger wheels. It is impossible to true or dress properly wheels that have soaked up water.

* * *

In making soft metal molds for wax patterns, when casting several pieces to make the mold, instead of using several metals of varying melting points use acetylene to make a carbon black part on the separate casts. You can then use one metal for all pieces without danger of melting together. Ordinary plus type metal is good for molds that are not too detailed.

Calendar of Events

October 12-13-14—Gem and Mineral exhibit of the *Paradise Gem and Mineral Club* in conjunction with Paradise (Calif.) Fall Festival and Apple Show.

October 20-21—The Second Annual Gem and Mineral Show of the *Whittier Gem and Mineral Society* at York Riding Club House, Santa Fe Road, Whittier, California. Free admission. Commercial displays.

October 20-21—Fourth Annual Gem Show of the *Hollywood Lapidary Society* to be held at Plummer Park Recreation Bldg., Hollywood, California.

October 25-26—The first convention and show of the new *Eastern Federation of Mineralogical Societies* to be held in Washington, D. C. See page 271.

November 3-4—Annual Gem and Mineral Show of *Sacramento Mineral Society* at Turn Verein Hall, 3349 Jay St., Sacramento, Calif. Working lapidary exhibits, dealer displays, free.

November 3-4—The Fifth Annual Gem & Mineral Show of the *Orange Belt Mineralogical Society* to be held in the National Orange Show building at San Bernardino, California.

December 1-2—Death Valley Encampment (Calif.) for rockhounds, square dancers and artists. Sponsored by the Death Valley '49ers. Take your gems and minerals for competitive displays.

A SPECIAL BARGAIN

FOR THE JEWELRY MAKER —

We have been very fortunate in obtaining a nearly new rolling mill for silver and gold sheet. This mill, which has 3½" rolls, cost $115.00 only three months ago. It has had only one small piece of silver run through it. We guarantee that this machine is in perfect condition. Special at only $87.50, crated, F.O.B. Berkeley.

RING GAUGES (Sizing rings) —

Due to an unprecedented amount of orders for our new plastic ring gauges we were temporarily out, to the disappointment of many of our customers. These fine gauges are now back in stock, we are happy to say. Only one-third the cost of most metal ring gauges these plastic models are of great use in obtaining finger sizes. **Only $1.00 each.**

SYN-CHAR SOLDERING BLOCKS —

Very handy to have for gold and silver soldering. Will not break after heating (like regular charcoal) and less expensive too. 4½"x3"x¾" 60c each.

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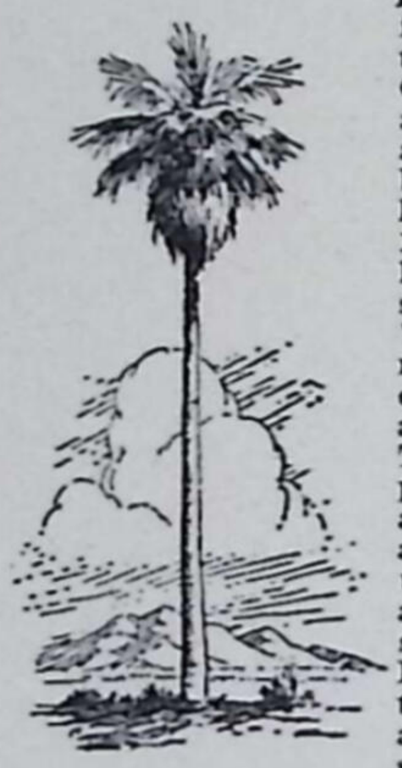
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We import our own material and can offer unusual items. Try our memo selection plan. Write for free blooklet.

2183F Bacon St. **PLUMMER'S** San Diego 7, Calif.

Here We Are Again



The response to our ad in the April LAPIDARY JOURNAL forced us to pass up the August issue.
Our Fall special is a package of three cut and polished stones, a bracelet set 1¾" in length, a brooch set 1⅜" in length, and a ladies' ring set, either standard or dinner. These three stones may be either matched or of different materials, as desired.
The entire cost of this package is only $2.00, as we pay all postage and taxes, and our usual money-back guarantee assures complete satisfaction.
Especially directed to the Silvercrafter with a Christmas list, we sincerely believe this offer to be unbeatable.
This offer good until December 1st, with a limit of one order, at this special price, to a customer. Additional orders $3.50, all taxes and postage included.

The Western Gem Shop

1915 East Highway U. S. 66

Pat Dilley, Proprietor Glendora, Calif.

GEM DRILLING EQUIPMENT

Professional diamond drills 1/16" bonded. Shank size 3/32 . . . . . **$6.50**

Stainless steel 3/64" seamless drill tube 3 inches long—three pieces for . **1.00**

Fountain pens with funnel and swivel for desk sets, 3 (complete) for . . . **5.80**

Bead making mill — drill press drive **48.50**

Note: Bead making instructions—**$1.00**

We have a few strands of graduated Wyoming Snowflake Jade beads for sale. Length of strand approximately 17". Price **$75.00** plus tax

A recent ad stated we had only fair jade and that we were looking for some good stuff. We can now report that we have a little good jade; a lot of fair jade but no excellent jade. Still looking.

McGILL'S

Stevens Point, Wisconsin

MYSTERIOUS PHENOMENON

(As related by H. L. Zollars, with his tongue in his cheek. Mr. Zollars is Editor of *The Voice*, bulletin of the *El Paso Mineral and Gem Society*.)

Being an indolent sort of fellow with perhaps a touch of *manana* from long residence in the Southwest, I always put off until tomorrow what should be done today. As tomorrow never arrives, a great many of the things which I plan to do are never completed.

It was thus with my big diamond saw. Constructed in my own shop long before the fine ones now on the market were even on the drafting board, it is a hard-looker but full of efficiency. Sixteen years ago I filled the large coolant tank with a mixture of kerosene, flushing oil and lard oil and pushed the switch to the motor. In the years that followed I cut thousands of slabs of agate and jasper, wore out hundreds of diamond saws, some of which I had charged myself and others purchased from leading manufacturers, with never a thought of cleaning out the sludge until it was brought to my attention in a forcible manner.

While sawing a large hunk of beautiful agate about a month ago I detected a strange odor in my shop, heard the saw give a groan and the motor start humming. Cutting the switch at once and raising the cover I was faced with a cloud of smoke. When it cleared away I could see that the accumulated sludge had risen to the level at which the coolant was carried, consequently the saw had heated and stuck. Although I was then engaged in the overhaul of a delicate piece of machinery for a customer, I stopped at once and began the removal of the sludge with a small shovel and a bucket. As I reached the area immediately under the ruined saw blade, I detected some queer, hard objects which I took to be pieces of stone which had been flawed and had fallen into the pan. In all I recovered 11, covered with oil and sludge, which I placed in a pan of solvent for cleaning and further examination.

That big reservoir yielded a surprising amount of sludge of a strange, sticky, molasses-like consistency, which was dumped in the alley to adhere to truck tires. It was only after freshly mixed coolant had been placed in the pan that the rocks found therein were clean enough to examine closely. They were found to be all uniform in size and

shape, almost perfect cubes, fairly heavy and with a brilliant sheen in the sunlight. Deciding to grind one corner of one of them to determine the hardness and structure, before I realized what I was doing, a deep groove was worn in my 100-grit grinding wheel. Having a piece of flawed sapphire in a drawer, I tried the bright cube upon it and found that it at once easily made a deep mark upon it. Slipping into the house I secured an old heirloom from Jasper Jane's ancestors in the shape of a crudely faceted diamond, kept unmounted in a moleskin sack. With a little effort and to my great surprise the cubic stone made a small but easily seen mark upon one of the pavilion facets—it was as hard or harder than a diamond.

One of the eleven specimens was submitted to a noted local authority and a member of our club who wishes to remain anonymous; one was sent to an Eastern gem authority and one to a firm on the West coast. In the mean time I determined to saw one in half and borrowed a fine little diamond saw with a blade made from a bean can top. Charged with 320 diamond bort and with Jasper Jane and myself taking turns watching and keeping the cutting mixture replenished, the stone finally fell apart after three weeks of almost continuous sawing. Under a strong glass the internal structure had an appearance never noted before, with superb brilliance and light dispersion, even though unfaceted.

Belated reports from the gem experts confirmed the fact that the stones were diamonds, with a cubic structure seldom, if ever, seen, and with a very strange crystallization, very hard to detect with even the most delicate instruments. It is the consensus that they were formed from the atoms of the diamonds worn away through the years of friction, the atomic attraction being magnified in some manner by the agitation of the coolant, the mixture of the hydro-carbons in the oils used or by a certain cycle of vibration set up by the machine. Some have advanced the theory that it might have been caused by the atomic explosion which was detonated near here in New Mexico. Since it has leaked out that diamonds of such queer structure were found in my diamond saw splash pan, someone is continually pushing my door bell; telegrams

THANKS

for another wonderful summer of business and the pleasure of meeting old friends and making new ones.

For those who did not get to visit our shop we have a little "get acquainted" special — 25 identified mineral specimens from the Rockies, postpaid anywhere for **$1.25.**

For those who want something extra nice, **and different,** we have some more of that green tea-leaf, agatized wood for **$2.00** per pound.

• • •

Yellowstone Agate Shop

P. O. Box 4 **On Hiway No. 89**

LIVINGSTON, MONTANA

CHAS. AND CONNIE MILLER

Have You Tried

Our Approval Service
For Christmas Gifts

No. 1 SELECTIONS—$ 1.00 to $ 5.00

No. 2 SELECTIONS—$ 5.00 to $10.00

No. 3 SELECTIONS—$10.00 to $25.00

Please state if selection is wanted for men, women or children. Give ring sizes or other pertinent information.

Suggestions: Silver Preserve Spoons, Gemstone in handle — **$3.75;** Birthstone Buttons, assorted prices; Carved Gemstones in your choice of mountings; Hand tooled leather purses, **$6.50** to **$35.00** including shoulder bags; Hand turned Alabaster lamps, **$3.50** to **$15.00;** Scenic lamp shades—actual photos in natural color **$2.75** to **$20.00.**

Send requests in early while Selections are available

Satisfaction or money back guarantee

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Diamond Saw Blades

FOR EFFICIENCY

A really fine saw blade that is giving hundreds of users complete satisfaction.

They are accurately made, really flat and fast cutting.

Approved ceiling prices established by Office of Price Stabilization

6"	$ 7.50	8"	$ 9.80
10"	12.75	12"	15.60
14"			19.40
14" Heavy Duty			24.20
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MEXICAN AGATE

FOR CABOCHONS!

Here is **NEW** material that you must try. Predominantly banded agate in beautiful pastel colors of whites, lilacs, reds, and pinks.

MEXICAN AGATE offered now in choice pieces trim-sawed from slabs. Pieces are all different, unfractured, and average 1 to 2 sq. in.

3 pieces ..... $1.00 p.p.
12 pieces ..... 3.00 p.p.
Rough (walnut-size pieces)
1 pound ..... $1.50 p.p.

Larger slabs on approval.

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307 Admiral Boulevard
Kansas City 6, Missouri

come in by the ream and the phone never stops ringing. All want to know more about these sludge-made diamonds and to purchase one or more of them. It has gotten to such a stage that Jasper Jane insists that I go fishing and use them for sinkers. She has not entirely recovered from the pork and bean diet which we were forced to undergo in order to secure enough of the can tops with which to replace those worn out in the sawing of one of the gems.

Up to date I have refused to sell or in any manner dispose of even one of these gems, which promise to yield me enough income upon which to retire. However, I have offered a famous diamond cutter one of them if he will completely facet one of the 8½ carat stones. His latest report, which is very encouraging, is that, with the table and some of the crown facets completed, it shows a fire and brilliance that outclasses even the man-made gem, Titania.

At any rate I have had a most interesting experience and the sludge pan of my diamond saw is nice and clean. Others who saw and process stones may find the same formations in the sludge of their saws, with many variations of the cubed diamonds found in mine. It would indeed be interesting to hear from any others who encounter any such phenomena as mentioned in the foregoing article.

(Mr. Zollars, and every rockhound, should have our new book *The Diamond Saw and Its Operation*. See page 297.)

* * *

Don't take the foregoing article too seriously. In the August issue we published an account of lap lice by the same author and many people thought it was the truth. Witness a sample of the correspondence—

Chihuahua, Repooblic de Mehico
Huly the feefteenth

Senor de Edi Tor:—Por a time so very long I find and cut ze rocks por ze rings, por ze finger and por ze arm. My freen from Paso del Norte reed to me about ze scratches make by ze lice of ze lap. Also I hav geev ze scratch of ze head and have see ze scratch on ze stones made by zose lice of which you tell. I getta ze ointment de Larkspur and putta on ze head and also on ze laps. On ze head ze scratches no more be, but on ze stones, yes. I no sabe wat you mean wen you say "continued vigilance" to

keep ze lices away. Mus I soaka ze head and ze lap with ze ointment de Larkspur on all ze dias of ze semano? If ze Edi Tor say "si," zen I do nothing but soak.

Forever the freen de la
Houn de la Rocks,
Augustin Pustachio

* * *

FRANK CAMPBELL KILLED AT PRIDAY RANCH

Just as we go on the press word reaches us that Frank J. Campbell of Waterford, Mich., was killed when a boulder weighing more than a ton fell upon him as he was excavating moss agate at the Priday Ranch location near Madras, Ore. Mr. Campbell was well known among rockhounds all over the country for his interesting accounts of his gem hunting travels appearing for several years in the *Mineralogist* and his attendance at nearly all the shows.

* * *

ADVICE TO THE LOVELORN

By RUBY SPINEL

(as told in the *Lik-'n-Lap* of the *Coachella Valley Mineral Society*)

Look GNEISS—

Never look like an old JADE or an old FOSSIL; the VARISCITE of both are revolting—

Be mannerly and PERLITE—

To eat PYRITE use your fork and don't let your APATITE show for stuff that comes in QUARTZ, lest she think it's a CINNABAR served you anything stronger than COKE—

Don't try to be TUFF or as hard as FLINT—

Never carry a BLACK-JACK or likewise a CARBON, lest sooner or later dry bones MARCASITE where you fell—

If you must be a WULFENITE go find yourself an AMBER and don't GYPSUM poor fellow out of his PRECIOUS OPAL—

(WILLEMITE but JASPER never WOOD!)

SCHIST remember this; swim or ZINC on your own merits.

Follow these rules and you can soon take your PICK and win a lot of PRASE, but don't take too much for GRANITE—anyway, not JET.

"BRECCIA my children" follows a GOLD ring set with DIAMONDS. AUGITE—so what? It takes a lot of BRASS but they STILBITE.

PRIDAY RANCH SPECIAL

Good only while present stock lasts.

Red Moss Nodules (3 lbs. 6.50)	1 lb.	$2.50
Nodules from Plume Bed (Plume not guaranteed) (4 lbs. 5.00)	1 lb.	1.50
Priday Ranch Nodules (2 lbs. 1.25)	1 lb.	.75
Polka Dot Agate	1 lb. .75	2 lbs. 1.25
All of above (total $6.00) for $5		
Oregon Rhodonite	1 lb.	1.00
Obsidian (Gold or Silver Sheen)	1 lb. .75	2 lbs. 1.00
Beach Agate & Jasper from Oregon Beaches	1 lb. .50	3 lbs. 1.00
Obsidian (Red & Black)	1 lb. .50	3 lbs. 1.00
Petrified Wood (Gem Quality) from Washington	1 lb. .50	3 lbs. 1.00
Sugar Nodules from Oregon	1 lb. .50	3 lbs. 1.00

The above 6 items (total $6) for $5

• • •

Mail Orders Filled

All prices F.O.B. Portland

Rock Sheet on Request

Slabbing on 24" diamond saw.

• • •

AMES AGATE SHOP

(EVergreen 1-1891)

3638 S.E. Olsen Portland 22, Ore.

Cut Gems of Many Varieties

Green garnets and other types. Precious topaz in white, blue, golden. Ceylon zircons in many colors. Tourmaline, spinel and garnet in several colors.

India fern agates and the noble Uruguay sard. These must be seen to be appreciated by the real lover of gems.

Rich golden citrine and fine amethyst.

Onyx pendants for earrings.

Cameos (16x12 mm.) in jade, lapis lazuli, mother-of-pearl and other materials.

Rough tourmaline in many colors for cabochon and facet cutting.

Rare green spodumene for cutting.

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Ernest Meier

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Lapidary Equipment---

Frantom Cabochon Units, Rock-A-Teer Trim Saws with slabbing device.

Poly Arbors, with all accessories for grinding, sanding and polishing. Makes an excellent gem cutting outfit.

Diamond Saw Blades, all sizes to 16" in stock, standard prices.

Grinding wheels, sanding cloth, buffing powders, etc.

Cabochons---

Good stock of expertly cut and highly polished stones for jewelry making or collectors. Approval selections sent. Arizona lace pattern agate is the latest addition to our stock of choicest cabochons.

Custom Cutting---

Your stones expertly cut and polished to order for moderate charges.

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Now Is the Time

to take advantage of our
Pre-Christmas Specials

- Following our usual custom we give reductions on all items of jewelry and all gems for the Christmas trade.
- This is to give you a break with your Christmas spending as well as to help us spread out the Christmas rush.
- Write us explaining what you are interested in and we will send you a special quote by return mail. This does not obligate you.
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Write also for our free illustrated catalog covering services, materials, etc., retail or wholesale.

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Wholesale and Retail
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BOY FINDS DIAMOND

Lonnie Glenn Cornish, Route 4, Nashville, Arkansas, age 12, son of Columbus Cornish, guide at the Diamond Preserve, on Sunday, July 22nd, found a beautiful, flawless .03 carat diamond. It was promptly given to him absolutely free. The diamond found by young Cornish sparkles brightly in the sunlight and is one of the loveliest so far found by visitors to the Diamond Preserve of the United States, Inc.

Lonnie attends the Murfreesboro public schools and will enter the 8th grade this fall.

* * *

DIAMOND AND SAPPHIRE DOUBLETS IN CHICAGO

(As reported in the *Loupe*)

Recently a Graduate Gemologist, who wishes to remain anonymous, reported in New York that he had seen dozens of synthetic sapphire and diamond doublets in the hands of a Chicago dealer.

The dealer claims that he uses egg white for cement and has been pawning the doublets for years. Further, he had stacks of pawn tickets to prove it.

A rather modern twist to the old Robin Hood code of ethics causes him to practice his deception only on "unethical" pawn shops.

* * *

TWENTY-TWO LARGE DIAMONDS REPORTED FROM BRAZIL

Between the years 1760 (when diamond mining started in Brazil) and 1949 twenty-two large diamonds have been reported found in that country. The twenty-two stones total approximately 5,000 carats with the smallest weighing 80.30 and the largest, the Presidente Vargas, weighing 726.6 carats.

Complete information, including name, weight of rough and cut, year discovered, and locality, are given in the Winter Issue of *Gems and Gemology*.

The latest sizeable diamond discovered in Brazil is the "Presidente Eurico Gaspar Dutra" which was discovered in July, 1949, in the district of Coromandel, state of Minas Gerais. The rough stone weighed 407.68 carats and it was cut into 36 brilliants. Photographs of the rough crystal and cut stones are shown in actual size in the Spring Issue of *Gems and Gemology*.

ORIENTAL GEM MINING PRACTICALLY AT STAND STILL

It is hardly believable that jade mining in Burma has declined to the point where it is about *a ton a year*. The latest figures available (1949), recently released by Henry B. Day, Counselor of Embassy, indicates that jadeite production that year was 2137 pounds. The entire year's production of rubies was only 100 carats. The mined sapphire amounted to 2500 carats and spinel accounted for 12,500 carats.

Based upon these figures an examination of the facts would no doubt reveal that more corn flower blue sapphire was mined in the United States than in Burma and that California now leads the world in jade production.

MINING CONTINUES AT HAYRICKS OPAL MINE

Of particular interest in this day of diminished opal supplies is the report that the Hayricks Opal Mine, situated near the town of Quilpie in Western Queensland, Australia, is presently engaged in active mining operations.

Although first discovered during the close of the last century, the deposit was worked only intermittently up to 1946. Since that time it has been owned and operated by the Hayricks Black Opal Syndicate, a three man partnership with headquarters and cutting plant in Brisbane.

The material produced at the Hayricks locality is essentially "boulder" opal, i.e., opal-bearing siliceous ironstone nodules which occur in beds of sandstone and shale. Many types and qualities are represented, ranging from unattractive varieties to fine black opal with red, green, and blue play of color. The pattern varies from flash to harlequin and pinfire, while stellate (radiating, star-like patterns), arborescent (tree-like), banded, and other fanciful forms are not infrequently encountered. Much of the non-gem quality material is fashioned into inkwells, bookends, and paper-weights, while other qualities are being used for cameos.

The Queensland Geological Survey has publicly commended the members of the Syndicate for their progressiveness in reopening and developing the Hayricks Mine, and the present owners have expressed their hope that continued efforts will alleviate, to some extent, the current shortage of opal.

NEW BOOK FOR THE PEBBLE PUP

Here is the book you have been waiting for. Remember the boy or girl in your family if you are a rockhound and you want them to understand why you play with rocks.

THE FIRST BOOK OF STONES

By M. B. CORMACK

$1.75 Postpaid

(Plus 5c sales tax in California)

Here is a book about rocks the child will understand—written for children between 5 and 11—just like their school reader — plenty of illustrations and big type — substantially bound — shows them how to become a "rock detective." And don't think .YOU won't read it when you get it!

Lapidary Journal
PALM DESERT, CALIFORNIA

THE FAMOUS PRIDAY AGATE BEDS OPEN FOR DIGGING

Blue agate thunder egg deposit and plume agate bed No. 2 only

Admission $3 per person

Limit of 30 lbs. of gem material—with admission price . . . Additional material dug or collected charged at prevailing wholesale prices.

CLOSED ON WEDNESDAYS

We have in stock a large supply of the noted Priday Ranch agate filled thunder eggs at 50c per lb. Also fine agatized wood in various size masses at 75c per lb.

To reach diggings from U.S. Highway 97, turn east on dirt road near mile post 79 (Ashwood Road). Six miles to the agate diggings.

Fulton Agate Beds
(Formerly Priday Ranch)
GATEWAY (P.O. Address) OREGON

JADE

New shipment Nephrite Jade just arrived from the Kobuk Area of Arctic Alaska.

Square inch
$1.00 Airmailed
Half pound
$3.75 Postpaid
Five pounds
$30.00 Postpaid
Ten pounds
$50.00 Postpaid

Air Mail orders now for your cutting requirements for next Winter.

JADE MINERS
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Fairbanks, Alaska

Blank Mountings

Rings — Ear Wires — Tie Chains

Cuff Links — Neck Chains

Bezel — Clevices — Shanks

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Send Stamp for List No. 2

Agate Jewelry

Rings — Pendants — Tie Chains

Brooches — Ear Rings

Bracelets — Matched Sets

Send Stamp for List No. 1

O. R. JUNKINS & SON

440 N.W. Beach St. Newport, Oregon

DE BEERS MINE MAY REOPEN

Reopening of the old De Beers Mine is planned by De Beers Consolidated Mines, Ltd., if sampling of blue ground indicates operations may be profitable.

Early in 1950 three pumps were installed and draining of the 1,000 foot shaft was started. Experts have computed that 139,000,000 gallons of water have been removed from the twenty-one miles of underground workings.

Discovered in 1871, the De Beers operated until 1908. Pumping water continued until 1941 when that, too, was suspended.

When mining was in progress fifty years ago a large block of diamondiferous ore at the western section of the pipe was left untouched because the yield of diamonds from the top portion of this section was insufficient to make mining operations profitable. It is this section that is now being tested for possible profitable working since more advanced mining techniques are now in use. Access to this area will be gained through an old crosscut from the shaft at 1,000 feet, and prospecting will be carried out by a series of small drives from there.

If samples indicate that working the mine may prove profitable, the company may once again bring this famous old mine into operation.

* * *

BROCHURE OFFERED ON DIAMOND POLISHING

Industrial Diamond Information Bureau of Industrial Distributors, Ltd., London, announces *Diamond Tool Patents* IV, *Polishing of Gem Diamond,* by W. Jacobsohn. This covers a patent survey of the patents issued during the last 60 years on mechanization of diamond polishing, leading to semi-automatic and automatic machines. The summary of findings has been published as a brochure of 40 pages, containing a large number of illustrations. A short abstract is given of each patent, indicating the main features. Patents in England, U. S. A., Germany, Switzerland, Belgium, and France are covered.

Patents on the bruting of diamonds with another diamond have been compiled in an appendix, in which only more or less automatic and semi-automatic devices are described.

Any readers interested may obtain copies of the book for 12/6 (about

$1.75) from Industrial Diamond Distributors, Ltd., 32-34 Holborn Viaduct, London, E. C. 1.

* * *

MRS. B. F. NONNEMAN DIES

Mrs. B. F. Nonneman of Salinas, California, an advertiser with the *Journal* since our beginning, died in a San Francisco hospital on August 15th. Her attorney reports that she left no estate. We understand that all orders placed by our readers since about April 1st have been returned to them by the Post Office.

* * *

LAPIDARY SOCIETY BEING ORGANIZED IN PHILADELPHIA

People in the Philadelphia area who are interested in joining a study group similar to the many societies in the west are asked to register their names, addresses and telephone numbers with Mrs. Helen Bauhof, 352 Church Lane, Philadelphia 44. Mrs. Bauhof is Secretary of the new *Mineralogical Society of Pennsylvania,* a statewide organization, which recently made the Editor an Honorary Member. The latter Society had 85 members during its first month, is now up around the 200 mark and expects to end the year with a total membership of 400. They have been having regular field trips to several spots in Pennsylvania through the Summer.

* * *

OLD—BUT NEW TO SOME PEOPLE

The long-distance van driver was growing a little road-weary, so he pulled the unit safely off the highway to the shoulder of a pleasant stretch of Vermont country road. Lighting up a fag, he gazed around him and saw a farmer over to his right in a field removing rocks. Thinking to have a little fun, he stepped from his cab, walked over to the fence and said:

"Nice crop of rocks you raised here Hiram. Where did they come from?"

"Glacier brought 'em" grunted the farmer without even turning.

"Oh! the glacier, eh?" the van driver teased. "Where's the glacier now?"

"Well, if you're really interested, sonny," snapped the farmer, "I'll tell you. It's gone back after more rocks."

Sent in by Mr. R. R. Loppnow, of Winona, Minn.

WHEN YOU VISIT THE WASHINGTON SHOW

OCTOBER 25-26-27

Be sure to see our gem cutting school and visit our booth in the Willard Hotel.

Our booth will be official headquarters for the **Lapidary Journal.** You may buy single copies, place orders for back issues, renew your subscription or take out a new one.

Here you may secure a free list and description of all gem and mineral books currently published and place your order for any you desire.

We can answer your questions about local sights and many other things. Come and register with us.

★

GEM SCHOOL

1018 Vermont Ave., N. W.
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Only a Few Weeks-- Then Christmas!

Don't wait until the last minute!

Our stock includes rough material, slabs, cabs, facet stones, synthetics, fine mineral specimens, books, lapidary supplies, jewelry mountings in silver or gold, custom made jewelry, mounting service, etc.

Drop in and look over our stock Monday through Saturday 10 a.m. to 5 p.m. Wednesday night until 10 p.m. Closed Sundays.

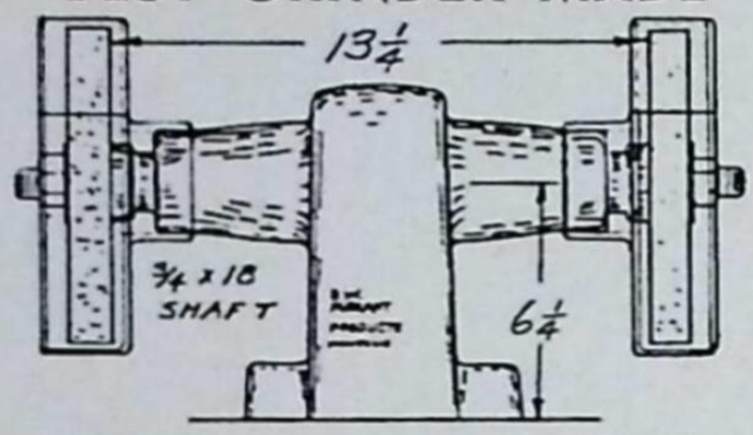
When writing, specify your interest as we have no catalog. Will be happy to answer inquiries.

Just received—Cabochon quality Amethyst from Mexico $3.00 a pound plus tax.

Valley Art Shoppe

21108 Devonshire Boulevard
Chatsworth California

BEST GRINDER MADE



$15.95 postpaid in U. S. A.
(Less 8" Wheels and Shields)
Cast Diza Splash Shield $6.50 postpaid
Save 20% to 40%
Buy direct from manufacturer
PRECISION BALL BEARINGS
Super-sealed from water and grit
Satisfaction guaranteed or your money and return postage refunded
Order early for Christmas
C.O.D.s accepted
California residents add 3% sales tax
1x8" #220 wheels **$6.51** postpaid
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With Carrying Case No. 404 and batteries for prospecting. Price complete.....$63.20
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It's Detectron Model DG2. Portable, Ultra sensitive, easy to operate. Has flasher, earphones, intensity meter. Complete with 6 uranium specimens. Price $98.50

Write for free literature today
Please state particular interests

SMITH'S FLUORESCENTS
220 S. W. Alder Portland 4, Oregon

HEAT TREATMENT USED FOR GREEN QUARTZ

In addition to other materials discussed in the literature, green quartz should be added. This has not been considered previously as a possibility but new deposits in Brazil have yielded some amethyst which, when heat treated, changes to a green color. The change is apparently permanent.

* * *

RUSSIA SELLS FAMOUS JEWELS

According to a reliable Australian source, it was recently reported in Brussels that the Russians are selling the diamond fortune of the former Czar and Czarina in order to increase their purchasing power of "machinery and electrical appliances."

It is said that the Soviet authorities began putting the stones on the market about two years ago where they were first purchased by an American broker, then by a Dutch group, and later by Franco-Dutch interests. The present buyer is reported to be a Brussels broker who has the large stones recut in Antwerp or Paris and disposes of the smaller ones in the United States.

* * *

FINE 160 CARAT DIAMOND FOUND IN SOUTH AFRICA

"It is the finest rough diamond in color I have ever seen," is the way Sir Ernest Oppenheimer described the 160 carat diamond recently recovered near the mouth of the Orange River.

The *Diamond News* states that the diamond "which is a perfect blue white gem of unusual purity, is an inch and a half long, three quarters of an inch deep and one inch wide. It is described as wedge-shaped and has a cleavage plane which suggests that it is a part, possibly the larger part, of an even larger stone."

It is further reported, in this same publication, that the stone was purchased by Romi Goldmuntz of Brussels in March and that it is understood the stone will be sent to New York to be cut into one square, one "fancy shape," and two round stones.

This is not the largest diamond found in the Orange River region as a 236 carat stone was reported about ten years ago. This larger stone, however, did not compare in quality to the recently recovered 160 carat diamond.

Special Notice

Our new Catalog of Lapidary Equipment, Supplies, Jewelry Mountings, Books, Tools, etc., will be available October 15.

Price for this catalog will be 50c—credited upon the first purchase of $5.00 or more.

SOMETHING NEW HAS BEEN ADDED!

See our beautiful display of the finest Navajo rugs from all parts of the Reservation. Ideal for Ranch Type, Mountain, Beach, and Desert homes.

FOR CHRISTMAS this year give a gift that will give a lifetime of service.

Open house Tuesday evening from 7 until 10:00 p.m.—Closed Sunday and Monday.

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THE DIGGIN'S

A Lapidary Shop in

THE LAST FRONTIER VILLAGE

America's most unique resort presenting the Early West in All Its Splendor

Stop by and see us on your way east or west. We are in a setting you will never forget.

Apple Blossom Rhodonite, lb.	$1.25
Joshua Tree (gem grade), lb.	1.25
(Book-end grade), lb.	.25
Oricaria Wood (gem grade), lb.	1.25
(Book-end grade), lb.	.25
Variscite (Utah Nodules), lb.	16.00
Sliced, sq. in.	.50
Good Cutting Material, lb.	.50

Mixed lot 10 lbs.—$4.00

•

EDWARD H. & NELLIE B. COMBS

P.O. Box 1576 Las Vegas, Nevada

OPALIZED OBSIDIAN From Mexico

"Peanut" Pitchstone (Almasite) Opalized Obsidian

WAY DOWN IN OLD MEXICO, the land of romance and undiscovered precious and semi-precious stones. I have found something entirely new and fascinating. Basically, it is opalized obsidian (pitchstone) but embedded in it are beautiful round, bright red inclusions, like rounded peanuts or jumping beans. It makes beautiful cabochons and outstanding cabinet specimens in the rough.

SEND ME $5.00 for about 3 lbs, and get the thrill of your rockhound experience . . . No exchanges or free samples. Rockhound special of one pound of fragments for one dollar postpaid. All will contain the red "peanuts" in pitchstone matrix.

DO NOT SEND CASH in letters to Mexico. Frequently letters are not delivered and cash is irrevocably lost.

Cobalt ore specimens. No. 1 strategic mineral. Sent postpaid for a dollar.

REFERENCE—Mr. J. L. Kraft of Chicago has been my friend for many years. I'm sure he will vouch for my honesty.

ALBERTO E. MAAS
Alamos
Sonora Mexico

OREGON GEM MATERIAL

PLUME AGATE—From Central Oregon, delicate bright red at top of slab, dark red to black beneath, all in a clear agate matrix and easily composed into a single cabochon, only 75c sq. inch. Lovely red and black plumes or flowers, in pale amber matrix field, in slabs, 50c sq. inch. Iris or rainbow agate slabs, excellent show, 50c sq. in.

WASCOITE—Alternately-colored, banded, agatized, ancient lake-bed deposit, takes high polish, 75c lb. Hampton Butte wood in greens and reds, highly agatized, 50c lb.

MOSS AGATE—Emerald green with jungle scenes, rare gem type, excellent quality. 75c sq. in.

OBSIDIAN—Glass Buttes . . . golden sheen, silver sheen, double flow structure, reds, and black, 30c lb. Same material, no fractures, for spheres, 50c lb. Emerald green moss agate, jungle scenes, new type, high grade gem quality in slabs, 75c sq. in.

OCHOCO NODULES—Scenic color range of agate scarlet to deep carnelian, 50c lb. Sold only in 5 lb. lots or over.

Postage, please, on rough material. All slabbed agate sent postpaid, for inspection — just send satisfactory references. Send for new price list.

GOING OUR WAY?
Put us down in your book for a visit.

Chet & Marge Springer
862 Roosevelt Avenue
BEND, OREGON

Gems From The Mail Bag

I am more than content with the *Lapidary Journal*. Moses Lowinger, Jerusalem, Israel.

* * * * *

Don't know any other paper that starts to come up to the *Lapidary Journal* in any of the different sections (either in the first or the last copy) and continues to improve with each copy over the previous issue. C. B. Lopp, Holbrook, Arizona.

* * * * *

Keeping the *Lapidary Journal* just as it is will really satisfy the many thousands of us —*yes Sir!* R. R. Loppnow, Winona, Minn.

* * * * *

Don't misplace this renewal blank. If that October number doesn't arrive by the third I'll be fit to be tied. Just can't get along without the *Journal*. It is the only magazine that comes our way which I read from cover to cover. Charles B. Reeves, Tulsa, Okla.

* * * * *

Your fine *Journal* has been a source of real enjoyment in this household. The two features distinctive and very helpful in your publication are the Advertisers' Index and your exhaustive coverage of the Societies—news, names, addresses, etc. William U. Inman, Silver Springs, Md.

* * * * *

I have just finished reading your article *Jade Sources—Past and Present*. A most informative and exceedingly interesting piece of reading to a still wet-behind-the-ears would-be rockhound. Sandy Ramsay, Glasgow, Scotland.

* * * * *

I consider the April edition worth the price of the subscription. J. W. Gilman, Temple City, Calif.

* * * * *

The June number was good but the April number was by far the best I have ever seen. Why don't advertisers change their ads more frequently and present something new? The same old ad repeated over and over gets so familiar and dull it can't possibly attract much attention. I like every issue filled with fresh new offerings of advertisers. George A. Lawson, Statesville, N. C.

* * * * *

I thought a long time ago that you had reached the peak in getting out a fine *Journal* but it seems that every time you issue a new number it is better than the last. It has gotten so that all of our gang quote from it and look upon it as an authority. Many sincere congratulations. H. . Zollars, Editor of *The Voice* of the *El Paso Mineral and Gem Society*.

* * * * *

I have neither space, time nor words to express my regards for your sincere help to the amateur rockhound. L. A. Sago, Midland, Calif.

* * * * *

Last week I received my first copy of the *Lapidary Journal* and have nearly worn it threadbare. Please rush a bargain bundle of back issues before this issue is entirely gone. George E. Bryant, Hopkinsville, Ky.

* * * * *

I loved your editorial about your one-sided cab. It has seemed to me lately that possibly this gem cutting hobby is drifting toward too much "big stuff" and it is getting too much like professional jewelry business. Dorothy Faulhaber, Thermal, Calif.

* * * * *

I want to thank you for the tremendous amount of space you devote to Wyoming jade in the *Lapidary Journal*. I can hardly imagine a more suitable organ for the dissemination of praise in behalf of the Wyoming stone. Your editorial columns repeatedly disclose that your convictions rest on a deep and unmistakable degree of sincerity. You may take it from me that it would still be a waste of time to seek such words of praise from any private or public publicity agency thus far established in the Wyoming field itself. Dr. C. S. Dietz, Cheyenne, Wyoming.

* * * * *

We never know how far an ad will go or who it will reach. In my ads I have been asking easterners to drop in and today a gentleman from North Carolina came in response to my ad. His ancestors came from England as did mine. They settled in northern New York state, as did mine, and later moved to Michigan, as did mine. While mine is not a common name, his name is the same as mine. You will therefore appreciate what my ads have meant to me. Eldon E. Soper, Glendale, Calif.

* * * * *

May I compliment you on the high quality of your magazine? I find it most interesting, helpful and inspiring in the pursuit of my hobby. Dr. Russell V. Smith, Chicago.

* * * * *

Since subscribing to your worthy publication I have had nothing but praise for it. Truly, you are doing a most commendable job. Nicola D'Ascenzo of *The D'Ascenzo Studios*, Philadelphia.

* * * * *

I enjoy your articles and am particularly in sympathy with your sentiments on the "hogging" tactics of so many rockhounds. It is due to them that so many good areas have been closed to unselfish collectors. Frances L. Wallace, Dixon, Calif.

* * * * *

Congratulations on the fine job you are doing with the *Journal*. I find it most interesting and helpful. H. B. Luria, Bethel, Conn.

PASCOE'S

Lapidary Equipment and Supplies

- **FRANTOM** cabochon unit (8" equipment) $112.50.
- Highland Park cabochon unit (6" equipment) $85.
- Highland Park cabochon unit (6" equipment) $135.
- We specialize in slabs.
- New shipment of malachite. Unusual slabs 60c sq. in., tax included.
- First quality tiger eye slabs—golden brown, blue and yellow 30c a sq. in., tax included.
- Kern Dry Lake petrified wood. 3 or 4 chunks to a pound with many colors. Minimum order 2 lbs. for $2.25 postpaid and tax included.

Jewelry blanks. Many lovely designs to choose from. Rings, brooches, pendants, bracelets, etc.

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Genuine Ceylon Star Sapphires in sizes from 1 to 10 carats. Priced according to quality. From $7 to $30 a carat.

ALSO:
Ceylon Tourmaline $4 to $20 per ct.
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Many other certified gems—
both genuine and synthetic

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JADE - JADEITE

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BEAUTIFUL COLORS AND SHADES

	Square Inch
White and Green	$ 2.00 to $ 5.00
White with Emerald Green	5.00 to 10.00
White with Apple Green	5.00 to 10.00
Solid Green Jadeite Light	10.00 to 20.00

Small slabs of Russian Jade 75c to $1.50 each
Other pieces and colors. Too many to describe.

A few choice slices of Persian Turquoise in Slabs 3/16 in. thick $7.00 in. Pieces run $10.00 to $20.00 per slab. No matrix. All solid Turquoise. Persian Blue.

Matched Pairs of Turquoise Gems in sizes 12-16 & 13-18 $6.00 to $10.00 per pair.

CHOICE FIERY OPAL
$3, $6, $10, $15, $25 per piece and up

Schools, silversmiths, goldsmiths, jewelers, manufacturing jewelers, collectors—write for our lists on cut stones. All types of cut stones. All colors synthetic, genuine, faceted, cabochon, hearts, crosses, etc.

Charles Weidinger

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THE ORIGINAL AUTHENTIC QUARTZ STARS—14-33 mm.—**$9.00—$20.00** per dozen — special prices to dealers on large lots.

A few fancy cut faceted quartz beads at **$6.00-$8.00.** Last call for special orders on rose and smoky quartz beads. We will have amethyst beads cut to order—your stone or ours.

Birthstone collection—full set—faceted stones—12 different—**$25.00.**

Scarab bracelets made up to order—10-14 carat gold only. All sorts of scarabs and cameos—particularly fine heads in shell—**$25.00** dozen—brooch size.

C. F. MILLER
R.F.D. **BOOTHWYN, PA.**

DEALERS ATTENTION

If you wish to know where to get America's fastest selling mineral book in time for your Christmas market write direct to the publishers for information.

THE FIRST BOOK STONES—$1.75
For the pebble pups in the rockhound's family. Written for children from 5 to 11 and presented just like their school readers with ample illustration.

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Publishers of the famous
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About Our Cover

This time our cover contains another portrait . . . a complete "picture" of tiger eye. It gives the location of tiger eye and shows it in all lapidary stages. It was conceived by J. Lester Cunningham, President of the *Chicago Lapidary Club* and proprietor of J. L. Cunningham & Co., an advertising agency in Chicago. But let Mr. Cunningham tell about it . . .

"The tiger eye display consists of nine slices of golden tiger eye cut from one chunk, illustrating nine major lapidary steps from rough to gem . . . 1—rough; 2—slabbed; 3—templated; 4—trimmed; 5—blanked; 6—ground; 7—sanded; 8—polished; 9—mounted. The mounted cab is set in a handmade sterling silver pendant. The background is original artwork—a water color in full color. The tiger is an authentic African specimen that is most striking because of color and detail—even to the correct placing of the stripes. The hand lettering is in various shades of rust red to match the usual tiger eye matrix. The map of Africa is equally authentic and detailed—with a star at the bottom indicating the Griqualand district from which the material comes. The area around the map is a light pastel green, setting off the whole composition.

"I originally conceived the idea of making the display because so many visitors at the office knew about my hobby and kept asking me how I cut gems. So I thought I'd make a display which would show the basic major steps. I selected tiger eye because it was the one gem material which I thought best suited to show the same material in various stages of completion. Next I made a rough layout and then called in Bob Alford, our Art Director. Bob snapped at the bait like a hungry trout in early Spring. We had some time finding out exactly how the stripes ran on a genuine African tiger as there are numerous varieties from widely separated places and they are not the same when it comes to stripes. We had more trouble learning just where Griqualand was. All this took time in research but finally Bob's masterpiece was finished and we mounted the stones and the job was done. The display is the first of nine which I am making for use on our office walls. It was recently exhibited at the Chicago Natural History Museum.

(Editor's note: Mr. Cunningham's fine portrait on jade will appear on the cover of our April, 1952 issue. And Mr. Cunningham—it will not detract a bit from your beautifully educational piece but we wish to avoid a lot of correspondence from our readers. No striped tiger has ever yet been seen in Africa unless it was with a circus. The tiger is strictly an Asiatic animal.)

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(ROUGH)
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I have LOTS of good extras
OPALS — COPPER — FLUORESCENTS
JASPERS — AMETHYST XLS, ETC.
Stop in—bring your extras
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- **GENUINE QUARTZ crystal stars** —5 point, tips drilled for easy mounting—14, 20, 30 mm. sizes at **$9.00, $11.00,** and **$15.00** per dozen.
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◆ News of the Societies

LOS ANGELES LAPIDARY SOC. accepted invitations to display their work at the Los Angeles County Fair at Pomona and the Rockhound Fair at Compton. The Los Angeles County Fair is now the largest fair of any kind in America and it was the first Fair to pass the million paid attendance mark last year. First day attendance this year was 45,000. The Fair has provided a new gem and mineral hall with 200 cases for the gems of the Los Angeles, Hollywood and Old Baldy Lapidary societies. Victor Arciniega recently gave a talk before the Society on "Thunder Eggs, Geodes and Agates." 45 members attended a field trip to the Monterey jade location.

* * *

CHICAGO LAPIDARY CLUB is initiating a program of having three speakers at each meeting—a main speaker on a lapidary subject, a "how to do it" speaker on gem cutting and another on silvercraft.

* * *

SAN DIEGO LAPIDARY SOC. cleared $400 from the booth they operated at their County Fair. Maxine Scott, Certified Gemologist, recently gave a lecture on synthetic gems and their identification.

* * *

PASADENA LAPIDARY SOC. (Calif.) recently witnessed a demonstration by Mr. Mathieu of his sphere making machine and heard his talk on how spheres are made. This society is the first to come out with a bulletin set in type and printed by a printer. The meeting place has been changed to more accessible quarters—the second floor of Odd Fellows Hall on the third Tuesday.

* * *

SAN JOSE LAPIDARY SOC. (Calif.) recently conducted a lapidary procedure quiz for its program. Mr. L. C. Bergsten presented a fine talk on jade before the society. The date for next year's show has already been set—April 19th and 20th.

* * *

HOLLYWOOD LAPIDARY SOC. (Calif.) recently held a hobby night at which members were invited to present phases of other hobbies they followed. The society is all set for their fourth big show on Oct. 20 and 21. See Calendar of Events.

* * *

GEM CUTTERS GUILD (Los Angeles) heard Victor Arciniega at their last meeting in a talk on the use of the polariscope in identifying minerals.

* * *

CHICAGO ROCKS & MINERAL SOC. will hold its annual rock auction at its November meeting. This is one of their big events during the year.

* * *

SAN ANTONIO ROCK & LAPIDARY SOC. recently held a "bragging rock" night at which every member was invited to bring his favorite rock and tell how he found it or where he purchased it and why he loved it best. This is a fine kind of a program for it makes the whole society participate.

* * *

SAN DIEGO MINERAL & GEM SOC. recently heard Norman Dawson tell about his trip to Topaz Mountain and Fred Van Pelt, unique lapidary, told how he became a rockhound. This society is the only one operating its own lapidary school. The Fall term started on September 17. 125 cases of gems and minerals went on display at their annual show while this issue was in the mail.

* * *

SHADOW MOUNTAIN GEM & MINERAL SOC. (Palm Desert, Calif.) held its first regular meeting on September 14th at which time the Editor gave a talk on the fundamentals of gem cutting and showed the tools and precedures used in cutting a cabochon to 70 persons. The October meeting will hear George Ashley tell about his Kunzite mine and his recent big strike and the Editor will give a short biography of Mr. Kunz. The Society won second prize money ($25) for their gem and mineral display at the recent Hemet Farmer's Festival.

* * *

GEM & MINERAL SOC. OF SAN MATEO CO. (Calif.) recently heard Raymond Addison of cameo fame in a lecture on the fundamentals of jewelry making.

* * *

PHILDELPHIA LAPIDARY SOC. is in process of forming. Interested persons please communicate with Helen M. Bauhof, 352 Church Lane, Philadelphia 44. Mrs. Bauhof is Secretary of the Mineralogical Society of Pennsylvania which recently made the Editor an Honorary Member.

* * *

SANTA FE GEM & MINERAL CLUB recently heard Sam Gordon (formerly Curator of Gems & Minerals at the Philadelphia Academy of Science) in a lecture on mineral collecting.

* * *

SEQUOIA MINERAL SOC. (Fresno, Calif.) recently held a Montana Agate Night at which members were asked to bring for display the best specimens of their Montana material. They held a joint meeting with the newly formed *Fresno Gem and Mineral Soc.* in Roeding park where a display of gems and minerals was held after a picnic supper.

* * *

OREGON AGATE & MINERAL SOC. (Portland) had more than 4000 *non-rockhounds* at their recent tremendously successful show. Each visitor was given a printed leaflet entitled "What Makes A Rockhound," written by President Melvin Kathan. If other societies would like to do this at their coming

JADE

JADE

NEPHRITE
From the Famous
MONTEREY DEPOSIT
Selected
Rough — $3.00 per lb.
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BLACK.....25c each or $2.50 dozen.
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Brazilian Agate Marbles ¾ inch plain, colors and banded. Nicely marked.....$1.00 each
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75c and up per pound in the rough
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Also good Texas fluorescent rough
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in this issue

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shows we feel sure Mr. Kathan would allow them to use the leaflet. Address him at 11 S. E. 78th Ave., Portland, Ore., if you desire a copy.

* * *

NEWAUKUM ROCKHOUNDS (Centralia, Wash.) recently had a field trip for agate and their first annual picnic at which they roasted a feast over a fire made of red cedar dug from under a lava bed. Geologists said the wood was 10 to 30 million years old. (?)

* * *

FORT RANDALL GEMITES (Pickstown, S. D.) is composed of persons working on the dam project over the Missouri River at Fort Randall. They have members from nearly every state.

* * *

CENTRAL IOWA MINERAL SOC. (Des Moines) is planning a November show at Younker's Store. They report there were only 178 registered guests at the recent convention of the Mid-west Federation of Mineral Societies at Houghton, Mich. Small town (2204) small attendance.

* * *

COACHELLA VALLEY MINERAL SOC. (Calif.) informs us that they are conducting gem cutting classes at Coachella Valley High School beginning September 21st. A beginner's class is held on Wednesday nights from 7 until 10 and an advanced class on Thursday night each week.

* * *

COLORADO MINERAL SOC. (Denver) recently held a garnet panning contest at one of its meetings.

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Gem Bibliography

(First Installment—Revised)

We present herewith a revised first installment of our gem bibliography. In the August issue we advised that the cooperation of so many unselfish readers was so overwhelming that we could not revise the list in time for publication at that time. The additions we received to the list we started publishing in the June issue were so many that we concluded to scrap that part of it and start all over again.

Many suggestions have been made by our correspondents which we are adopting. Where we have knowledge we are mentioning a book in its first edition only and adding the years when other editions appeared when we have that knowledge. We cannot undertake, as several have suggested, the listing of periodical literature on the subject of gems. That would be a full time project, particularly in view of all the magazine articles appearing every week on the subject of gem cutting and rockhounding . . . many of them containing as much mis-information as information.

Books on silvercraft are not being included in the list unless they contain useful information on gems and gem setting. Strictly mineral books are not being included except where they are really key books . . . that is, books widely accepted as supplemental information in connection with gemology. It is very difficult to draw the line dividing mineral and silvercraft literature from gem literature, especially where the book is not available, and because it is humanly impossible to read all the available books on the subject. We hope there will be a friendly tolerance in our decisions.

We have discontinued numbering each item since it is so apparent that such numbers would have to be changed later. Sometime, when we publish the list in book form, we shall assign numbers as a convenience for booksellers and libraries using the list if it is finally accepted as an authority.

Each issue from here on then will carry a portion of the list . . . as much as we have room for. Please watch it and when you find that you have a book published in any year we have listed that is not in our list, send us the details written in the order in which we are presenting the list.

1341, *Ku Yu T'u, "Ancient Jades Illustrated,"* by Chu Teh-jun. In two chapters. Republished in 1753 with an edition of the Po Ku T'u.

1341, *Tsi Ku Yu T'u, "Collection of Ancient Jades,"* with Illustrations. Published during the Yuan period. (See Laufer, *Jade,* Page 12.)
Another edition was published in 1647.

1502, *Speculum Lapidum,* by Camillus Leonardus. Probably the earliest book still available in its original form. Translated into English in 1750. Venice.

1531, *Marbodei Galli Poetae Vetustissimi de Lapidibus Pretiosis Enchiridion, cum Scholiis Pictorii Villingensis,* by Marbodus. Friburgi (Freiburg).

1547, *De Gemmis Aliquot Libri Duo,* Franciscus Rueus. Parisiis (Paris).

1594 (?), *Gemmae et Sculpturae Antique,* Leonardus Augustinus and Jacobus Gronvius. Gives fine engraved reproductions with descriptions of antique carved gems. In Latin by L. Strik.

1601, *The History of the World,* by Caius Plinius Secundus (commonly called Pliny the Elder). A translation into English of the 37th volume of the History, by Philemon Holland. Devoted to precious stones and written in 77 A.D. A monumental work. (For a modern version see *Roman Book.* Adam Islip, London.

1603, *De Gemmis et Lapidibus Pretiosis Eorumq,* by Andrea Bacci. Francofurti (Frankfort).

1609, *Gemmarum et Lapidum Historia,* by Anselme Boece de Boot. Hanoviae (Hanau).

1617, *Trattato delle Gemme che Produce la Natura,* by Lodovico Dolce. Venetia (Venice).

1644, *Le Parfait Ioaillier ov Histoire des Pierreries,* by Anselme Boece de Boot, physician to Emperor Rudolph II, and Andre Toll, physician of Leyden. Describes, catalogs and classifies jewelry, gem stones, and ancient lapidary techniques and machines. Contains crude but revealing illustrations. Iean-Antoine, Leyden.

1652, *A Lapidary or History of Precious Stones,* by Thomas Nicols, a lapidary. Deals with definitions, divisions, classification, generation, properties and colors of gem stones, with "cautions for the undeceiving of those that deal with precious stones." Thomas Buck, Cambridge. (The oldest original work in English.)

1653, *Arcule Gemmea,* by Nicolo (Italy?)

1669, *Traite des Pierres Precieuses,* by Robert De Berquem. Published in Paris, France.

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1671, *The History of Jewels,* by Hobart Kemp, 128 pages in calf. A very rare work containing many interesting details about the trade in diamonds.

1672, *An Essay about the Origin and Virtues of Gems,* by Robert Boyle. London.

1676, *Voyage en Turquie, en Perse et Aux Indes,* by Jean Baptiste Tavernier. Published in Paris, France.

1686, *Le Gemme Antiche Figurate,* by Leonardo Augustini. Many fine steel engravings and descriptions of antique carved gems. Gio Battista Brusotti, Rome.

1719, *Neuer Vollkommener Natur—und Kunstmaessiger Unterricht von Edelsteinen,* by Arelius Gemmam. An old volume with surprising information on the cutting and polishing of gems, how to cut glass and make doublets, how to detect "false" stones and how they are made, and descriptions of the equipment used. In German. Nicolaus Foerstern, Hanover.

1720, *Gemmarum Affabre Sculptarum Thesaurus,* by Martinus Ebermeyer and Jacobus Baier, M.D. A lexicon in Latin describing many ancient sculptured gems, with hundreds of illustrations of portraits, groups, and scenes, from the Egyptian, Green, Roman, and other ancient lore. Prostant Exemplaria, Nuremberg.

1721, *Capita Deorum et Illustrium Hominum,* by Martinns ab Ebermayer. Descriptions in Latin of 450 gem portraits of the Gods and many illustrious persons. Prostant Exemplaria, Francofurti.

1727, *Raccolta di Camei e Gemme Antiche,* by Pietro Santi Bartoli. Many reproductions of ancient cameos cut in various gem materials. Francesco Giannini, Rome.

1741, *Gemmae Antiquae Caelatae* or A Collection of Gems, second edition, by George Ogle, Beautifully executed drawings of ancient gem sculptures. Claude Du Bosc and Wm. Darres, London.

1746, *History of Stones,* by Theophrastus, an English version, and notes including the modern history of gems, translated by J. Hill. London.

1750, *A Treatise on Diamonds and Pearls,* 4th edition, by David Jeffries. A reprinting issued in 1871, apparently without changes in content. Considers the importance and gives plain rules for ascertaining the value of diamonds and pearls, and discusses the true method of manufacturing diamonds (the first reference to synthesis). W. L. Molyneux, London.

1752, *The Mirror of Stones,* by Camillus Leonardus, physician to Prince Caesar Borgia, Duke of Romandiola of France. The English translation of the original Latin written in 1502. Describes the nature, generation, properties, and varieties of 200 precious stones. J. Freeman, London.

1754, *A Treatise on the Ancient Method of Engraving Precious Stones Compared with the Modern,* by Laurentius Natter, engraver on gems. Illustrated with copper plates. Printed for the author in Vine Street, Picadilly, London.

1768, *A Select Collection of Drawings from Curious Antique Gems,* by T. Worlidge. Fine etchings by a famous artist. Dryden Leach, London.

(Continued on page 320)

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1774, *Treatise on Gems,* (Magatamako, by Shisei Tanikawa, 20 pages. Published in Japan in the Japanese language.

1774, *Naturgeschichte Aller Edelsteine,* by Johann Baumers. Wien (Vienna).

1778, *Des Pierres Precieuses,* by M. L. Dutens, Paris.

1778, *Beitrage zu einer Abhandlung von Edelsteinen,* by U. F. B. Bruckmann. Braunschweig.

1779, *Ku Yu T'u P'u,* "Illustrated Description of Ancient Jades," in 100 chapters. This is the collection, supposedly, of jade belonging to the first emperor of the Southern Sung dynasty, Kao-tsung (1127-1162 A.D.) which consisted of over seven hundred pieces, prepared by a commission of nineteen, including one writer and four artists, Liu Sungnien, Li T'ang, Ma Yuan and Hia Kuei. The artists reproduced the jade pieces in colors for the one original copy, to be dedicated to the Emperor. (cf. Berthold Laufer, *Jade,* 1946, South Pasadena, P.D. and Ione Perkins in cooperation with The Westwood Press and W. M. Hawley, Page 9.) The commission was headed by Lung Ta-yuan, President of the Board of Rites (Li pu) who also prefaced the work in 1176. First published in 1779, after remaining in manuscript for over 600 years. This work apparently is largely fraudulent, according to Dr. Laufer's description of its contents and history.

1779, *Abhandlung von den Edelsteinen,* by L. Dutens. Nuremberg.

1779, *Bestimmung der Bestandteile einiger Edelsteine,* by Franz Carl Achard. Berlin.

1784, *Hauy, l'Abbe. Theorie sur la structure des Cristaux,* 8 plates. Published in Paris.

1785, *A Collection of Fifty Prints from Antique Gems,* by John Spilsbury. In the collection of the Right Honorable Earl Percy, the Honorable C. F. Greville and T. M. Slade, Esq. Excellent reproduction of fine sculptured gems. John Boydell, London.

1787, *The Art of Making Colored Crystals to Imitate Precious Stones,* by P. E. Fontanieu, translated by W. Drew. London.

1804, *Gems, Selected from the Antique,* by Dagley. A study of engraved gems with many excellent illustrations. John Murray, London.

1804, *Nachtrag uber den Sarder, Onyx und Sardonyx,* by U. F. B. Bruckmann. Braunschweig.

1808, *Treatise on Precious Stones,* by Cypuin Prosper Brard. Published in French (*Traité des Pierres Precieuses*) Description of machines and polishing methods. 8 plates—2 volumes.

1813, *A Treatise on Diamonds and Precious Stones,* by John Mawe. London. 2nd edition—1815.

1814, *Manual of Mineralogy,* by Arthur Aikin. Written by one of the founders and secretary of the Geological Society of Great Britain.

1815, *Descriptive Catalog of Diamonds in the Cabinet of Sir Abraham Hume,* by the Count de Bournan. In French with English translation. John Murray, London.

1816, *Travels in the Interior of Brazil,* by John Mawe. Emphasis on the gold and diamond districts of Brazil . . . includes descrip-

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tion of a trip to the Rio de la Plata a historical sketch of the revolution of Buenos Aires. By M. Carey, Boston. (5 engravings.)

1816, *Anleitung zur Kenntniss der Edelsteine und Perlen* als Handbuch fur Juweliere und Steinschneider, by J. C. Hendel. Halle.

1817, *Traite de Caracteres Physique des Pierres Precieuses pour Servir a Leur Determination Lorsqu'elles ont ete Taillees,* by Rene Just Hauy. Published in Paris, France.

1819, *Versuch uber die Kennzeichen der Edelsteine und deren Vorteilhaftesten Schnitt,* by J. A. F. Fladung. Pesth.

1823, *A Treatise on Diamonds and Precious Stones,* by John Mawe. Published in London.

1825, *Treatise on Mineralogy,* or the Natural History of the Mineral Kingdom, by Friedrich Mohs, of the University of Vienna, translated, with considerable additions, by William Haidinger, from the original work published in 1665. Mohs was one of the originators of the crystallographic system and his scale of hardness is still in use. 50 plates, half grain, gilt sides.

1825, *American Minerals,* by Samuel Robinson, M.D., of Boston. A catalog of their localities in the U. S. and British Provinces. All known locations of minerals and gem stones east of the Mississippi River.

1827, *Description of the Lapidary's Portable Apparatus for Cutting, Slitting, and Polishing Crystals, Jasper, Agate, Chalcedony, and Precious Stones,* by John Mawe. *Written expressly for amateur lapidaries.* London.

(To be continued in the next issue.)

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(Continued on next page)

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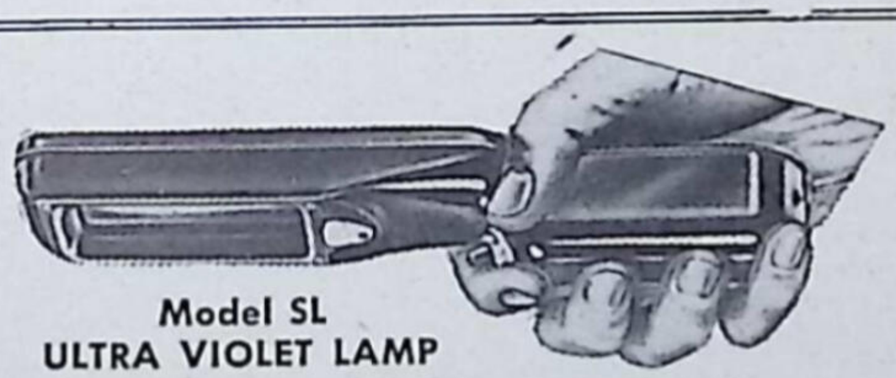
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STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF THE LAPIDARY JOURNAL published bi-monthly at Palm Desert, California, for October 1, 1951.

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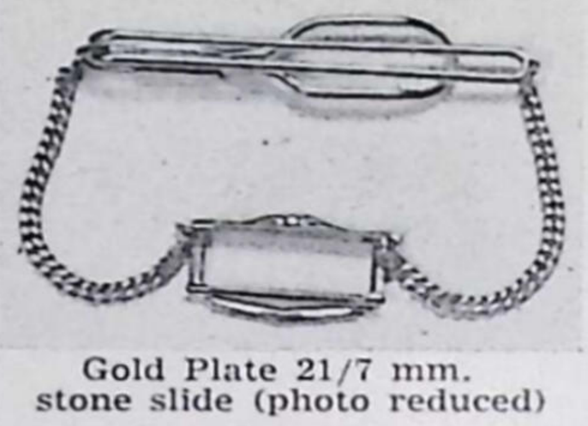
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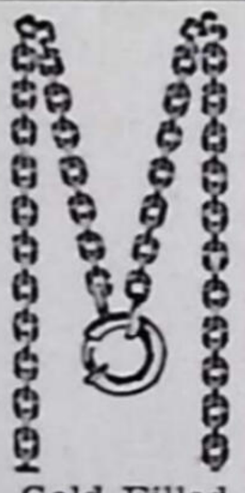


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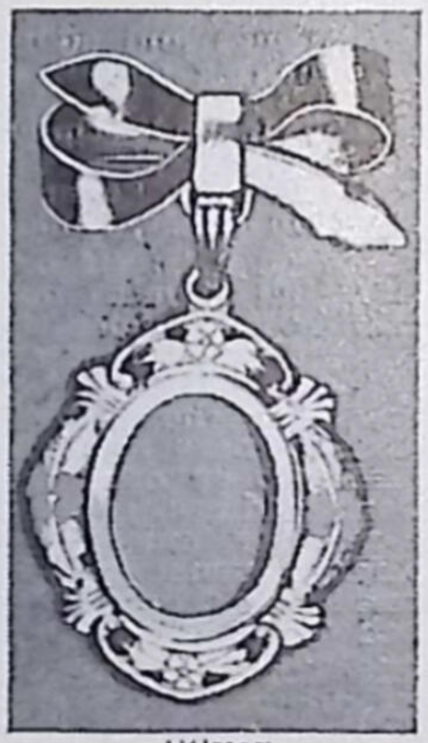
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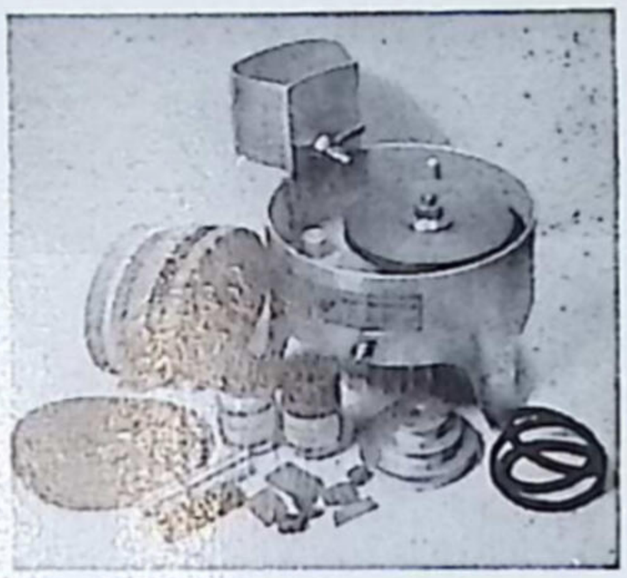
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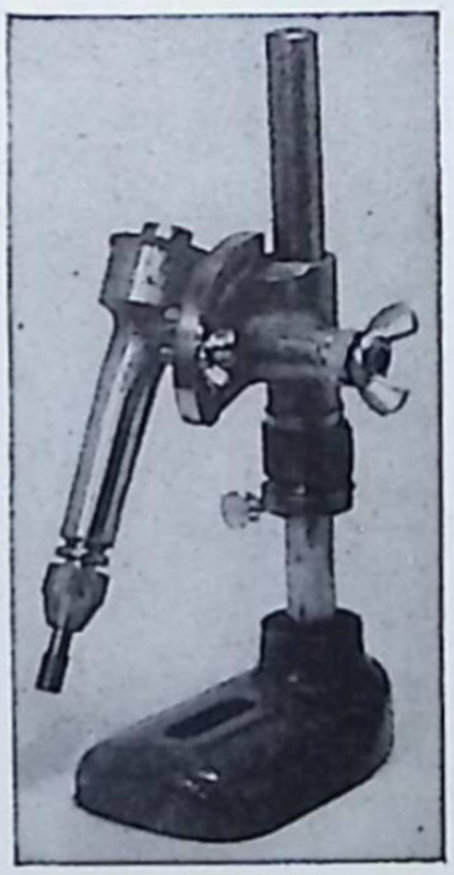
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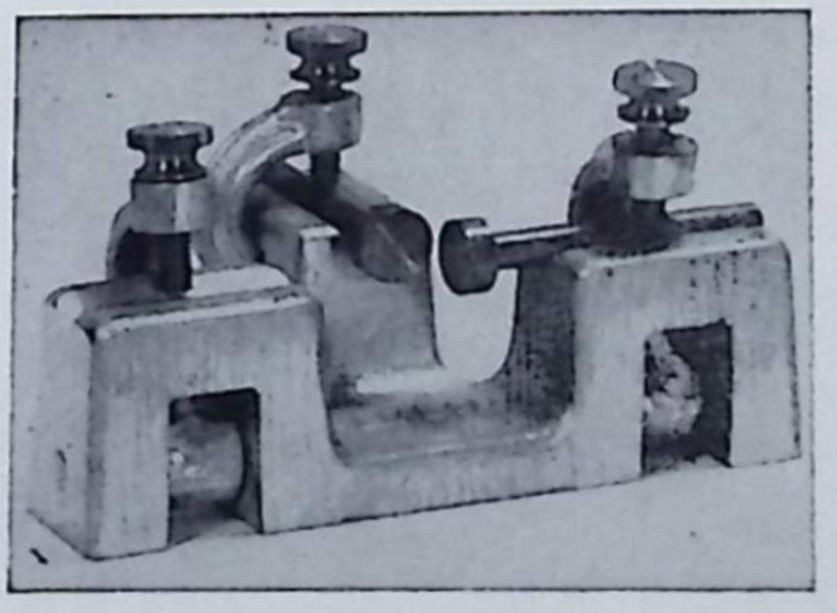


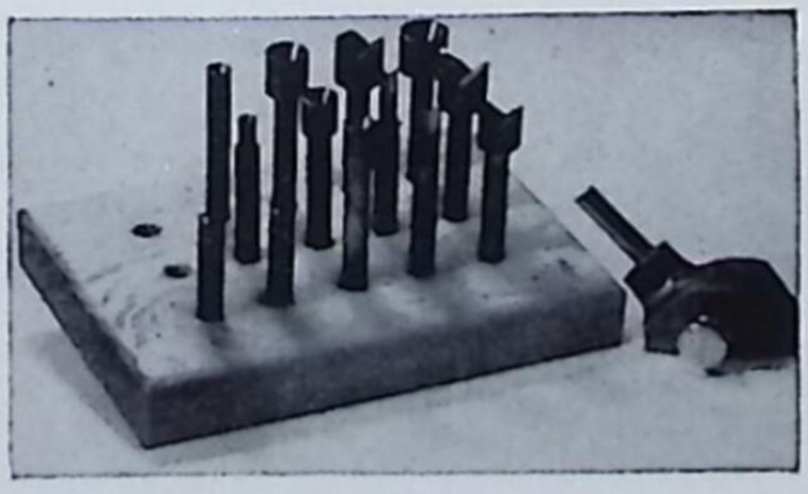
"GEMLAP" MODEL FH-3 FACET HEAD

For use on Gemlap Model 1-A or any other type horizontal machine. Constructed entirely of Bronze and Brass with exception of stand-rod, which is of MONEL, 5/8" diameter. Adjustable knurled raising and lowering micromatic adjustment. Cast iron machined base. The head has two inclosed bevel gears, which mesh together on all of the 32-calibrations, plus a calibrated vernier (cheater) for split facets and cutting odd shapes. An angle stop is provided on the refractive index quadrant, so that the head may be tilted for inspection without removal from the stand-rod. Brass dops are held by a split collet chuck. Complete with one brass dop and wood case.....**$37.50**

"GEMLAP" MODEL SR-1 SPEED REDUCER

For use on our Model 1-A machine. Allowing necessary reduction in speeds for faceting..... .....**$15.50**





"GEMLAP" TRIPLE "V" BLOCK

Manufactured of cast aluminum with two machined brass FACE PLATES. Lines up stones three ways to assure accurate mounting of gem stones in the dop stick. Accurate milled slots. Clamps require only one-fourth turn for tightening or releasing. Clamps automatically drop out of way when loosened so dop can be removed **$5.50**

"GEMLAP" BRASS DOP STICKS

A complete set of 13 machined brass dops 2⅜" in length, ¼" diameter shank, head sizes from 1/16" to ½" and in a variety of shapes. Mounted on a wood base....**$7.50**
45° Facet Table Grinder.....**$3.50**

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